Regulatory Analysis Form

(Completed by Promulgating Agency)

IRRC

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INDEPENDENT REGULATORY REVIEW COMMISSION

SECTION I: PROFILE

(1) Agency: **Bureau of Professional and Occupational Affairs**
State Board of Crane Operators

(2) Agency Number: **16A-71**

Identification Number: **16A-7101**

IRRC Number: 2850

(3) Short Title: **State Board of Crane Operators**

(4) PA Code Cite: **49 Pa. Code § 6.1 – 6.61.**

(5) Agency Contacts (List Telephone Number, Address, Fax Number and Email Address):

Primary Contact: **Christopher McNally, Assistant Counsel, Department of State; (717)783-7200; P.O. Box 2649, Harrisburg, PA 17105; fax (717)787-0251; chrmcnally@state.pa.us**
Secondary Contact: **Joyce McKeever, Deputy Chief Counsel, Department of State; (717)783-7200; P.O. Box 2649, Harrisburg, PA 17105; fax (717)787-0251; jmckeever@state.pa.us**

(6) Primary Contact for Public Comments (List Telephone Number, Address, Fax Number and Email Address) – Complete if different from #5: **Penny Walker, Board Administrator, Department of State; penwalker@state.pa.us**
State Board of Crane Operators, P.O. Box 2649, Harrisburg, PA 17105
(717) 783-3397; fax (717) 705-5540

(All Comments will appear on IRRC'S website)

(7) Type of Rulemaking (check applicable box):

- [X] Proposed Regulation
- [ ] Final Regulation
- [ ] Final Omitted Regulation
- [ ] Emergency Certification Regulation;
- [ ] Certification by the Governor
- [ ] Certification by the Attorney General

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(8) Briefly explain the regulation in clear and nontechnical language. (100 words or less)

This is an initial general rulemaking proposed to implement the Crane Operators Licensure Act. (Act 100 of 2008, 63 P. S. §§2400.101-2400.2103). The rulemaking includes definitions of key terms, and setting fees; procedures and standards for registering trainees and obtaining licenses; standards of conduct; and procedures and standards for certifying organizations.

(9) Include a schedule for review of the regulation including:

A. The date by which the agency must receive public comments:	03/31/2010
B. The date or dates on which public meetings or hearings will be held:	1/27/2010 2/24/2010 3/24/2010 4/28/2010 5/26/2010 6/23/2010
C. The expected date of promulgation of the proposed regulation as a final-form regulation:	06/30/2010
D. The expected effective date of the final-form regulation:	07/31/2010
E. The date by which compliance with the final-form regulation will be required:	10/08/2010
F. The date by which required permits, licenses or other approvals must be obtained:	10/08/2010

(10) Provide the schedule for continual review of the regulation.

The regulations will be reviewed monthly to determine what additions, deletions, or modifications should be made, according to experience gained through enforcement actions, as well as changes to the statute.

SECTION II: STATEMENT OF NEED

(11) State the statutory authority for the regulation. Include specific statutory citation.

Section 2102 of the Crane Operator Licensure Act (act) (63 P.S. § 2400.2102) requires the Board to promulgate regulations implementing the act within 18 months.

(12) Is the regulation mandated by any federal or state law or court order, or federal regulation? Are there any relevant state or federal court decisions? If yes, cite the specific law, case or regulation as well as, any deadlines for action.

No.

(13) State why the regulation is needed. Explain the compelling public interest that justifies the regulation. Describe who will benefit from the regulation. Quantify the benefits as completely as possible and approximate the number of people who will benefit.

This rulemaking is required by statute and is the first general rulemaking to be adopted by the Board. There are approximately 2,500 individuals who are certified by NCCCO residing in Pennsylvania that will be required to be licensed under the act. There is an undetermined number of other individuals who are not certified but who may be eligible for licensure under Section 506 and that number is estimated at 250.

(14) If scientific data, studies, references are used to justify this regulation, please submit material with the regulatory package. Please provide full citation and/or links to internet source.

Attached OSHA, ASME documents and Sunrise Report. Only portions of the OSHA Proposed Rule in the Federal Register, and those portions of the ASME Standards, relating to crane operator qualification have been attached to this RAF. Please note that the entire OSHA Proposed Rule includes more than 280 pages in the Federal Register, and that the ASME standards exceed 100 pages in total.

(15) Describe who and how many will be adversely affected by the regulation. How are they affected?

There may be an undetermined number of persons who operate cranes who have not been certified and who are unwilling or unable to be certified or meet the requirements for grandfathered licensure. If they choose not to seek licensure under the act, then they will only be able to operate a crane as defined by the act in coal mining or manufacturing applications.

(16) List the persons, groups or entities that will be required to comply with the regulation. Approximate the number of people who will be required to comply.

Estimated 2,750 individuals who are residents of PA will become licensees.

SECTION III: COST AND IMPACT ANALYSIS

(17) Provide a specific estimate of the costs and/or savings to the **regulated community** associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

The total cost to the regulated community is estimated as $157,500 per year. This represents the biennial application and licensure fees of $100 per person multiplied by the estimated licensed population of 2,750 individuals, which equals $275,000 every two years. In addition, the amount includes an estimate of $1,000 for 5 organizations that apply to become an approved certifying organization each year, plus estimated legal expenses for licensees subject to discipline of approximately $15,000 per year, based upon an estimated caseload of 10 cases per year, and $1,500 in legal fees for each licensee subject to discipline.

Savings are difficult to estimate because savings, if any, would be derived from lower workers' compensation and liability insurance premiums due to safer crane operations.

(18) Provide a specific estimate of the costs and/or savings to **local governments** associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

There will be no costs or savings to local government.

(19) Provide a specific estimate of the costs and/or savings to **state government** associated with the implementation of the regulation, including any legal, accounting, or consulting procedures which may be required. Explain how the dollar estimates were derived.

The Board is proceeding with the proposed rulemaking based upon the estimate of a budget of $142,500 per year. Licensing fees will cover those costs.

Regulatory Analysis Form

(20) In the table below, provide an estimate of the fiscal savings and costs associated with implementation and compliance for the regulated community, local government, and state government for the current year and five subsequent years.

	Current FY Year	FY +1 Year	FY +2 Year	FY +3 Year	FY +4 Year	FY +5 Year
SAVINGS:	$	$	$	$	$	$
Regulated Community	0	0	0	0	0	0
Local Government	0	0	0	0	0	0
State Government	0	0	0	0	0	0
Total Savings	0	0	0	0	0	0
COSTS:						
Regulated Community	157500	157500	157500	157500	157500	157500
Local Government	0	0	0	0	0	0
State Government	0	0	0	0	0	0
Total Costs	157500	157500	157500	157500	157500	157500
REVENUE LOSSES:						
Regulated Community	0	0	0	0	0	0
Local Government	0	0	0	0	0	0
State Government	0	0	0	0	0	0
Total Revenue Losses	0	0	0	0	0	0

(20a) Provide the past three year expenditure history for programs affected by the regulation.
This question is not applicable because there are no existing programs affected by the regulation.

Program	FY -3	FY -2	FY -1	Current FY
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

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(21) Explain how the benefits of the regulation outweigh any cost and adverse effects.

As explained in response to Question 17, the total cost of this regulation will be approximately $157,500 per year. In light of the costs associated with crane accidents, the net impact upon the Commonwealth, businesses and individuals will produce lower costs. A crane operator has a lifetime earning potential in excess of $2,000,000. A typical mobile crane or tower crane are valued well in excess of $1,000,000. Therefore, the prevention of one fatal accident every 20 years by raising crane operator standards would produce an overall savings to the Commonwealth and its economy. This would not include savings from prevention of non-fatal accidents, or accidents that only result in property damage.

There were 106 crane accident investigations conducted by the Occupational Safety and Health Administration offices in Pittsburgh, Philadelphia, Erie, Wilkes-Barre, and Harrisburg between 1972 and 2004, an average of 3 per year. At least 63 of these events resulted in a fatality, or an average of about two fatalities per year. In current dollars, based on conservative estimates of the earning power of a crane operator, the replacement cost of a damaged crane, and lost time on construction sites due to accidents, the total cost of these 63 fatalities would exceed $200,000,000. Therefore, the Board concludes that the implementation of the act through these regulations will produce substantial savings.

(22) Describe the communications with and input from the public and any advisory council/group in the development and drafting of the regulation. List the specific persons and/or groups who were involved.

The Board received written communications and comment from the Crane Institute of America and its affiliated company, Crane Institute Certification. The Board also received oral comments from Paul S. Zorich, President and CEO of RZP International; and Quinton Anderson, District Safety Manager for W. O. Grubb Crane Rental.

(23) Include a description of any alternative regulatory provisions which have been considered and rejected and a statement that the least burdensome acceptable alternative has been selected.

The Board considered numerous alternatives throughout the drafting process. At a minimum, each provision of the regulations reflects a choice between the alternative selected versus no provision at all, and frequently involved alternative language or provisions. The Preamble discusses alternatives and the rationale for the Board's ultimate decision.

(24) Are there any provisions that are more stringent than federal standards? If yes, identify the specific provisions and the compelling Pennsylvania interest that demands stronger regulations.

No.

(25) How does this regulation compare with those of other states? How will this affect Pennsylvania's ability to compete with other states?

The proposed regulation will enhance the competitiveness of Pennsylvania businesses and individuals engaged in the construction industry and crane industry, in particular. The regulation accomplishes this objective by raising competency and skill levels of crane operators. Also, the Occupational Safety and Health Administration has been engaged in the promulgation of regulations that would require crane operators in the construction industry to be certified. The Board anticipates that OSHA's rulemaking will be promulgated in 2010, with an effective date of 2014. The Board's rulemaking would bring Pennsylvania crane operators into compliance well in advance of the effective date of the OSHA rulemaking, giving Pennsylvania resident crane operators an edge over uncertified crane operators from other states in an industry in which businesses and workers are very mobile and often work for extended periods in other states.

Currently, state law requires crane operators to be certified in New Jersey, New York State, and West Virginia, as well as 12 other states including California, Hawaii, Washington, Connecticut, Maryland, Massachusetts, Minnesota, Montana, Nevada, New Mexico, North Carolina, Oregon, Rhode Island, and Utah. Maryland does not mandate certification *per se,* but does mandate that a crane operator satisfy certain testing requirements that are identical to those required by certification, or in lieu of satisfying those requirements the individual crane operator must be certified. Cities that require certification Chicago, New Orleans, New York City, Omaha, Philadelphia, and Washington, DC.

See attached spreadsheet for comparison to adjoining states.

(26) Will the regulation affect any other regulations of the promulgating agency or other state agencies? If yes, explain and provide specific citations.

No.

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DO NOT WRITE IN THIS SPACE

Copy below is hereby approved as to form and legality. Attorney General

BY: _____
(DEPUTY ATTORNEY GENERAL)

MAY 19 2010
_____
DATE OF APPROVAL

Copy below is hereby certified to be a true and correct copy of a document issued, prescribed or promulgated by:

State Board of Crane Operators
(AGENCY)

DOCUMENT/FISCAL NOTE NO. 16A-7101

DATE OF ADOPTION: _____

BY: _____
Anthony J. Lusi, Jr.

TITLE: Chairperson
(EXECUTIVE OFFICER, CHAIRMAN OR SECRETARY)

[ ] Check if applicable
Copy not approved.
Objections attached.

Copy below is approved as to form and legality.
Executive or Independent Agencies.

BY: _____
Andrew C. Clark

APR 22 2010
_____
DATE OF APPROVAL

~~(Executive~~ Deputy General Counsel
Strike inapplicable title)

[ ] Check if applicable. No Attorney General approval or objection within 30 day after submission.

PROPOSED RULEMAKING
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF STATE
BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS
STATE BOARD OF CRANE OPERATORS
49 PA. CODE, CHAPTER 6

INITIAL GENERAL RULEMAKING

NOTICE OF PROPOSED RULEMAKING
DEPARTMENT OF STATE
BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS
STATE BOARD OF CRANE OPERATORS
49 Pa. Code Ch. 6
General Rulemaking for the Administration of the Crane Operators Licensure Act

The State Board of Crane Operators (Board) proposes its initial general rulemaking, designated as Chapter 6 of Title 49 of the Pennsylvania Code to read as set forth in Annex A.

Effective date

The new general rulemaking will be effective upon publication of the final-form rulemaking in the *Pennsylvania Bulletin.*

Statutory Authority

This proposed rulemaking is authorized by sections 302 and 2102 of the Crane Operators Licensure Act (act) (63 P.S. §§ 2400.302 and 2400.2102).

Background and Need for the Regulations

Section 2102 of the act (63 P.S. § 2400.2102) requires the Board to promulgate regulations. Section 302 of the act (63 P. S. § 2400.302) directs the Board to regulate and enforce the act. Accordingly, the Board proposes a comprehensive regulatory scheme intended to implement and effect the General Assembly's intent as manifested by the act.

Legislative History

It appears that legislation to license crane operators was first introduced by Senator Erickson on October 15, 2004 as Senate Bill 1235, Printer's Number 1867, and referred to the Senate Committee on Consumer Protection and Professional Licensure. In the following session Senator Erickson re-introduced the same legislation as SB 140, PN 127 on February 1, 2005. The bill was reported from the Senate Committee for Consumer Protection and Professional Licensure and referred to the Senate Appropriations Committee where it remained for the duration of the session.

During the same legislative session, Representative Mario Civera introduced a substantially similar bill in the House of Representatives on February 16, 2005 as House Bill 617, PN 690. After a series of amendments, the bill passed the House of Representatives on February 13, 2006, but its progress terminated in the Senate Appropriations Committee after referral on May 1, 2006.

In the 2007-2008 session of the General Assembly, Senator Erickson re-introduced his bill as SB 59, PN 80. Again, the bill was reported from the Senate Consumer Protection and Professional Licensure Committee and referred to the Appropriations Committee where it remained for the

duration of the session.

Representative Civera also re-introduced his legislation as House Bill 647, PN 706. After a series of amendments in both chambers, Governor Rendell signed the bill on October 9, 2008 as Act 100 of 2008. Discussion of the legislation may be found in the House Journal of June 27, 2007, pages 1474 – 1478; Senate Journal, October 7, 2008, page 2598; Senate Journal, October 8, 2008, page 2623; and final passage in the House Journal, October 8, 2008, page 2290.

Legislative analyses prepared by staff of the House Democratic, Senate Democratic, and Senate Republican caucuses of the General Assembly were reviewed and considered by the Board in the course of formulating this proposed rulemaking. Copies of those documents are available in the offices of the Board and are available for review upon request.

Historical Background of the Act

ASME and the Origins of Crane Operation Standards

The American Society of Mechanical Engineers (ASME) is recognized as the principal authority for developing voluntary industry standards for the construction, installation, operation, inspection, testing, maintenance, and use of cranes and other lifting and material-handling related equipment. ASME's activity in developing these standards dates back to 1916, and it has continued to revise its standards for nearly a century.

The first national regulations applied to cranes were issued by the U.S. Department of Labor under the Construction Safety Act (CSA), (40 U. S. C. § 333), but only applied to construction employment pursuant to government-funded contracts. Following the adoption of the Occupational Safety and Health Act in 1970, (29 U. S. C. A. §§ 651 – 678), the Secretary of Labor transferred those regulations to the new Occupational Safety and Health Administration (OSHA) with the effect of applying the CSA safety standards to all construction employees. (53 F R 29116).

The specific OSHA regulation related to crane operations, 29 CFR § 1926.550, included a requirement at subsection (b)(2) that the operation of cranes meet the requirements prescribed in the ASME Volume B 30.5-1968, Safety Code for Crawler, Locomotive and Truck Cranes. In the 1968 standards, there were no requirements for a written examination for crane operators, but there were requirements for a physical exam and a practical test. However, OSHA did not enforce either requirement. (Source: Pennsylvania House of Representatives, House Democratic Bill Analysis, HB 647, PN 706, April 17, 2007.)

In 1982, ASME further revised its standards and took the additional step of reorganizing its standards committee and obtaining accreditation of its procedures by the American National Standards Institute (ANSI). Since at least 2000, ASME standards have included a requirement for a physical examination, written examination and an operational test demonstrating proficiency in handling a specific type of crane. (Source: Pennsylvania House of Representatives, House Democratic Bill Analysis, HB 647, PN 706, April 17, 2007.) Since 1982 it appears that national and state regulations have fallen further behind voluntary standards in the industry.

The Industry Urges Stronger National Regulation

Against this historical backdrop of the industrial and regulatory standards, the crane industry changed considerably. Within the last decade a number of industry stakeholders asked OSHA to update its cranes and derrick requirements. Experts and practitioners in the construction industry were concerned that accidents involving cranes and derricks continued to be a significant cause of fatal and other serious injuries on construction sites and believed that reform was needed to address the causes of these accidents and to reduce the frequency of personal injury, property damage, and disruption of worksite production. (OSHA, Proposed Rule, Federal Register, October 9, 2008, p. 59715.)

The Commonwealth was no exception to the national experience. Between 1972 and 2004, there were 106 serious crane accidents reported to OSHA in Pennsylvania. Of the 106 accidents, 99 resulted in at least one fatality and some cases involved multiple fatalities. (Rep. Civera, House Journal, June 27, 2007, p. 1477.)

In 1998 OSHA's Advisory Committee for Construction Safety and Health (ACCSH) established a workgroup to develop recommended changes to the requirements for cranes and derricks. The workgroup developed recommendations on some issues and submitted them to the full committee in a draft workgroup report. (OSHA–2007– 0066–0020). In December 1999, ACCSH recommended to OSHA that the agency consider using a negotiated rulemaking process. (OSHA, Proposed Rule, Federal Register, October 9, 2008, p. 59715.)

In July 2002, OSHA announced its intent to use negotiated rulemaking to revise the cranes and derricks standard and established the Cranes and Derricks Negotiated Rulemaking Advisory Committee (''C–DAC'' or ''the Committee'') (67 FR 46612, July 16, 2002). The C-DAC members were selected for their knowledge, expertise, and experience in the industry and represented a broad cross-section of the industry. The C-DAC members relied upon their knowledge and experience to identify the most important issues and craft regulations that would solve problems. Due to the extensive practical experience of the Committee the proposed improvements to the OSHA regulations were called "practical and workable." (OSHA, Proposed Rule, Federal Register, October 9, 2008, p. 59718.)

Significantly, C-DAC concluded that incorrect operation was a factor in many accidents. Operating a crane is a complex job requiring skill and knowledge. To operate a crane safely requires a thorough knowledge of the equipment and controls and a complete understanding of the factors that can affect the safe operation. The latest OSHA regulations represent an informed judgment that it is essential to have qualified operators in order to reduce accidents resulting from incorrect operation. (OSHA, Proposed Rule, Federal Register, October 9, 2008, p. 59718.)

C–DAC gave exhaustive consideration to the processes for qualifying equipment operators and determined that it was necessary for crane operators to be certified or qualified through a formal process to ensure that they possessed the degree of knowledge necessary to operate their equipment safely. (OSHA, Proposed Rule, Federal Register, October 9, 2008, p. 59718.)

Improper operation, including, for example, the failure to understand and compensate for the effects of factors such as dynamic loading, may cause employees to be struck by a load. These, and other incidents arising from operator error, will be reduced by compliance with proposed § 1926.1427, Operator qualification and certification and proposed § 1926.1430, Training. (OSHA, Proposed Rule, Federal Register, October 9, 2008, pp. 59720-59721.)

The Commonwealth Joins the National Trend

While OSHA has pursued a negotiated rulemaking, the General Assembly enacted Act 100 of 2008. With this statute, Pennsylvania becomes the sixteenth state to advance the prevailing view in the industry that higher standards must be applied to the training and qualification of crane operators, and that entry and tenure in the industry must be subject to mandatory oversight by a governmental body backed by the force of law. Experience in the industry has shown that voluntary compliance is an unsatisfactory practice. Voluntary compliance does not produce the best results for workplace safety; efficient and productive construction practices; or lower costs to employers, contractors, and property owners.

Act 100 of 2008 directed the formation of the State Board of Crane Operators. The statute represents a significant delegation of legislative power to formulate and craft not only procedures but substantive standards as well. This proposed rulemaking is the product of that delegation of legislative power. In addition to considering the intent of the General Assembly, the Board has also taken into consideration existing and anticipated changes to ASME volumes and OSHA regulations. The Board did not think that it would be wise to promulgate regulations based solely upon current or existing standards or regulations when it was aware of changes that are likely to take effect before, or soon after, the effective date of its regulations. Therefore, this proposed rulemaking, when it is appropriate, accounts for what the regulatory environment will be in June 2010, as well as the current state of the law.

General Note on References to ASME B30

The ASME B30 Standard contains provisions that apply to the construction, installation, operation, inspection, testing, maintenance, and use of cranes and other lifting and material-handling related equipment. For convenience, the Standard has been divided into separate volumes. Each volume has been written under the direction of the ASME B30 Standards Committee and has successfully completed a consensus approval process under the general auspices of the American National Standards Institute (ANSI). As of March 7, 2008, the B30 Standard comprised 26 volumes, with another three volumes in development. The volumes are designated as "ASME B 30.1, Jacks," "ASME B 30.2, Overhead and Gantry Cranes," and so forth.

By its express terms, the Crane Operators Licensure Act applies only to the types of cranes described in ASME B 30.3, Construction Tower Cranes; ASME B 30.4, Portal, Tower, and Pedestal Cranes; and ASME B 30.5, Mobile and Locomotive Cranes. However, because these volumes are routinely and regularly revised by ASME, the types of cranes currently covered under these volumes may be, and, in fact, are expected to be, covered by other volumes in the future. In particular, ASME

B 30.29, Self-Erecting Tower Cranes, is expected to be published in 2011. Self-erecting tower cranes are currently covered by B30.3, but will be assigned a new volume designation with the issuance of the new volume.

B30.3 – Construction Tower Cranes
B30.3-2004 was approved by ANSI on January 22, 2004, and issued by ASME on November 15, 2004. Revisions are in process and the next edition is due to be published in 2009. The volume will begin a 3-year publication cycle beginning after the next revision.

B30.4 - Portal, Tower and Pedestal Cranes
B30.4-2003 was approved by ANSI on February 19, 2003 and issued by ASME on June 16, 2003. It has been "reaffirmed" on February 2, 2009. The subcommittee is preparing a new revision to be in line with B30.3, and to be published in 2010. In the future, the Board anticipates that permanently-mounted Tower Cranes will be removed from Volume B30. At that point, the Board's jurisdiction over cranes covered by this volume will continue but the applicable standards will be taken from B30.3. This volume will be on a 5-year publication cycle.

B30.5 - Mobile and Locomotive Cranes
B30.5-2007 was approved by ANSI on November 20, 2007, and issued on March 7, 2008. It is published on a 3-year cycle and will be published again in 2011.

Description of the Proposed Amendments

Introduction

The Board considered carefully the national standards adopted by the act and framed its regulations in furtherance of that legislative intent. Additionally, where the act left discretion to the Board, the Board selected options with an eye toward protecting important public interests, yet balanced competing values.

Safety of the public and construction workers were deemed critically important, but the Board also gave careful consideration to the effects that its choices would have on business competitiveness, employee privacy, construction costs, openness of the market, freedom of contract, impacts on interstate commerce, and private property rights. The Board has adopted a broader, more intrusive option only when it deemed that option to be served by a greater public interest.

When prudent, the Board has preferred to allow the marketplace to act as the principal source of allocation of resources, and the proposed rulemaking expresses the Board's desire for an efficient and small governmental presence. Still, recognizing that economic forces do not have unlimited ability to provide public goods in the short term, the Board's proposed rulemaking reflects the Board's determination that the public interest should not go unserved because of a slavish devotion to a narrow economic philosophy.

GENERAL PROVISIONS

§ 6.1. Findings and purpose.

After considerable discussion, the Board adopted a section setting forth the findings and purpose underlying the adoption of these regulations. The Board believed that these findings would aid future boards, staff, courts, and the regulated community to understand and interpret the regulations in specific cases.

Of particular importance, the Board wished to express its position that the legislative intent of the act, and therefore, its mission, and the objective of its regulations, is to protect the lives and safety not only of construction workers, but also the general public. As if to highlight the risks to the broader public, during the Board's deliberations an accident occurred in the City of Philadelphia on October 12, 2009. Although the equipment in question would not have been subject to the Board's jurisdiction, the injuries sustained by members of the public, and the damage to property outside the construction site illustrates the kinds of risks that may arise from improper operation of cranes.

§ 6.3. Definitions.

The Board has incorporated several statutory definitions and broken those definitions into separate elements represented in paragraph and subparagraph form for easier analysis. Also, the Board's definitions include several acronyms for ease of reference.

Several definitions warrant specific explanation. In the definition of "certification" and throughout the remainder of the regulations, the Board has preferred to use phrases such as "applicable requirements," "applicable provisions" or "applicable volumes" of ASME B30, rather than enumerate B30.3, B30.4 and B30.5. There are two reasons for this decision. First, the Board desired brevity. Second, as discussed above in the General Note on References to ASME B30, the specific designations of volumes may change, or new volumes may be added, that apply to cranes covered by these current volumes. Therefore, for the sake of anticipating such changes, the Board determined that it would be more consistent with the legislative intent to use reference to ASME B30.

The term "certifying organization" has been adopted to encompass NCCCO and any other body approved by the board to issue certification.

The act excludes coal mining or coal mining operations from the Board's jurisdiction. Therefore, the Board deemed it appropriate to define this exclusion. The Board's definition is adapted from section 3 of the Federal Mine of the Safety and Health Act (30 U. S. C. A. § 802). The definition of the phrase "work of preparing the coal" is likewise drawn from the same federal statute.

In defining the coal mining exclusion, the Board believed that it is necessary to make it clear that construction activities remain covered, regardless of where the construction occurs. The mere fact that a crane is used to construct a building which happens to be located on the premises of a coal mine, for example, would not place the crane operation outside the jurisdiction of the board. To the contrary, the use of a crane for construction, regardless of the premises where the construction occurs, is a regulated activity under the act. The Board adapted the language used in (72 P.S. §

7201) to exclude construction from the definition of coal mining, and manufacturing. This construction exclusion was also used in the definitions of longshore operations, intermodal operations, and manufacturing applications.

The Board inserted a definition of "conviction" for the purpose of defining the term as used in § 6.11(d) (related to general requirements), and to make it clear that a disposition other than a conviction is not a disqualifying or disabling condition. This definition of conviction does not limit the grounds on which disciplinary action may be taken under § 6.47(b)(5) (related to standards of conduct, disciplinary action, suspension and revocation), which permits disciplinary action not only for convictions of a felony or a crime of moral turpitude, but also dispositions of probation without verdict, Accelerated Rehabilitative Disposition, disposition in lieu of trial, and so forth.

The language used in this definition was extracted from several authorities. *Commonwealth v. Hughes,* 581 Pa. 274, 865 A.2d 761 (2004) and *Commonwealth v. Kimmel,* 523 Pa. 107, 111, 565 A.2d 426, 428 (1989) are the source of the initial clause defining conviction as an ascertainment of guilt and judgment thereon. Section 91.02 of the Criminal History Record Information Act (18 Pa.C.S.A. § 9102), defines "disposition." "Guilty but mentally ill" is defined at section 314 of the Crimes Code (18 Pa. C. S. A. § 314). Adjudications of delinquency are not to be considered convictions as provided by The Juvenile Act at 42 Pa.C.S.A. § 6354 (a).

The Board broke the statutory definition of crane into its constituent elements for ease of reference and analysis. The reference to "applicable ASME B30 volume" in the description of a "tower crane" was chosen for reasons stated above.

In defining the types of equipment and machinery that are included in the definition of the word "crane," the Board followed the statutory definition, and the list of particular words or phrases has been enumerated in the regulations. However, the use of the word "derrick" requires further explanation.

For the general public, the colloquial use of the word "derrick" is typically associated with oil rigs. Plainly, the statute was not intended to cover the operation of oil rigs. However, ASME has promulgated a standard for "derricks" in ASME Volume B30.6, as well as a standard for "floating derricks" in ASME Volume B30.8. The usage of the term "derrick" in the context of those two ASME standards is also outside of the act's statutory definition of "crane."

"Derrick," when used in the specific, technical usage of Volume B30.6 applies to guy, stiffleg, basket, breast, gin pole, Chicago boom, shearleg, and A-frame derricks. *See Introductory Description of ASME Volume B30.6.* These derricks, powered by hoists through systems of wire rope reeving, are used for lifting, lowering, and horizontal movement of freely suspended unguided loads. Derricks are usually stationary mounted and may be temporarily or permanently installed. Derricks covered by Volume B30.6 are distinguished from cranes covered by the act in that this class of equipment does not have a boom moving laterally by the rotation of the machine on a carrier or base.

The professional members of the Board, based upon their involvement in the passage of the

act, hold the position that the term "derrick" was included in the statute principally because the term "derrick" is used in the common title of all of the ASME B30 safety standards, including ASME Volumes B30.3, B30.4, and B30.5. The legislative intent was not to include the types of equipment and machinery covered under Volumes B30.6 or B30.8. Rather, in the context of the act, "derrick" only has a generic, common dictionary definition of the word, meaning "...a hoisting apparatus employing a tackle rigged at the end of a beam" (*See Merriam Webster* Dictionary) and which meets all of the other statutory criteria of a crane. In this general sense of the word, all cranes include a "hoisting apparatus with a tackle rigged at the end of a beam." Therefore, the Board includes "derrick" to make it clear that regardless of the label that one might apply to a particular piece of equipment or machinery, the controlling issue is what components the machine has, what its function is, and how it operates.

The Board thought it advisable to include a definition for "engage in the operation of a crane" or "operate a crane" because, in fact, the operation of a crane involves multiple individuals. Persons who assemble the crane, who rig the load, who signal or who inspect, are integral members of a coordinated team of persons who are required to safely operate a crane. However, it is only the person who actually controls the activation and movement of a crane who is "operating a crane." Within this concept, the Board contemplates that operation of a crane includes an individual who is seated in a cab and who manipulates levers, wheels and other control mechanisms. However, in light of new and future technology, operation of a crane also includes an individual who operates a crane by use of a wireless or other remote device.

The term "lift director" is defined according to the definition used in ASME Volume B30.5. This term is used in the regulations to define the reporting requirements for a crane operator under § 6.43(b) (related to impaired operation of a crane and reportable conditions, incidents or events).

The statute excludes "longshore operations," "intermodal operations" and "manufacturing applications" from the definition of crane. The board deemed it appropriate to define these terms. The definitions of "longshore operations" and "intermodal operations" are adapted from 29 C. F. R. § 1917.2 (related to definitions). Counsel for the Board contacted the federal authorities and confirmed that the term "marine terminal" includes not only operations at the Port of Philadelphia, which handles ocean-going vessels, but also the Port of Erie, which handles shipments from lake freighters, and the Port of Pittsburgh, which handles river barges. A terminal on any body of navigable water, whether freshwater or seawater, constitutes a "marine terminal" as defined under federal law. See 29 C.F.R. § 1917.2.

The definition of "manufacturing application" borrows heavily from the definition in section 2 of the Tax Reform Code of 1971, (72 P. S. § 7201), cited above.

The definition of "trainee" is taken from the act, but amplified by reference to proposed § 6.15 (related to qualifications and supervision of trainees). The Board notes that the statutory definition includes only those individuals who have neither certification nor a license. The Board entertained discussions about the proper status of persons who have obtained certification, but who are awaiting a license. In addition, the Board recognizes the remote possibility that a person may hold a current valid certification, but is disqualified from holding a license. The Board addresses the

status of such individuals in § 6.13(e) (related to certification), and discusses that provision in greater detail below.

§ 6.5 Applicability of general rules.

This provision makes clear that individuals may avail themselves of any of the applicable remedies and procedures available under the General Rules of Administrative Practice and Procedure.

§ 6.7 Fees.

Some of these fees are commonplace among licensing boards and require little explanation. The amount of the initial licensing application fee, biennial renewal fee, and reactivation fee, were determined based upon estimated costs of administering those licensing functions of the board and an expected licensed population of approximately 2,750 licensees. The estimate of licensees was based upon the number of individuals residing in Pennsylvania who hold a current certification issued by NCCCO, plus an estimate of the additional individuals who would be licensed without certification, or hold certification through another certifying organization.

The fees for certified copies of records and addition of specialty were based upon an estimate of the pro rata share of staff expenditures required to perform those functions.

The fee for addition of specialty applies to those persons who are licensed with certification who acquire a certification for an additional type of crane before the biennial licensing period expires. The fee represents the cost of staff time in amending the person's licensure record to reflect their authority to operate an additional type of crane.

The fee for application for certifying organization represents the cost of obtaining a professional review of the application by a qualified outside evaluator who will determine whether the application satisfies the criteria for approval as a certifying organization.

The trainee registration fee applies to those persons who register as trainees under § 6.15 (relating to qualifications and supervision of trainees) and represents the value of staff expenditures needed to process that registration form.

LICENSURE

§ 6.11. General requirements.

As a general rule, applicants for licensure will possess certification. The Board notes that certification requires a passing score in a written examination and a practical examination, as well as physician's report confirming that the individual is physically capable of safely operating a crane. Because those requirements are already specified as prerequisites to certification, the Board did not repeat those requirements in these regulations. However, the Board does require the applicant for

licensure to aver under penalties for perjury that they have been examined by a physician and determined to be physically capable of operating a crane.

There is one requirement for persons obtaining a license under section 502 of the act (63 P.S. § 2400.502) that is not specified in this section of the regulations that is specifically required under ASME B30 volumes and OSHA's negotiated rulemaking. Under ASME B30 and OSHA's negotiated rulemaking, crane operators must submit to a physical exam performed by a physician as a prerequisite to obtaining certification. Furthermore, ASME B30 volumes and OSHA's negotiated rulemaking require the physical exam to be repeated every 3 years. The Board considered a requirement that the applicant submit a copy of the physician's report with the license application. However, that requirement was deemed unnecessary because widespread practice in the industry is that crane operators are frequently reviewed by employers for a current physical exam. Therefore, a simple averment that a physical examination has occurred was deemed to be sufficient.

In addition to the statutory qualifications for licensure, the board also concluded that it would be prudent to enunciate a standard for "progress in personal rehabilitation." The Board believed that it would be prudent because it would provide a fixed point of reference on which to judge each applicant, and thus decrease the likelihood of arbitrary or inconsistent decisions. Also, based upon the experience gained from other licensing boards, an applicant can be confused or uncertain as to what type of information that he or she should offer to support the application for licensure, as well as the negative information that may be brought up in opposition to licensure.

"Totality of the circumstances" is a familiar term of art in the common law. While it is impossible to create an exhaustive list of the possible circumstances that may be relevant to evaluating any particular case, the Board's proposal does provide a substantial coverage of the most common factors that will bear upon a typical case.

The reference to refraining from "tortious" conduct deserves further explanation. The Board considered that an individual may be involved in conduct which may not rise to the level of criminality, but may evidence instability, lack of judgment or risk-taking behavior. The Board does not purport to offer a comprehensive list of the types of tortious acts that may be relevant to the Board's consideration. However, a person who has a driving record that includes reckless driving, or who has been found negligent in one or more automobile accidents, or who has a history of domestic abuse, may give rise to concern about the individual's judgment and lack of inhibition against dangerous or risky behavior, and it would also bear upon the degree of an individual's "progress in personal rehabilitation" from felonious conduct.

Another factor sometimes overlooked by applicants is a history of successful therapy. It is likely that a person with a felony conviction for a violation under The Controlled Substance, Drug, Device and Cosmetic Act (35 P.S. §§ 780 – 101 - 780 – 144) has been engaged in abuse of one or more substances. It is well-established that a person with a history of substance abuse or dependency has a health problem. The mere fact that the individual has been able to refrain from abusing the substance does not demonstrate that they have entered recovery. The so-called "dry drunk syndrome" describes this phenomenon. In light of that possibility, the Board concluded that an individual's history of therapy bears upon whether that individual would pose a substantial risk of

harm to workers and the public.

§ 6.13. Certification.

The act provides that a crane operator's license obtained by certification is only valid in conjunction with a current certification in the specialty for which the crane operator has been certified. Based upon that language, the Board has determined that every crane operator will need to possess two documents as evidence of their authority to operate a crane. First, the crane operator must possess the license that is issued by the Board. Second, the crane operator must also possess the certification. NCCCO issues a wallet size card with a photograph of the crane operator. Photo identification is a critical element for verification of the crane operator's identity. Certification through NCCCO offers that means of verification.

NCCCO provides its examinees with copies of written and practical examination scores. A photocopy of those scores will be attached to an application for licensure. In addition, the Board administrative staff is able to submit a list of applicants and obtain independent affirmation from NCCCO that the applicants do, or do not, possess current valid certification from NCCCO.

Because certification is limited to only certain types of cranes (see discussion of ASME B 30 volumes above) the license, too, only constitutes authorization to operate the type of crane for which the applicant possesses certification. The Board plans to insert a code or other information on the license and wallet card to indicate which types of cranes the licensee is authorized to operate.

The Board has included a rule that a person who possesses an acceptable certification cannot bypass the licensure with certification requirements and seek licensure without certification. There are three principal reasons for this prohibition.

First, the statute demonstrates that licensure by certification is the preferred means of demonstrating an individual's qualification to operate a crane. Section 506 of the act (63 P.S. § 2400.506) pertaining to license without certification, was added in the late stages of House Bill 647. The original intent of the bill was for certification to be the exclusive pathway to licensure. This suggests that licensure without certification was added only as a secondary option for persons who were unable to satisfy the written examination requirements of certification, in order to avoid a harsh result for a few individuals.

Second, an individual must renew certification on a 5-year cycle, which overlaps the biennial period for licensure. Therefore, certification is evidence of continuing proficiency and understanding of the latest standards and practices. That the legislation requires certified individuals to continue to be recertified as crane operators as a prerequisite to licensure renewal demonstrates the legislative intent to require proof of continued proficiency and skill.

Third, as discussed above, the Board has taken account of the OSHA standards that are the subject of the negotiated rulemaking. Those standards would, if enacted in their current form, disqualify persons without certification to operate a crane. In other words, the licenses issued under section 506 of the act may ultimately prove to be invalid under OSHA regulations that are in the

course of being promulgated.

This third point warrants further explanation. Under OSHA's proposed § 1926.1427 (relating to operator qualification and certification) an individual would need to be certified or qualified in order to operate a crane. This requirement would be fully effective in 4 years from the effective date of the OSHA rulemaking, which would be approximately 2014. Under the provisions of proposed §1926.1427(j) any acceptable qualification and certification programs will need to include both a written and a practical examination. This qualification or certification requirement could be satisfied by one of four options.

First, an accredited crane operator testing organization could certify the individual. Act 100 of 2008 satisfies this requirement by reference to NCCCO as a statutorily recognized body. Second, OSHA would accept qualification through an audited employer program. However, this option also requires a written and practical examination and an independent audit to verify the authenticity and reliability of the employer's testing program. Furthermore, qualification under this provision is not portable, meaning that it is valid only with that particular employer. Act 100 of 2008 would not recognize this second option as a basis for granting a license.

Third, OSHA would accept qualification by the U. S. military. However, military qualification, like the second option, is not portable. Fourth, OSHA would accept licensing by a qualified governmental entity. To qualify as a governmental testing agency the Board would need to administer its own written and practical examination. However, the Board has neither the statutory authority nor the resources to administer its own written or practical examinations for individuals who are licensed under section 506. Furthermore, if the Board were to engage a contractor to administer such written and practical examinations, it would, in effect, require certification for licensees under section 506, which the provisions of section 506(b) prohibits.

Accordingly, the Board has concluded that unless its standards for licensure without certification under section 506 are rigorous and satisfy the requirements of OSHA regulations, the license without certification will become meaningless in approximately 3 to 4 years from the date the window closes for this licensure option. Therefore, the Board concludes that the only rational policy is to prohibit individuals who hold certification from applying for licensure without certification.

The Board also noted that the statutory definition of trainee as an individual who holds neither certification nor a license, would not cover an individual who has recently obtained certification, but who awaits the issuance of a license. The Board determined that it should address the status of this group of individuals in § 6.13(e) for two reasons.

First, the Board contemplated that there will be a lag time between the date on which an individual obtains certification, but either has not filed an application for licensure with the Board, or who is awaiting that application to be processed and the license to be issued. The Board deemed it prudent to clarify that such an individual would be authorized to continue to operate a crane under supervision as a trainee, even though that individual does not meet the technical statutory definition of a trainee.

Second, the Board anticipates that there could be rare instances in which a person has obtained certification, but who may not qualify for a license, especially because of character issues, such as a past felony conviction for a non-drug related offense involving fraud or violence. The Board deemed it prudent to preclude such an individual from operating a crane under the fiction of operating as a trainee for an indefinite period of time.

For these two reasons the Board concluded that a person who has obtained certification, but who has not obtained a license, may operate a crane for a period of 90 days following the date of certification, with the option of obtaining an additional 90 day period with permission from the board, in order to allow time for an application for licensure to be filed, processed, and, where a denial occurs, to appeal that denial.

§ 6.15. Qualifications and supervision of trainees.

The qualification and supervision of trainees is addressed in section 501(c) of the act. 63 P. S. § 2400.501(c). The Board evaluated this section in light of the knowledge that an individual who is a trainee on one type of crane may already be certified and licensed to operate another type of crane. In other words, not every trainee is a complete novice to the field of crane operation. Nonetheless, with respect to a type of crane for which the individual is not certified, even a long-tenured crane operator remains a trainee for purposes of operating the crane for which he or she is not certified. Therefore, § 6.15 should be read together with §§ 6.11, 6.13 and 6.17 (relating to general requirements; certification; and specialties).

With respect to this principle, the Board notes that any trainee and supervisor will be required to comply with the requirements of two other standards, the applicable ASME volume for the type of crane being operated, and OSHA regulations. The applicability of ASME standards is noted in § 6.15(b)(2). A corollary requirement for the supervising crane operator to comply with applicable ASME and OSHA rules has been set forth in subsection (d).

One point that is not specifically addressed in ASME or OSHA is whether an individual may supervise simultaneously two or more trainees. "Immediate supervision" was defined in § 6.3 (relating to definitions) as "circumstances in which the crane operator is in the immediate area of the trainee, within visual sighting distance and able to effectively communicate with the trainee." "Immediate supervision" is further explained in subsection (e) as requiring a one-to-one ratio between supervising crane operator and trainee, and adds that the supervisor may not perform other functions or have other responsibilities while supervising a trainee.

The Board contemplated certain types of cranes that actually require more than one individual to manipulate the controls. In that case, an employer who assigns a trainee to operate that crane has two options. First, have only one trainee, supervised by a single crane operator, and with licensed crane operators in the other positions for that crane. Second, if more than one trainee is involved in the operation of such a crane, then each trainee must have an individual supervising one trainee and only one trainee.

The Board concluded that this one-to-one ratio is not only justified, but necessary, for the safe

operation of the crane and the proper supervision and instruction of the trainee. Construction sites are characterized by the presence of many large, loud, diesel engines along with hydraulic and pneumatic tools and machinery. At any given moment, traffic intersects, multiple operations occur, and as a result, there are many causes of distraction and unexpected movement.

Furthermore, because of the small size of a crane cab, the supervising crane operator may not be within arm's reach of the trainee. In many circumstances, the supervising crane operator and trainee may be separated by a considerable distance measured in feet or yards. So long as the supervising crane operator and trainee can communicate effectively, and taking into account all other relevant circumstances, that type of physical distance may be appropriate and safe. To permit an individual to supervise multiple trainees, though, creates an unreasonable degree of risk.

In light of the complexity of human activity that occurs on a construction site, in the Board's judgment, there is no room for error as a result of a supervising crane operator trying to supervise multiple trainees, or to perform other functions at the same time. The Board concluded that it is of vital importance that a supervising crane operator devote his or her undivided attention to observing and instructing the trainee. Because of the momentum of moving loads and similar factors, dangerous conditions can rapidly deteriorate and result in catastrophic accidents if immediate corrective measures are not taken. Because a response to a dangerous condition may be necessary in the span of seconds, or a split second, a supervising crane operator who is distracted only for a moment by the performance of another duty poses an unacceptable degree of risk to proper supervision of a trainee. Therefore, the Board concluded that the one-to-one ratio is a necessary requirement.

Finally, the Board also determined that a crane operator must evaluate his or her own ability and competence to supervise a trainee before accepting that responsibility. Therefore, subsection (f) provides that a crane operator may not accept such an assignment if supervision of a trainee is beyond the competence and experience of the crane operator, considering the type of crane to be operated, the nature of the task or operation to be performed, and the skill and knowledge of the licensed crane operator. The issuance of a license to operate a crane does not grant the individual an unqualified permission to begin supervising trainees. Subsection (f) places a responsibility upon the licensee to assess the licensee's own ability as a supervising crane operator and to refuse such an assignment when it would be unsafe to supervise.

§ 6.17. Specialties.

The act requires the Board to issue specialty licenses for the following crane types: tower cranes, lattice boom crawler cranes, lattice boom truck cranes, telescopic boom cranes with a rotating control station, and telescopic boom cranes with a fixed control station.

The Board concluded that the most efficient means of satisfying this requirement was to add a designation or code to each license to specify the type of crane or cranes that a licensee would be authorized to operate. At this time, there are no other types of cranes for which a specialty license is deemed to be appropriate.

§ 6.19. Licensure of a crane operator from another jurisdiction.

To facilitate interstate commerce and increase employment and business opportunities for Pennsylvania resident crane operators, the Board has provided for licensure for persons licensed by other jurisdictions in a manner consistent with the practice of other licensing boards.

LICENSURE WITHOUT CERTIFICATION

§ 6.21. Licensure without certification generally.

This section, together with §§ 6.23 and 6.25, (relating to licensure without certification by practical examination; and licensure without certification by experience), implement the provisions of section 506 of the act. As reflected above in the discussion of § 6.13 (relating to certification), the Board was obliged to consider the implementation of section 506 in light of the anticipated provisions of OSHA regulations and the requirements of the proposed § 1926.1427.

There is a limited time frame for submitting applications for licensure without certification. As of the date of the initial discussion and drafting of this proposed rulemaking, House Bill 1551 had passed the House of Representatives and had been referred to the Senate Consumer Protection and Professional Licensure Committee. HB 1551 was introduced at the recommendation of the Bureau of Professional and Occupational Affairs in order to correct a technical defect in HB 647 regarding when this limited time frame would commence and end.

The Board drafted §§ 6.21, 6.23 and 6.25 on the assumption that HB 1551 would be enacted into law before the effective date of the Board's regulations. Under the provisions of HB 1551 the window for applications under section 506 would open on the effective date of the Board's regulations, which was estimated to be June 8, 2010. In any event, because the act requires a license beginning on October 9, 2010, regulations needed to be in place before that date. Under this same amendment proposed in HB 1551, the window would close on December 9, 2011, thus allowing individuals pursuing licensure without certification a period of 14 to 18 months in order to obtain that license. Subsection (a) reflects the date of closure of that window, based upon the expected passage of House Bill 1551.

In addition to the requirements under the act, subsection (b)(5) is a corollary statement of the principle expressed in § 6.13(d) that an applicant who possesses a valid certification cannot apply for a license without certification.

§ 6.23. Licensure without certification by practical examination.

One point that bears highlighting is that section 506(a)(2) of the act specifically requires a passing score on a practical examination administered by NCCCO. The statute does not authorize or permit the Board to accept the results of examinations administered by another testing organization, even if that other organization has been approved by the Board as a certifying organization.

Under § 6.23, the applicant will be required to produce three pieces of documentation, in

addition to the required personal identifying information essential to licensure. First, the applicant must submit scores for the NCCCO practical examination demonstrating a passing score. As with crane operators certified by the NCCCO, the Board administrative staff can independently confirm that the applicant has a passing score.

Second, the applicant must make an averment subject to the penalties for perjury that the applicant has passed a physical examination meeting the requirements of ASME B 30.5.

The Board considered whether to use the language of "applicable ASME B30 volume" that is repeated elsewhere in the proposed rulemaking. That language would have meant that the applicant would submit to the relevant physical examination based upon the crane type for which he or she applied. However, in this particular instance, the Board chose to specify B30.5 for two important reasons.

First, B30.5-3.1.2 is the only provision that expressly requires a substance abuse test. Volumes B30.3 and B30.4 do not include such a requirement for their physical exams. In this regard, the Board considered safety of workers and public to be better served by requiring a substance abuse test, as required by B30.5, of all licensed crane operators.

Second, from the standpoint of ease of administration, the Board concluded that it would be more efficient to specify a single physical exam for all licensees. Adding to the strength of this reason is that the Board expects ASME to adopt the same substance abuse requirement in future revisions of volumes B30.3 and B30.4.

Third, the physical examination requirements of B30.5 include language that is more protective of individual crane operators who have a disability that is capable of accommodation without jeopardizing safety.

The third item of documentation that an applicant must produce with the application is a copy of any results from all assessments administered in the 2-year period prior to the date of application. The purpose of this requirement is to inform the board of any assessments that resulted in a failing grade or score. The rationale of the board is that it should be advised of any indicators that a particular crane operator may not be qualified.

The Board is concerned about the possibility of testing shopping. That is, an unqualified individual who fails to obtain certification, and who may have failed one or more attempts to become certified, may shop around for the easiest path to licensure. Because there are no residency restrictions in the act, there is the possibility that unqualified, out-of-state residents may attempt to use Section 506 as a pathway to entry into the industry. This is clearly not the legislative intent behind the Act. (See, House Journal, June 27, 2007, pp. 1475 – 1476.) In light of the legislative intent to assure competence, the Board concludes that a failing grade on an assessment, whether on the written or practical portion of the examination, is a fair indicator of a lack of competence.

The Board considered two basic fact patterns that may give rise to adverse consequences to the applicant. The first scenario occurs where the applicant has obtained a passing score on the

NCCCO practical exam, but is denied certification due to a failing score on the written examination. The same applicant then takes the practical exam for the same type of crane with another organization, with an audited employer assessment program, or an assessment program administered by another jurisdiction, but obtains a failing score on its practical examination.

In this case, the Board believes that the subsequent failing grade on the second practical exam would negate the passing grade on the NCCCO practical examination and may constitute grounds for denial of a license under this section. The failing grade indicates a degradation of the individual's knowledge and skill to an unacceptably unsafe level. Therefore, a license may be denied.

In the second scenario, the applicant obtains a passing score on the NCCCO practical examination for mobile cranes. The same applicant had, prior to the passing score on the NCCCO practical exam and within the 2 years prior to the date of application, failed the written examination for either an audited employer assessment program or an assessment program administered in another state for a mobile crane. Under these circumstances, the Board believes that it could grant a license for mobile cranes, but with restrictions. An appropriate restriction may be, for example, limiting the licensee to working for the current employer, or the employer with whom the applicant failed the audited employer assessment.

Although the Board would not be able to deny a license to an applicant under this scenario, the Board believes that the failing scores would be appropriate grounds for a license restriction appropriate to the circumstances. For example, if the individual had failed an audited employer assessment program, the license may appropriately restrict the licensee to work for that specific employer, and none other. If the applicant had failed an assessment program administered by another state, then the Board may appropriately restrict the licensee to Pennsylvania, and deny the licensee the right to use the Pennsylvania license to apply for a reciprocal license issued by another jurisdiction.

§ 6.25. Licensure without certification by experience.

As discussed above, Act 100 was amended in both chambers of the General Assembly. The Civera Amendment was adopted by the House of Representatives and added a new section 506, relating to license without certification. The Civera Amendment created one pathway to licensure without certification.

The Waugh Amendment was offered in the Senate and amended section 506. The effect of the Waugh Amendment was to create two distinct pathways to licensure without certification. The Board grappled with this distinction and the implications both for public safety, as well as consistency with OSHA's negotiated rulemaking.

Licensure without certification by experience is a pathway to licensure as provided in section 506(a)(3). That paragraph states that an individual is eligible for licensure without certification if they meet the requirements of section 502, except for certification, plus "... document five or more years' experience immediately preceding the date of application for licensure to operate a crane as defined in this act." Section 506(a)(3) further provides that "Licenses granted under this provision

shall be issued only for the operation of cranes where documentation, acceptable to the board, has been provided. Licenses issued pursuant to this section shall only authorize the operation of a crane within the experience documented and accepted by the board."

From the Waugh Amendment arises an issue not contemplated, or at least not discussed, when the Civera Amendment was offered in the House of Representatives. Under the Civera Amendment, as well as under the current pathway for licensure without certification by practical examination in § 6.23, there is a clear, objective standard for determining which type of crane or cranes an individual is qualified to operate. Passing a practical examination that assesses competence and skill in operating a particular type of crane demonstrates to the Board which type of specialty license may be issued to an applicant. For example, if an applicant has passed the tower crane practical examination, then the Board knows that the applicant is eligible for a license to operate a tower crane.

However, in the absence of a passing score for a specific examination that demonstrates the type of crane for which an applicant is qualified, the Board must possess documentation that proves an applicant's competence and skill with a particular type of crane. As a result, the extensive debate that occurred in the House of Representatives between Representatives Fairchild, Sturla, and Civera, loses some of its value in amplifying legislative intent as to how the Board is to evaluate experience under section 506.

Under the Civera Amendment, it appeared that the legislative intent was for the Board to credit *all* experience obtained in operating *all* types of cranes, so long as a significant amount of the 5 years of experience related to the specific type of crane for which the applicant sought licensure. The rationale behind this thinking is easy to understand, namely, that in lieu of passing a written examination for a specific type of crane, the Board could accept overall experience as a substitute.

By detaching the element of experience from the practical examination, then, the Waugh Amendment requires the Board to substitute experience not only for the assessment of a written examination, but also the assessment gained from a practical examination. Thus, the second and third sentences of section 506(a)(3), ("Licenses granted under this provision shall be issued *only for the operation of cranes where documentation, acceptable to the board, has been provided.* Licenses issued pursuant to this section shall only authorize the operation of a crane *within the experience documented and accepted by the board.*") acquire added significance under the Waugh Amendment and the final version of Act 100, as adopted.

Based upon this analysis, the Board determined that it would need to have a procedure of documentation that would allow its staff to analyze each individual applicant's qualifications to operate a specific type of crane. In designing this procedure the Board turned to the established, familiar, and time-tested practices employed by other licensing boards within the Bureau of Professional and Occupational Affairs. The State Board of Accountancy, the State Board of Certified Real Estate Appraisers, and the State Board of Professional Engineers, Land Surveyors and Geologists require documentation of experience, to cite three examples.

However, all of these three boards, as well as nearly all of the other licensing boards that

require experience documentation, have one key requirement that a new board like the State Board of Crane Operators cannot mandate. All boards require a currently licensed individual who has supervised the applicant to attest to the accuracy of the documented experience. It is unusual for a board to allow the applicant to self-verify his or her own experience without corroborating verification by a supervising licensee.

The reason for this requirement is clear. It is fundamentally unreliable to take the applicant's uncorroborated claims. The Board was aware of evidence to suggest that self-verification is, in fact, unreliable. The only other state known to allow for licensure without certification is West Virginia. Based upon the reports from that state, the Board determined that it could not prudently rely upon an applicant's uncorroborated self-verification. Since there are no licensed crane operators in Pennsylvania, the Board cannot require an applicant to have documented experience verified by a supervisor who is a current licensee.

In addition, the Board recognized that some of the individuals that would apply for licensure by experience would be self-employed and proprietors of their own companies. Therefore, it would not even be possible to allow the applicant to obtain verification from a third-party employer because that would, in effect, also constitute uncorroborated self-verification.

Another factor that the Board considered is the effect of OSHA's negotiated rulemaking. When the negotiated rulemaking is expected to take effect in 2014, it may have the effect of excluding this class of licensees from working in the construction industry. Certification would be required by OSHA to operate a crane in a construction setting 4 years after final promulgation of the negotiated rulemaking. At that point, the "grandfathered" licensees would continue to be eligible to operate a crane under the Board's jurisdiction in non-construction settings, that may include, for example, quarrying or general industry.

Accordingly, the Board determined that it is in the interests of licensees as well as public safety to establish a procedure under section 506(a)(3) that is rigorous and reliable. Such a standard may be a challenge for applicants to meet, but a higher standard would allow the Board and the individuals granted licenses under this section to argue credibly to federal authorities that licenses issued under this provision are substantially equivalent in quality to a license issued with certification, and thus have a credible basis on which to request relief from OSHA. By no means can the outcome of such an appeal be assured, but the Board concluded that it was a more responsible position to assume, and one that was more consistent with legislative intent, than the alternative of adopting a lax standard that may, in the space of a few years, be rendered worthless by national regulations.

Based upon these considerations, the Board looked to the procedure used by the State Board of Professional Engineers, Land Surveyors and Geologists to provide a starting point or template for its regulations. Of the 29 licensing boards in BPOA, the Engineering Board has the most in common with operation of cranes. Looking to that precedent, the Board developed the criteria of required documentation.

The Board found that several factors were critical to properly evaluate an individual's

experience and qualifications to operate a crane. Those criteria include verifiability of information, physical fitness and ability to safely operate a crane, sufficiency of the quantity of experience, and crane specialty experience.

The principle of verifiability

The first principle that the Board seeks to address through its application process is that the information that is supplied by the applicant can be verified as true and correct. To accomplish that objective, the Board discussed the possibility of requiring applicants to produce some type of business records prepared by independent third parties that would supply information regarding crane specialties and amount of experience. The Board believed that any documents prepared by third parties at the time that the applicant actually performed the work would provide an inherently high degree of reliability since none of the information could have been created in contemplation of a future application for licensure.

Based upon the combined experience of the four professional members, the Board determined that, unfortunately, there are no business records in the industry routinely created by an independent third party that would supply all of the information that is required to assess an individual's competence to operate a crane. In fact, there are few business records that would be prepared contemporaneously at the time the work was performed that would identify the crane type and the number of hours worked on a particular type of crane.

In light of these limitations, it became apparent to the Board that it will be necessary for the professional board members to scrutinize each application to determine whether the applicant's documented experience is credible.

The Board identified several types of business records that would make the process more efficient. IRS Form W-2 as required in § 6.25(b)(1) will provide reliable documented evidence of the applicant's employers over a 5-year period. Alternatively, if the crane operator were self-employed during all or part of that 5-year period, IRS Form 1099 would identify the prime contractors who retained the applicant's services. These forms would also tend to supply corroborating evidence of the amount of work that the applicant performed over that same period.

The Board noted, though, that these documents by themselves would not supply any evidence whatsoever as to whether the applicant actually worked as a crane operator rather than in some other capacity. The Board took note of the fact that many individuals who work as a crane operator are also qualified to operate other heavy equipment. Therefore, these documents would only identify source of employment, and not actual qualifying experience.

For those applicants who worked as independent contractors for all or part of the previous 5-year period, certificates of insurance for any policy of comprehensive general liability insurance also supply a central source of information. An insurer would be able to supply a comprehensive, independent source of information regarding the type of work that the applicant performed, where the work was performed, and whether any claims or injuries arose from the applicant's work.

The principle of physical fitness and ability to safely operate a crane

The Board recognized that both OSHA's negotiated rulemaking and ASME's standards require a physical examination performed by a physician to confirm the individual's physical ability to operate a crane. Based upon those two standards, the Board determined that it is necessary for all licensees to demonstrate their physical fitness. Therefore, pursuant to § 6.25(e), the Board requires the applicant to aver subject to the penalties for perjury that the applicant has passed a physical examination meeting the requirements of ASME B 30.5.

The principle of sufficiency of quantity of experience

The act requires 5 years of experience to be documented in a manner acceptable to the Board. However, the Act is not more specific. As a general rule, there are 2,000 hours in a standard work year, and 10,000 work hours in a 5-year period. On one extreme, the 5 years' experience requirement could be interpreted to mean that an individual could document that they operated a crane for one day 5 years before the date of application, and one more day on the date before the application. The Board viewed that interpretation as unreasonable and unsafe.

At the other extreme, the act could be interpreted to mean that an individual would need to document 10,000 hours of crane operation during the 5-year period. This, too, seemed unreasonable to the Board, especially in light of the experience of the professional members that many people in the profession are qualified to operate other apparatus, as well as the fact that construction is a somewhat seasonal work activity.

Looking to West Virginia, the Board noted that uncertified operators were required to document 2,000 hours in a 4-year period. Viewing that standard as a happy medium between the two extremes, the Board has opted for a requirement of 5,000 hours of experience documented over a 5-year period. See §6.25(b)(2).

In order to permit inspectors to verify that information, the Board requires information about the particular projects where the crane operation was performed. The required information includes the name and business address of the general contractor or other person who employed or engaged the services of the applicant, whether the applicant worked as an employee or independent contractor on the project, the location of the project, and the number of hours worked on the project. §6.25(c)(1), (2), (3) and (6).

The Board also requires an applicant under § 6.25(c)(5) to identify any incidents in which an injury occured in the operation of the crane resulting in disability to an individual in excess of the working shift or turn in which the injury was received. The Board would not give credit for any hours on a project in which such an incident occurs as a result of the applicant's failure to exercise reasonable care in the operation of the crane.

Under § 6.25(f) the Board also requires reporting of past assessment results. The Board will not give credit for experience to an individual who has submitted to an assessment for crane operation within the 2-year period immediately preceding the date of application and has failed that

assessment. The Board holds the position that it cannot reasonably accept experience as evidence of competence if the individual has objective testing results demonstrating a lack of competence.

The principle of documented crane specialty experience

Section 506(a)(3) states that a license based upon experience shall only be issued to operate the specialty crane for which the individual has supplied acceptable documentation. Therefore, for each project, the applicant must identify the type of crane that he or she operated. The Board cannot give credit for time operating a crane that is not covered by the act.

The Board will not require 5,000 hours for each type of specialty crane, that is, tower, lattice boom crawler, lattice boom truck, telescopic boom fixed control and telescopic boom rotating control cranes. However, the Board will require at least 5,000 hours overall, and 1,000 hours of experience in the specialty, free of incidents resulting in injury as described in § 6.25(c)(2).

Because the licensee does not possess certification, the Board determined that it would be necessary to provide the individual with a declaration identifying the specialty type of crane that the licensee is qualified to operate. The provision of this additional declaration will result in the charge of an additional fee in the amount specified in § 6.3 relating to fees.

An individual licensed under this section must possess both the license and the declaration to hold himself or herself out as a crane operator. §6.25(h).

RENEWAL OF LICENSE

§ 6.31. Duration of license.

In accordance with section 504 of the act (63 P. S. § 2400.504), licenses will be issued for a period not to exceed 2 years. To clarify the statutory language, the Board's regulation states that the license is only valid until the end of the biennial licensure period. In other words, if a person obtains a license midway through the biennial license period, the license will not last for 2 years, but only for the balance of the licensure period. This is consistent with other licensing bodies.

In developing these regulations, the Board has been advised that the anniversary date for renewal may be adjusted by several months for administrative reasons within the Bureau. Therefore, if inaugural licenses are issued in October 2010, licensees should be aware that the renewal period may not occur in October 2012. Appropriate measures will be taken to communicate with licensees regarding the renewal date.

§ 6.33. Renewal of license.

The procedures for renewal of licenses will vary depending on the initial pathway to licensure. For persons who hold a license through certification, those individuals will be required to attach proof of current, valid certification with the renewal application. Board administrative staff will be able to independently verify that information with the certifying organization. BPOA

encourages the use of online renewal of licenses. Online renewal does not allow for the submission of documentation to accompany the renewal. Therefore, licensees who renew online will be required to answer a question in the online process verifying that they possess current and valid certification. The answers to these online questions are subject to penalties for unsworn falsification to authorities. Administrative staff will have the ability to independently verify the licensee's certification with NCCCO or another certifying organization. NCCCO certification runs on a 5-year cycle.

Under both ASME and NCCCO requirements, an individual must submit to a physical examination by a physician as evidence of the ability to meet the physical demands of operating a crane. The physical examination must be repeated every 3 years. Accordingly, in § 6.33(a)(5) the Board would require a certified crane operator to aver that the physical examination has been performed.

For individuals who have not been certified, whether they obtained licensure through passing the practical examination or by documenting 5 years of experience, the Board would require the individual seeking renewal to aver that he or she has had a physical examination performed by physician that satisfies the requirements of ASME Volume B30.5 in §§ 6.33(b)(2) and (c)(2).

With respect to individuals who have been licensed without certification, the question arises as to how continued competency could be determined. The Board considered this question because of a desire to assure that the individual seeking license renewal has maintained proficiency and remains abreast of technical developments in the industry. The continuous critical examination and revision of standards and procedures in the industry has been discussed at length earlier in this preamble in reference to OSHA and ASME proceedings. This question is answered with respect to certified crane operators by the OSHA and ASME requirement that crane operators be recertified every 5 years. The process of recertification includes a written examination, plus a practical examination or documentation of 1,000 hours of crane-related experience over the 5-year recertification period.

The answer to this same question required the Board to analyze the problem and extrapolate from the act a satisfactory alternative. The act explicitly prohibits the Board from requiring *certification* as a condition for renewal of a license obtained under section 506. *See* 63 P. S. § 506(b). Still, the fact that the General Assembly subjects all licensees to the same biennial renewal requirement demonstrates the legislative intent that all licensees prove some degree of continued competency as a prerequisite to renewal of the license.

For individuals who have obtained licensure without certification by practical examination under section 506(a)(2) of the act and § 6.23, the Board would require in § 6.33(b)(1) that the individual demonstrate continued proficiency by a passing score on the NCCCO practical examination administered during the biennial period immediately preceding the date of application for renewal. The Board also would require that the licensee submit scores for any other assessments administered during the biennial period in § 6.33(b)(3). Consistent with the provisions of §§ 6.23 and 6.25, the Board would view a failing score obtained after a passing score as *prima facie* evidence of a lack of proficiency or skill that may justify a refusal or restriction of the license.

The Board considered a requirement that licensees under this provision obtain a passing score on a practical examination over a 5-year cycle. However, the Board recognized that there would be additional costs, enforcement challenges, and administrative complications for this option. If the Board were to adopt this alternative each licensee under section 506(a)(2) would have his or her own 5-year anniversary for passing the NCCCO practical examination. Therefore, the Board's administrative staff would have additional responsibility and expense of monitoring each licensee's personal 5-year cycle for passing the practical examination.

Another consideration weighing against the option of a 5-year cycle is that it would terminate during a biennial period. There are two negative consequences arising from this fact. First, the Board would need to decide whether the failure to repeat the practical examination by the 5-year anniversary date constituted grounds for a disciplinary action and lead to a suspension or restriction of a license in mid-term. If it would constitute grounds for disciplinary action, as it would for certified crane operators who fail to be recertified, the Board foresees additional expense and demands on administrative resources due to an increased number of disciplinary actions. If not, licensees under this section would, in effect, have as much as 7 years in which to obtain a passing score on the practical exam, that the 5-year anniversary could end immediately after the license has been renewed, and the licensee would not need to pass the practical exam for another 2 years when the next renewal occurred. A 7 year delay in demonstrating continued competency represents an unreasonable risk to public safety.

The second negative consequence of a termination of a 5-year cycle in mid-term is that it would effectively create a multiple standards for licensees in this classification. That is, as just noted, a licensee whose 5-year anniversary date ends just after the renewal of the license could effectively get 7 years until taking the practical examination again. The individual whose anniversary date falls just before the expiration of a biennial period will need to take the practical examination in 5 years. And because each individual will have a different anniversary date, the length of time to complete the practical examination will vary from person to person.

The Board concluded that in order to avoid additional cost of administration, to better confirm a licensee's continued competency, to avoid multiplicity of enforcement actions, and to avoid arbitrary and disparate treatment of licensees within the same class, the only reasonable option would be to require biennial passing scores on the NCCCO practical examination as a condition for renewal.

For individuals who have obtained a license without certification by experience, under section 506(a)(3) and § 6.25, the Board would require the licensee to satisfy conditions that parallel the requirements for licensees without certification by practical examination. Those requirements include that the individual submit documentation in the form described more fully in § 6.25 that demonstrates that the individual has at least 2,000 hours of experience in operating a crane during the biennial period. *See* § 6.33(c)(1). The 2,000 hours of experience follows the reasoning employed for initial licensure, that is, that the licensee document experience equivalent to one-half of the standard 4,000 work hours for the biennial period in the operation of a crane.

The Board would also require in that the individual submit the results of any assessment

administered in the previous 2 years in § 6.33(c)(3). As discussed in relation to § 6.25(f), the Board would consider a failing grade in an assessment to be *prima facie* evidence of a lack of skill or proficiency that may justify a refusal or restriction of the license.

Section 6.33(c) also expresses the rule that a failing score on an assessment that is not cured with a subsequent passing score constitutes grounds for denying renewal.

§ 6.35. Initiating and terminating inactive status.

Section 504(b) of the act (63 P.S. § 2400.504(b)) allows an individual to apply for inactive status without fee. The act further provides for reinstatement of the license when the license has remained inactive for a period of 5 consecutive calendar years by requiring certification.

In the Board's view, this means that if an individual who obtained a license without certification remains on inactive status for a period of 5 years or more, then that individual cannot reinstate the license. Rather, the individual must become certified and apply for a new license under section 502 of the act. This is a rule that is consistently followed by the licensed professions and occupations under the Bureau's jurisdiction.

Based upon this principle, the Board makes this rule explicit by providing that a license without certification has a maximum inactive term of 5 years less one day in § 6.35(b). A license without certification that has been revoked, which remains inactive for 5 years or more, or which has been suspended and not renewed for 5 years or more, would terminate and cease to exist. Re-entry to the licensed profession after any of these three events could only be accomplished by an initial application for licensure under section 502.

With respect to licenses that are on inactive status when the biennial period expires, the Board interprets the act consistently with the other licensing statutes under the Bureau's jurisdiction. In order to reinstate a license that was inactive or suspended at the end of a biennial period, other boards require the licensee to have satisfied all of the continuing education and experience criteria that the licensee would have been required to complete if he or she had been active and renewed the license on time.

The Board considered the problem of persons who hold a license without certification by experience whose license remains inactive for a period that extends beyond the biennial period when their current license becomes inactive. For purposes of illustration, the Board considered the following hypothetical example: An individual has a license without certification by experience that is issued on October 1, 2010 and is set to expire on October 1, 2012. The licensee applies for inactive status commencing on October 1, 2011 and ending on October 1, 2013.

Under this hypothetical situation, on October 1, 2013, the licensee would need to apply not only to reactivate the license, but also to renew. In order to renew, the licensee would need to submit documentation of 2,000 hours of experience. However, because the licensee was only lawfully permitted to operate a crane for a one-year period from October 1, 2010 to September 30, 2011, it would be very difficult for the individual to satisfy the documented experience requirements for

renewal. The individual would have had to accumulate 2,000 hours of experience within the span of a single year when the license was active.

This hypothetical example illustrates that, as a practical matter, the Board expects that an individual who holds a license without certification by experience will find it increasingly difficult to reactivate the license as a period of inactivity lengthens. For all intents and purposes, it would be nearly impossible for a license without certification by experience to be reactivated after a period of inactivity exceeding 2 years. The individual would need to document experience of 4,000 hours (2,000 hours for the first biennial renewal period that was bypassed as a result of inactive status, plus an additional 2,000 hours for the second biennial renewal period.) However, the individual in this case would be unable to acquire 4,000 hours of experience, at least in Pennsylvania, because they were not licensed to operate a crane in the Commonwealth. It would only be possible if the individual were able to lawfully operate a crane in another jurisdiction during the period when the Pennsylvania license was inactive.

The Board considered the type of problem outlined above. One alternative solution would be to allow individuals who lacked experience to renew their license and operate a crane even after extended periods of inactivity, or without documenting continued proficiency by experience. The Board examined the legislative history and found no evidence to support that view as the legislative intent. The legislative record contains no evidence that the General Assembly believed that 5 years of experience justifies granting a lifetime license to operate a crane without any demonstration of continued proficiency and skill.

On the contrary, for the same reasons discussed above in relation to § 6.33, the Board determined that the General Assembly expressed a preference for crane operators to demonstrate their proficiency through certification. Licensure without certification is the legislative exception to the rule. However, the General Assembly found that exception to be justified because of a period of *uninterrupted* experience as a substitute for objectively tested proficiency.

In the absence of documented experience, the legislative exception is no longer satisfied. Therefore, to advance legislative intent, the Board must require documented experience for each consecutive biennial period as a condition of renewal for that biennial period. Inactive status runs contrary to the need for continued, uninterrupted experience and obviates the rationale for the legislative exception. Accordingly, the Board has concluded that the license without certification by experience issued under § 6.25 is a license that must continue uninterrupted, but for brief periods of inactivity.

The problem of inactive status for a period of less than 5 years is not the same for a license without certification by practical examination issued under § 6.23. A licensee who goes on inactive status for a period in excess of 2 years but less than 5 years would still be required to take and pass the practical examination administered by NCCCO. Actual experience operating a crane is not a prerequisite to taking the practical examination. Therefore, a licensee returning from inactive status could take the practical examination and obtain a passing grade and have the license reinstated. The practical examination, therefore, is evidence of continued proficiency and justifies the exception to the legislative rule.

§6.37. Licensee's change of name and address; service of process and legal papers.

The provisions of § 6.37 have been adopted to formalize the rules relating to the identification of the licensee, and the record address at which service can be made. The Board anticipates that nonresidents may apply for licensure in Pennsylvania and therefore the Board wants licensees to have a clear understanding that they must maintain an accurate address with the Board and that service of process will be attempted at the licensee's address of record.

DISCIPLINARY ACTIONS

§ 6.41. Unlicensed crane operation.

To define the offense of unlicensed crane operation, the Board rephrased the statutory provision at section 501 in terms of a prohibition in § 6.41(a).

Section 6.41(b) then defines offering services or holding out as a crane operator. There are four general ways in which the Board defines "offering services" or "holding out as" a crane operator.

First, express words or conduct offering services or holding out as a crane operator constitute a violation of this section. Second, a failure to disclose the lack of a license would, by itself, constitute a violation under circumstances that would require one.

The third way in which the violation may occur is through words or conduct that would reasonably cause a third person to believe that the individual is a crane operator, holds a license as a crane operator, or possesses the skill, knowledge, authority or expertise to operate a crane. The Board adapted the phrase "...would cause a third person to reasonably believe..." from the Restatement 2d, Torts. The Board concludes that this language is a familiar legal formula that effectively states an objective standard by which a fact finder could determine whether an utterance or conduct constitutes a material misrepresentation of fact.

The Board considered an alternative phrase "justifiably believe" that is also used in the Restatement 2d, Torts. However, "justifiable" is used in the context of a misrepresentation that *actually* causes a person to change their position in reliance upon that misrepresentation. The Board does not think that proof of actual reliance should be a required element of proof for this violation. The inquiry should not lead to whether a person, in fact, relied upon the misrepresentation. The violation occurs when the misrepresentation occurs, even if no other person acted upon that misrepresentation. Therefore, the only inquiry should be whether a reasonable and prudent person *would* have believed the misrepresentation, and not whether someone actually believed the misrepresentation. The regulation intends to discipline all misrepresentations, even if they had no measurable effect.

§ 6.43. Impaired operation of a crane and reportable conditions, incidents or events

The Board's proposed rulemaking attempts to comprehensively cover all forms of impairment that may compromise safety on the worksite. The Board's primary rule in § 6.43(a) is that an individual may not operate a crane with a physical or mental impairment that may reasonably be expected to affect the operation of a crane. By this rule, the Board establishes the principle that it is not whether the licensee subjectively believes that he or she can safely operate a crane. Rather, the Board would apply an objective standard of whether a reasonable and prudent person, knowing the condition of the licensee, would believe that it would be unsafe for the licensee to operate a crane.

In addition to this general rule, § 6.43(b) would also require that a crane operator disclose an impairment that would reasonably be expected to affect the safe operation of a crane. Plainly, the Board would prefer that an impaired individual refrain from operating a crane. However, in the event that an impaired licensee operated a crane, the individual would be subject to a second violation for failure to disclose the impairment.

Section 6.43(c) applies to a crane operator who is self-employed, or a principal of a crane company. When a crane operator is not an employee, the corollary to the rule in §6.43(b) is that the principal, owner, or self-employed individual be required to disclose an impairment to a property owner, prime contractor, project manager, or project superintendent, or another person who is in charge of the premises where the work is performed. These terms are well-known and familiar in the crane industry.

The Board also considered other circumstances in which a licensee has a duty to disclose the existence of an impairment that may reasonably be expected to affect the licensee's ability to safely operate a crane. When an individual files a claim for benefits because of a disability, it may be inconsistent to also enjoy a privilege of holding a valid license to operate a crane. For example, a claim for Social Security disability benefits requires the claimant to assert total disability. Under those circumstances, the licensee should contemporaneously request inactive status. If the licensee does not apply to be placed on inactive status, the Board believes it is necessary to have the authority to suspend the individual's license.

Where the individual has not claimed total disability, the licensee should not be in the position of making a self-determination of whether the disability would safely affect the operation of a crane. For that reason, where the licensee asserts any claim for benefits or compensation for a personal injury, § 6.43(d) would require the licensee to notify the Board so that an independent evaluation can be conducted to determine whether the licensee can safely continue to operate a crane with the alleged impairment. This will require a case-by-case evaluation of reported conditions in order to determine the licensee's continued fitness.

For the same reasons stated with respect to § 6.43(d), the Board would also require in §6.43(e) that a licensee report a medical diagnosis of a condition that may reasonably be expected to affect the safe operation of a crane. As with § 6.43(d), when a licensee has been diagnosed with a condition that impairs the ability to safely operate a crane, the proper action is to request inactive status while the condition persists. However, where the crane operator has not taken inactive status, the Board should be authorized to take disciplinary action for the failure to disclose an impairment.

The Board also requires that a licensee report the institution of criminal proceedings in § 6.43(f). Not every criminal complaint or information will result in commencement of disciplinary action. However, the Board concludes that requiring the reporting of such information will allow the matter to be evaluated on a case-by-case basis to determine whether any disciplinary action should be taken, particularly under section 705 of the act (63 P.S. § 2400.705), authorizing temporary and automatic suspensions.

When a trainee has criminal proceedings pending, that individual must obtain permission from the Board to act as a trainee under § 6.43(g). As with § 6.43(f), the Board will not refuse permission in every case, but the reporting requirement will allow the Board to evaluate the matter on a case-by-case basis to determine whether the nature of the alleged offenses warrant a restriction on the trainee.

§ 6.45. Aiding and abetting unlicensed crane operation.

Section 501(b) of the act (63 P.S. § 2400.501(b)), provides that an individual, corporation, partnership, firm or other entity may not employ an individual to operate a crane or allow or direct an individual to operate a crane unless the individual is licensed. For its regulations, the Board has taken the statutory prohibition and enumerated three specific prohibited acts in § 6.45(a).

First, using the statutory language, the regulation prohibits a business entity from using its employee as an unlicensed crane operator. Second, the regulation uses the statutory language prohibiting a business entity from passively permitting an unlicensed individual to operate a crane, or to order or instruct an unlicensed individual to operate a crane.

The Board interpreted this second statutory prohibition to include the situation where a business entity uses a relationship other than the master-servant, or employer-employee, relationship. The intent behind this broader language was to prohibit attempts to circumvent the prohibition on unlicensed crane operation by using independent contractors. To make its interpretation more explicit, the Board added the third prohibitory clause relating to retention or hiring of an unlicensed crane operator as an independent contractor. This third clause is not redundant, though. Section 6.45(a)(2) is broader than the "independent contractor" language. In the Board's view, to "allow or direct" an unlicensed individual to operate a crane would also include circumstances in which a business entity uses a third party or intermediary to engage the services of an unlicensed individual, but never enters into a direct relationship with the unlicensed person as an employee or as an independent contractor.

Because business entities are not licensed, the Board foresees a problem of enforcement of unlicensed crane operation against business entities. An unlicensed individual who operates a crane may be subject not only to civil penalties, but the Board may also issue an administrative cease and desist order against an individual to enjoin that person from operating a crane. However, since business entities are not licensed, the Board would not be able to issue cease and desist orders to a business entity to remove the business entity from the crane industry.

In response to this problem, the Board has incorporated a rule restricting individual licensees

from working for repeat offender business entities in § 6.45(b). This "three strikes" rule applies to a business entity that has been found in violation of unlicensed crane operation three times in the space of 4 years. Individual licensees would be barred from operating a crane for these adjudicated chronic violators.

A business entity that cannot employ licensed crane operators would be effectively barred from lawful participation in the crane industry in the Commonwealth for a period of at least 1 year. However, that stiff penalty is reserved for serious offenders. The standard is not three offenses committed in a 4 year period, but three separate findings by the Board in the course of 4 consecutive years. In other words, under this provision a strike is called on the date of an adjudication, and not on the date of an offense.

Given the length of time that disciplinary actions take to investigate and prosecute, in practical terms, the recidivist conduct that would be penalized by this provision would likely involve the commission of three offenses in less than 36 consecutive months. In light of this type of obstinate and flagrant repetitious misconduct, the Board believes that this type of sanction is appropriate as a means of protecting the public from willful disregard for safe and legal standards of crane operation and to effectively police and enforce the act.

The Board has also provided for a procedure and standards for removing the sanction in § 6.45 (d) and (e). After 1 year a business entity may petition for the removal of the sanction, and as a protective measure the Board may place restrictions on individual licensees working for the business entity, or require the business entity to post a bond, other security, or impose other restrictions on the business entity's activities as a condition of permitting licensees to work for the business entity.

§ 6.47. Standards of conduct, disciplinary action, suspension in subsection (a) and revocation.

With respect to standards of conduct, the Board begins by restating its statutory authority to levy a civil penalty upon a licensee and impose a range of sanctions upon licensees under its jurisdiction.

Subsection (b) enumerates certain acts, errors, conditions or omissions that may provide the basis for disciplinary action. These include negligence, and the inability to use reasonable skill due to mental or physical illness or condition.

The Board also distinguishes between two types of impairment due to substance use or abuse. Paragraph (3) is intended to cover operation of a crane while actually impaired. Paragraph (4) would not necessarily require proof of actual impairment during the operation of a crane, but can be proved by evidence that the individual was dependent or engaged in a pattern of substance abuse during the period of time when he or she operated a crane.

For paragraph (4) the Board tracked the language of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria for substance abuse. Subparagraph (A) fits the DSM-IV definition for "substance abuse" which would require evidence that the individual has had recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home;

recurrent use in situations in which it is physically hazardous; recurrent substance-related legal problems; or continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance.

Subparagraph (B) would require the Commonwealth to present evidence of dependence. Applying the DSM criteria such evidence would include a diagnosis by an qualified health care practitioner, or three or more of the following, occurring any time in the same 12-month period: (1) tolerance; (2) withdrawal; (3) the substance is often taken in larger amounts or over a longer period than intended; (4) a persistent desire or unsuccessful efforts to cut down or control substance use; (5) a great deal of time is spent to obtain the substance, use the substance, or recover from its effects; (6) important social, occupational, or recreational activities are given up or reduced because of substance use; or (7) the substance use is continued despite knowledge of having a persistent physical or psychological problem that is likely to have been caused or exacerbated by the substance.

Under the DSM "full remission" can be early or sustained. Early full remission means that for at least 1 month, but for less than 12 months, no criteria for dependence or abuse have been met. Sustained full remission describes remission of 12 months or longer. Under the final clause of § 6.47(b)(4)(B), therefore, if an individual has become dependent on a substance, that licensee should immediately refrain from operation of a crane and not return to crane operation until he or she has been in full remission for at least 1 month.

Licensees would also be subject to disciplinary action for violations of the act, the Board's regulations, fraud or deceit relating to licensure or crane operation, or conviction for a felony or crime of moral turpitude.

Insofar as the Controlled Substances, Drug, Device and Cosmetic Act (35 P.S. §§ 780-101-780-144) is concerned, § 6.47(b)(8) would provide that a licensee could also be disciplined for a violation that falls short of a conviction. This would include dispositions such as probation without verdict under Pennsylvania law, or similar provisions of other states.

Disciplinary action also could be based upon failure to adhere to applicable ASME standards, other accepted standards in the industry, or with knowledge of conditions or circumstances that operation of the crane posed an unreasonable risk of harm. Normally, a prosecution for a violation of any of these three provisions would require the testimony of an expert to demonstrate the standard to be applied, or if an ASME standard or other industry standard were not applicable to the specific situation in question, expert testimony would be needed to establish why the conditions or circumstances made crane operation unsafe.

A licensee would also be subject to discipline for violation of a lawful order of the Board, or for failure to properly supervise a trainee as covered by the provisions of § 6.15 (relating to qualifications and supervision of trainees).

Another ground for disciplinary action would be the failure to report an incident, condition or event as defined by § 6.43 (relating to impaired operation of a crane and reportable conditions, incidents or events). The Board would also consider disciplinary sanctions for the failure to follow

an OSHA safety standard or other applicable safety standard, regardless of whether the violation involved crane operation. Because crane operators also perform other jobs, including engineering work, construction supervision, and operation of other heavy equipment, the possibility exists that a licensee may exhibit unsafe or reckless conduct outside of crane operation that may warrant disciplinary action.

Section 6.47(b)(16) relates to convictions or violations for drunk driving, and § 6.47(b)(17) relates to convictions or violations for criminal conduct that exhibits intentional or reckless conduct that poses a threat of bodily harm to others. In the Board's view, a person who has a history of unsafe behavior should be accountable for such conduct as a condition for the license to operate a crane.

The Board would also provide for the discipline of licensees for retaliatory conduct against others in § 6.47(b)(18). The language of this paragraph was modeled on federal motor safety anti-retaliation provisions for commercial truck drivers, and on the Pennsylvania Whistleblower Act (43 P. S. §§ 1421 – 1428). In addition, the Board would note that it believes that the Whistleblower Act would apply independently to persons who report violations of the act or the Board's regulations.

The Board's licensees may not retaliate against another person for any of four reasons. First, the Board wishes to protect its own licensees who refuse to operate a crane in violation of applicable standards. This provision would apply, for example, when a project superintendent or foreman is also a licensed crane operator and orders another licensed crane operator to violate applicable crane standards. Second, the Board would prohibit retaliatory conduct committed by one of its licensees against another licensee who files a complaint or report of a safety violation, or who is a witness in such a proceeding for a crane safety violation. Third, the Board would prohibit its licensees from retaliating against persons who are not licensed crane operators, but who work in some other integral role in the operation of cranes, such as a rigger, signalperson, inspector, or related jobs. Fourth, the Board would sanction its licensees who retaliate against another person who performs a duty assigned or directed by a licensed crane operator, but who does so under duress or under protest. In order for this fourth violation to be found, the Board would need to make a determination that an individual performed a job as assigned or directed by a licensed crane operator, that the person had a bona fide belief that the operation was unsafe, and that the individual sought corrective or remedial measures from the lift director but the request was denied.

Finally, the Board expressly recognizes affirmative defenses in several enumerated cases. When a licensee is charged with negligence, violation of ASME or industry standards, or general unsafe operations under § 6.47(b)(1), (9), (10), or (11), a licensee may plead and prove as an affirmative defense justifiable reliance upon the professional advice of a lift director or a site supervisor. The Board recognizes that a licensed crane operator must exercise sound, independent judgment in the operation of a crane. However, both ASME standards and OSHA regulations recognize a hierarchy of responsibility in the field. The crane operator may rely upon the professional expertise of another person who holds a higher position in the hierarchy of responsibility, namely the lift director or the site supervisor.

The Board also recognizes that a crane operator may justifiably rely upon the advice of a

licensed health care practitioner in determining one's fitness to work and operate a crane. The Board believes that the recognition of these two affirmative defenses will encourage licensees to consult with professionals and fully disclose their concerns about crane operations or their personal health issues in order to protect themselves against future disciplinary action. Furthermore, the Board believes that encouraging early disclosure and communication about potential problems will promote safety and resolve problems at an early stage.

CERTIFYING ORGANIZATIONS

§ 6.51 Certifying organizations.

Under section 102 of the act (63 P.S. § 2400.102), the Board has been empowered by the General Assembly to designate organizations as certifying organizations. The statutory criteria include a requirement that any such organization offer a testing and certification program that is equivalent to NCCCO, that it meet applicable requirements of ASME, and that it be accredited by NCCA or ANSI.

Under this section, the Board provides that it will accept applications for approval as a certifying organization, and that the applications will be considered according to the General Rules of Administrative Practice and Procedure.

The Board considered several issues in drafting these regulatory provisions. First, the Board noted that the General Assembly's legislative intent was expressed in terms of "equivalence" to NCCCO certification, which is, by statute, required to be recognized under the law. Notably, the General Assembly did not set forth a standard of "comparability" or "similarity" or other verbal standards that might suggest a greater degree of latitude in the Board's approval of certifying organizations. The use of the term "equivalence" indicates the General Assembly's intent that the Board limit its approval to those other organizations that are point-by-point identical to NCCCO in all relevant criteria, except for the fact of a separate corporate existence and control.

Accordingly, the Board examined carefully the criteria that apply to NCCCO and that would be relevant to setting an objective standard of "equivalence." Those criteria are more fully discussed in §§6.53 and 6.55 (relating to application for approval as a certifying organization; and required and discretionary buses for disapproval of an application for approval as a certifying organization) below.

§ 6.53. Application for approval as a certifying organization.

In addition to the basic identifying information, the Board was concerned about the independence and integrity of the certifying process and the organizations that would issue such certification. Notably, NCCCO is only a certifying organization. It does not train or educate people to be crane operators.

The Board considered this fact to be of great importance. Among the licensed professions and occupations, it is rare for a single organization to train or educate individuals, and then assume

responsibility for determining whether they should be certified or licensed. The Board believes that the combination of those functions constitutes a conflict of interest.

A business entity or other organization that charges substantial fees to provide a course of education or training would have an interest in skewing the testing process in order to gain higher pass rates. Clearly, there is a marketing advantage to be gained if an entity can advertise that the graduates of its program or course of study have a higher pass rate. The temptation to manipulate or game the system in order to gain that advantage is too great to be ignored. The Board believes that the obvious existence of such a conflict of interest explains why most licensing bodies keep those functions distinct.

For that reason, the Board requires that an applicant for approval as a certifying organization identify its affiliated corporations or organizations. The Board would not approve as a certifying organization a corporation which owns, or is owned by, a company that owns a training program. The Board does not believe that an applicant with a substantial interest in a training or education program should be permitted to circumvent the barriers against a conflict of interest by forming a shell organization to perform certification. Accordingly, in §6.53(a)(5)-(7), the Board requires detailed information regarding affiliated corporations or organizations so that potential conflicts of interest may be evaluated.

The Board would require the applicant to identify its accreditations with ANSI and NCCA in § 6.53(a)(8). The Board would require the applicant to provide a narrative description of its testing and certification program in § 6.53(a)(9). The Board noted that NCCCO has entered into a voluntary agreement with OSHA recognizing NCCCO as a certifying organization. In light of the importance of OSHA as a regulatory body in this field, the Board considered this factor to be relevant in determining equivalence. See § 6.53(a)(10).

An organization need not be approved to certify crane operators for all types of cranes under the Board's jurisdiction. Therefore, the Board requires that the applicant specify what ASME standards it is requesting approval to certify in § 6.53(a)(11). The Board also notes that NCCCO certifies other occupations besides crane operators, including signalpersons and riggers. Therefore, in § 6.53(a)(12) the Board requires that the applicant identify all other crane-related certifications that it offers.

Finally, the Board would require that the applicant make an unsworn verification of its application and state that it is equivalent to the testing and certification used by NCCCO, and that the applicant report any disciplinary actions, judgments, or civil or criminal actions against it or its affiliated organizations in another state. The Board believes that in performing its function to approve certifying organizations, it has a duty to protect prospective licensees from organizations with a history of unfair or deceptive practices or conduct in other states, and that such a history would be grounds for disapproval.

The Board would also require the applicant to attach supporting documentation to the application and to pay the requisite fee.

§ 6.55. Required and discretionary bases for disapproval of an application for approval as a certifying organization.

The Board distinguished between required and discretionary bases for disapproval of an application to be a certifying organization. In the Board's judgment, there are several criteria that automatically disqualify any applicant asserting equivalence to NCCCO. Those factors include the failure to possess both ANSI and NCCA accreditation, the absence of a voluntary agreement with OSHA, the absence of an affiliation with a program of education or training in crane operation, the failure to verify the averments in the application, or a material statement on the application that the applicant knows or has reason to know is false.

The failure to verify the application or the inclusion of a material false statement require no further justification for inclusion. With respect to accreditation, the Board noted that when the Act was introduced in the General Assembly, NCCCO had been accredited by NCCA, but not by ANSI. However, NCCCO earned ANSI accreditation by September 2007, a little more than a year before final passage of Act 100.

The Board considered the statutory language of the definition of "certification." The first principle of the definition is "equivalency" with NCCCO. At the time of the initial drafting of the bill, either form of accreditation would have satisfied the "equivalency" test because NCCCO only had been accredited by NCCA, and ANSI accreditation actually exceeds or is superior to NCCA accreditation.

The Board came to this conclusion after examining the accrediting processes of each organization. NCCA bases its accreditation entirely upon a documentary submission. It does not conduct a site visit to independently verify or confirm the statements made by an organization seeking accreditation. In contrast, ANSI conducts an onsite assessment and is the only personnel accreditation organization that meets nationally accepted practices for accreditation bodies. In addition, the process used by ANSI to accredit certification bodies is based on an international standard (ISO/IEC 17011).

While NCCA is recognized as an accrediting body, the Board concluded that its standards are minimal. In contrast, certification that has been accredited by ANSI can be recognized internationally. The Board determined that the General Assembly intended to provide crane operators licensed in Pennsylvania with a competitive advantage in the global marketplace by assuring that their license would be consistent with international standards of personnel certification.

Based upon this reasoning, the Board concluded that the equivalency test could only be satisfied by possessing both forms of accreditation.

In consideration of the primacy of the anticipated OSHA regulations, the Board concluded that a voluntary OSHA agreement was also an indispensable and objective criterion by which to measure equivalency. Since NCCCO's voluntary agreement with OSHA was expressly predicated in part on the independence of NCCCO from any training or education program, the Board also deemed that factor to be essential. The Board believes that approval of organizations which offer a

certification certain to be accepted by OSHA as a valid form of certification protects the public, as well as licensees, by assuring that the certification that the individual acquires will be accepted in the marketplace.

The Board determined that there may be other grounds in which the weight of evidence may need to be considered in order to make a determination of equivalency. If the Board found evidence that the applicant was not independent of a training or education program, even though it did not have an interlocking corporate organization of the sort described in §6.53(a)(5)-(7), then the Board would disapprove the application. For example, an applicant that had an exclusive contractual relationship to test and certify candidates from a separate organization that trains and educates crane operators may rise to the level of a conflict of interest that violates the need for independence.

Another example of a lack of independence may arise where a certifying organization and a training organization may not have common ownership or a corporate affiliation, but the principals of the two organizations are members of the same immediate family, or have other common enterprises or commercial relationships. In such cases, the Board would need to evaluate evidence to determine whether the organizations do, in fact, act independently and have no conflict of interest.

The Board would also evaluate on a case by case basis each applicant with a history of administrative, civil or criminal actions. Minor or isolated infractions would not be sufficient, in the Board's judgment, to warrant disapproval. However, if the history is serious enough, or if there is a pattern of repeated violations, the Board would rely upon such evidentiary findings to base its disapproval.

Finally, if all of the other factors have been satisfied, but the weight of other evidence supports a finding that the applicant does not offer a program of testing and certification that is equivalent to NCCCO, then the Board may disapprove the application. The Board anticipates that this basis for disapproval would be limited to a small number of cases. Such cases might include, for example, those in which the Commonwealth has challenged with expert testimony the validity of the applicant's psychometrics for its assessment instruments, or the Commonwealth has challenged the validity of the applicant's disciplinary or complaints processes. If the Commonwealth offered evidence demonstrating that these types of components were not valid or performed in good faith, then the Board may, based upon findings of fact supported by substantial evidence, disapprove those applications.

§ 6.57. Determination of application for approval as a certifying organization.

The Board has spelled out in § 6.57 the procedures by which an application will be evaluated. The Board anticipates that the initial determination of completeness will be made by administrative staff. Where an application is incomplete, the Board, through its staff, will make a preliminary determination as to whether there are any factors on the face of the application that would automatically disqualify the applicant from approval as a certifying organization. Where the application is incomplete and includes criteria that would disqualify the applicant, the Board would notify the applicant of a disapproval, the grounds for such disapproval, and provide the applicant with notice of the right to a hearing before the Board, and the opportunity to supplement the

application and cure any defects.

When the application is incomplete, but does not appear to have any grounds for automatic disapproval, then the Board, through its staff, would notify the applicant of the deficiencies and advise the applicant of the right to supplement the application within 30 days.

When the application is complete, or the applicant has not elected to supplement the application, the Board, through its staff, will forward the application to a third party professional evaluator, to independently evaluate and review the application for equivalency to NCCCO. The independent evaluation would be completed within 60 days, and the evaluator would provide the Board and the applicant with a written report of the findings. The Board anticipates soliciting a request for proposals for this service and issuing a contract to a private contractor.

Upon receipt and review of the independent evaluation, the Board would then make a determination to approve, schedule a hearing or provisionally deny the application. The provisional denial of an application would trigger a notice to the applicant of a right to request a hearing, and if the applicant exercised that right, the Board would schedule a hearing.

After an evidentiary hearing the Board could grant the application in whole or in part, or sustain the disapproval. The applicant would have the burden of proving by substantial evidence that the program is equivalent to NCCCO. The Commonwealth, consistent with the earlier discussion of discretionary and required grounds for disapproval in § 6.55, would be able to offer evidence contradicting the applicant's case. Upon review of the record, the Board would enter findings of fact based upon the weight of evidence offered by the applicant and the Commonwealth.

When the applicant who has received a provisional denial has not exercised the right to a hearing, a final order will be entered disapproving the application. An applicant is not limited in the frequency or number of applications that it submits.

§ 6.59. Order granting an application for approval as a certifying organization.

The act does not authorize the Board to license certifying organizations, but only to grant approval. The Board's interpretation of the act is that once approved, a certifying organization remains approved indefinitely, until it relinquishes its approval voluntarily, or circumstances change and it is no longer equivalent to NCCCO.

For this reason, the Board has enumerated in detail the contents of orders granting approval in § 6.59(a)(1)-(5), including the conditions on which approval of the organization is based, and which, if changed, would trigger disqualification.

These conditions of approval include the organization's accreditation with ANSI and NCCA, a condition of voluntary relinquishment of its authority to certify in the event of a loss of accreditation, a requirement of ongoing submission of future accreditation by ANSI and NCCA, and a limitation prohibiting the transfer of the approval to another organization. The regulations provide that the approval ceases to be effective by operation of law upon the violation of any of these latter

requirements.

§ 6.61. Petition to terminate approval as a certifying organization.

For the same reasons stated in the preceding section, the Board has included a procedure for the Commonwealth to terminate the approval of a certifying organization. The grounds for such termination are limited.

The Commonwealth may petition to terminate approval when the Commonwealth has a reasonable basis to assert that the certifying organization no longer satisfies the conditions set forth in § 6.59, or made a material misrepresentation of fact that was not known to the Commonwealth at the time of approval of the application.

Where the Commonwealth has reason to believe that the certifying organization is no longer a viable functioning entity because of dissolution, bankruptcy, merger and acquisition, or other similar reasons, the Board does not want the approval of such an organization to remain on the record. Therefore, the Commonwealth may seek termination of the approval under those circumstances. Also, the Commonwealth may petition to terminate approval of a certifying organization that is no longer independent of a training and education program, and which holds a conflict of interest as a result of that loss of independence.

§ 6.61(b) provides for procedures to be followed by the Commonwealth in petitioning for termination, and specifies that if an immediate suspension is required, then the Commonwealth must set forth facts demonstrating an immediate risk of harm. The regulations also provide for an answer to the petition to be filed within 20 days, followed by a hearing, and, if successful, the authority to levy the costs of investigation in support of such a petition.

Fiscal Impact and Paperwork Requirements

The proposed rulemaking should have no adverse fiscal impact on the Commonwealth, its political subdivisions, or the private sector. The proposed rulemaking does impose additional paperwork requirements upon the Commonwealth and the private sector, but those costs are consistent with and in furtherance of the act.

Sunset Date

The Board continuously monitors the cost effectiveness of its regulations. Therefore, no sunset date has been assigned.

Regulatory Review

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on May 25, 2010, the Board submitted a copy of this proposed rulemaking and a copy of a Regulatory Analysis Form to the Independent Regulatory Review Commission (IRRC) and to the Chairpersons of the Senate Consumer Protection and Professional Licensure Committee and the House Professional

Licensure Committee. A copy of this material is available to the public upon request.

Under section 5(g) of the Regulatory Review Act, IRRC may convey any comments, recommendations or objections to the proposed rulemaking within 30 days of the close of the public comment period. The comments, recommendations or objections shall specify the regulatory review criteria that have not been met. The Regulatory Review Act specifies detailed procedures for review, prior to final publication of the rulemaking, by the Board, the General Assembly and the Governor of comments, recommendations or objections raised.

Public Comment

Interested persons are invited to submit written comments, recommendations or objections regarding this proposed rulemaking to Regulatory Unit Counsel, Department of State, at P. O. Box 2649, Harrisburg, PA 17105-2649 or by e-mail at RA-CRANEOPERATORS@state.pa.us, within 30 days of publication of this proposed rulemaking in the *Pennsylvania Bulletin*. Please reference No. 16A-7101 (Initial General Rulemaking), when submitting comments.

Anthony J. Lusi, Jr.
Chairman
State Board of Crane Operators

TITLE 49. PROFESSIONAL AND VOCATIONAL STANDARDS

PART I. DEPARTMENT OF STATE

Subpart A. PROFESSIONAL AND OCCUPATIONAL AFFAIRS

CHAPTER 6. STATE BOARD OF CRANE OPERATORS

GENERAL PROVISIONS

§ 6.1. Findings and purpose.

(a) The Board finds that:

(1) The improper operation of a crane may cause a catastrophic event on a work site, resulting in fatality, other bodily harm and property damage.

(2) Although any machine or man-made activity may cause fatality, other bodily harm or property damage, the magnitude of the loads borne by cranes, the associated tension and stress on structural elements of cranes, the motor power required to operate winches, the mobility of cranes and other factors that are peculiar to cranes, lead to exceptional hazards and risk of harm arising from crane operation that warrant additional regulation by the Commonwealth.

(3) Operator error is a significant cause of bodily harm and property damage arising from the use of cranes.

(4) A uniform standard of testing, certification and licensure as a prerequisite to admission to the occupation of crane operator is necessary to reduce the

incidence of error and promote a higher degree of conformity to safe crane operation.

(5) Reduction of crane-related incidents will save lives, reduce bodily injury to the public and construction workers, reduce property damage, increase efficiency and raise productivity of Pennsylvania businesses.

(b) The Board promulgates the regulations in this chapter:

(1) To protect people from bodily harm by reducing the incidence of operator error through a process of objectively measured testing, certification and licensure as a prerequisite to admission to the occupation of crane operator.

(2) To protect people from bodily harm by establishing standards of conduct applied to crane operators in order to restrict or remove from the occupation of crane operation those persons proved to have engaged in conduct, habits, behavior or judgment that has caused bodily harm or is reasonably likely to create an unreasonable risk of harm in the future.

(3) To protect crane operators and trainees from undue influence to engage in unsafe practices.

(4) To protect crane operators and trainees from unfair practices in the process of certification or recertification.

(5) To promote competitiveness and economic efficiency in the crane industry without impairing safety, training or certification.

§ 6.3. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

Act – The Crane Operator Licensure Act, (63 P.S. §§ 2400.101 - 2400.2103).

ANSI – The American National Standards Institute.

ASME – The American Society of Mechanical Engineers.

Board – The State Board of Crane Operators.

Certification – Certification from the National Commission for the Certification of Crane Operators, or another organization found by the Board to offer:

(1) A testing and certification program equivalent to National Commission for the Certification of Crane Operators and meeting the applicable requirements of ASME B30.

(2) The accreditation requirements of National Commission for Certifying Agencies and ANSI.

Certifying organization – National Commission for the Certification of Crane Operators, or another organization approved by the Board to issue certification.

Coal mining or *coal mining operations* – The extraction of bituminous coal, lignite or anthracite from natural deposits in nonliquid form, or if in liquid form, with workers underground, by any means or method, and the work of preparing coal so extracted.

Commissioner – The Commissioner of Professional and Occupational Affairs within the Department of State.

Conviction – An ascertainment of guilt of the accused and judgment thereon by a court, and includes a disposition of a criminal proceeding under Pennsylvania law, or any similar disposition under the laws of another jurisdiction, by a plea of guilty, guilty but mentally ill, or *nolo contendere*; or a verdict of guilty, or guilty but mentally ill. "Conviction" does not include an adjudication of delinquency pursuant to the Juvenile Act (42 Pa. C. S. A. §§ 6301 – 6375).

Crane – A power-operated hoisting machine that has a power-operated winch, load line and boom moving laterally by the rotation of the machine on a carrier or base which has a manufacturer's rated maximum lifting capacity of 15 tons or more as specified in ASME Volumes B30.3, B30.4, and B30.5, and any successor volumes.

(a) "Crane" includes a:

(1) Derrick.

(2) Crawler crane.

(3) Wheel-mounted crane of both truck and self-propelled wheel type.

(4) A tower crane, which has a manufacturer's rated maximum lifting capacity of 10 meter tons or more, as specified in the applicable ASME B30 volume.

(b) "Crane" does not include a:

(1) Crane or drag line used in coal mining operations.

(2) Forklift.

(3) Digger derrick truck.

(4) Aircraft.

(5) Bucket truck.

(6) Vehicle or machine not having a power-operated winch.

(7) Tow truck or wrecking crane when used for towing or vehicle recovery.

(8) Locomotive crane.

(9) Crane used in longshore operations or other intermodal operations.

(10) A crane used in manufacturing applications.

Crane operator – An individual licensed by the Board to operate a crane.

Department – The Department of State of the Commonwealth.

Engage in the operation of a crane or *operate a crane* – To perform a physical function related to the activation or movement of a crane, and encompassing the use and manipulation of the control mechanisms that direct the movement and hoisting functions of a crane.

Immediate supervision – Circumstances in which the crane operator is in the immediate area of the trainee, within visual sighting distance and able to effectively communicate with the trainee.

Lift director – An individual who directly oversees the work being performed by a crane.

Longshore operations – Receiving, handling, holding, consolidation, loading or delivery of waterborne shipments at a marine terminal as that term is defined in 29 C. F. R. § 1917.2. The term does not include:

(1) Construction, alteration, service, repair or improvement of real estate appurtenant to a marine terminal.

(2) Repair, service or installation of tangible personal property appurtenant to a marine terminal.

(3) The assembly, fabrication, installation or arrangement of parts or components of a machine, fixture, transportation improvement to real

estate, or building, whether for the purpose of a fitting, adjustment, refinement or test as a temporary or preliminary condition; or as a final, permanent or completed work or product.

Manufacturing application or *manufacturing* or *manufacture* - The performance of manufacturing, fabricating, compounding, processing or other operations, engaged in as a business, which place any tangible personal property in a form, composition or character different from that in which it is acquired whether for sale or use by the manufacturer, and shall include, every operation commencing with the first production stage and ending with the completion of tangible personal property having the physical qualities (including packaging, if any, passing to the ultimate consumer) which it has when transferred by the manufacturer to another.

The terms "manufacturing application," "manufacturing" or "manufacture" do not include:

(1) Construction, alteration, service, repair or improvement of real estate.

(2) Repair, service or installation of tangible personal property.

(3) The assembly, fabrication, installation or arrangement of parts or components of a machine, fixture, transportation improvement to real estate or building, whether for the purpose of a fitting, adjustment, refinement or test as a temporary or preliminary condition; or as a final, permanent or completed work or product.

NCCA – National Commission for Certifying Agencies.

NCCCO – National Commission for the Certification of Crane Operators.

Other intermodal operations or *intermodal operations* or *intermodal services* – Receiving, handling, holding, consolidation, loading or delivery of an intermodal container, as defined in 29 C. F. R. § 1917.2, at a facility other than a marine terminal. The term does not include:

(1) Construction, alteration, service, repair or improvement of real estate appurtenant to a railroad or trucking terminal.

(2) Repair, service or installation of tangible personal property appurtenant to a railroad or trucking terminal.

(3) The assembly, fabrication, installation, or arrangement of parts or components of a machine, fixture, transportation improvement to real estate or building, whether for the purpose of a fitting, adjustment, refinement or test as a temporary or preliminary condition; or as a final, permanent or completed work or product.

OSHA – The United States Occupational Safety and Health Administration.

Trainee – An individual who has not been issued a license under this act or obtained certification but who is authorized to operate a crane as set forth in section 501(c) of the act, (63 P. S. § 2400.501), and § 6.15 (relating to qualifications and supervision of trainees) when under the immediate supervision of a crane operator.

Work of preparing the coal - The breaking, crushing, sizing, cleaning, washing, drying, mixing, storing and loading of bituminous coal, lignite or anthracite, and such other work of preparing such coal as is usually done by the operator of a coal mine. The term does not include:

(1) Construction, alteration, service, repair or improvement of real estate appurtenant to a coal mine.

(2) Repair, service or installation of tangible personal property appurtenant to a coal mine.

(3) The assembly, fabrication, installation or arrangement of parts or components of a machine, fixture, transportation improvement to a coal mine or building, whether for the purpose of a fitting, adjustment, refinement or test as a temporary or preliminary condition; or as final, permanent or completed work or product.

§ 6.5. Applicability of general rules.

Under 1 Pa. Code § 31.1 (relating to scope of part), 1 Pa. Code Part II (relating to General Rules of Administrative Practice and Procedure), is applicable to the activities of and proceedings before the Board, and the Board may exercise the powers, remedies, or procedures prescribed therein.

§ 6.7. Fees.

(a) The schedule of fees charged by the Board is as follows:

Initial licensing application fee: $100

Biennial renewal fee: $100

Verification of Licensure: $15

Addition of crane specialty: $ 70

Application for certifying organization: $1,000

Trainee registration fee: $100

(b) Fees shall accompany applications and be made payable to "Commonwealth of Pennsylvania".

LICENSURE

§ 6.11. General requirements.

(a) An individual who engages in the operation of a crane in this Commonwealth shall be licensed by the Board, or shall be authorized to operate a crane as a trainee.

(b) An individual who holds a license as a crane operator shall have the right to use the title "Licensed Crane Operator" and the abbreviation "L.C.O."

(c) To qualify as a candidate for licensure, the applicant shall:

(1) Be 18 years of age or older.

(2) Be of good moral character.

(3) Present satisfactory evidence to the Board that the applicant possesses a current certification, or qualifies for licensure without certification pursuant to section 506 of the act (63 P. S. § 2400.506).

(4) Aver subject to penalties for unsworn falsification to authorities under 18 Pa.C.S. § 4904, that the applicant has been examined by a physician and determined to be physically capable of operating a crane.

(5) Pay all requisite fees.

(d) Felony convictions under The Controlled Substance, Drug, Device and Cosmetic Act (35 P. S. §§ 780-101 – 780-144), or an offense under the laws of another jurisdiction which if committed in this Commonwealth would be a felony under

The Controlled Substance, Drug, Device and Cosmetic Act, will preclude an applicant from obtaining or maintaining a license to operate a crane unless:

(1) At least 10 years have elapsed from the date of conviction.

(2) The individual satisfactorily demonstrates to the Board that the individual has made significant progress in personal rehabilitation since the conviction such that licensure of the individual should not be expected to create a substantial risk of harm to the health and safety of crane operators, trainees or the public or a substantial risk of further criminal violations.

(3) The individual otherwise satisfies the qualifications provided in the act and this chapter.

(4) The Board will evaluate an individual's progress in personal rehabilitation from the totality of the circumstances, including, but not limited to, the individual's entire criminal history, employment history, the severity and frequency of past criminal history, whether and for how long the individual has abstained from substance abuse, refrained from tortious or criminal conduct, made restitution or compensation, followed a course of treatment and therapy, completed a program of education, offers testimony from other persons of the individual's good character, and practices an ongoing commitment to recovery.

(e) An applicant who has a conviction described in subsection (d) shall report such conviction on a form prescribed by the Board, and shall attach documentary evidence in support of the factors identified in subsection (d)(1), (2) and (4).

§ 6.13. Certification.

(a) A crane operator's license obtained by certification will be valid only in conjunction with a current certification in the specialty for which the crane operator has been certified.

(b) Proof of certification must include a copy of written and practical examination scores as provided to the applicant by a certifying organization, and a waiver for the certifying organization to release the licensee's certification status and recertification scores to the Board.

(c) A license shall authorize the licensee to operate only the type of crane for which the individual holds a valid certification, and may not be construed as a general license to operate any crane type or to perform any or all activities related to crane operation.

(d) A person who possesses a certification may not apply for licensure without certification under §§ 6.21 – 6.25.

(e) An individual who acquires certification after October 9, 2010, may not operate a crane as a trainee for a period of more than 90 days from the date of certification, unless granted leave by the board to operate a crane as a trainee for an additional period of 90 days while an application for licensure is pending before the board.

§ 6.15. Qualifications and supervision of trainees.

(a) A trainee may operate a crane in this Commonwealth for purposes of acquiring the experience necessary to obtain certification subject to the provisions of the act and of this chapter.

(b) A trainee may only operate a crane, or engage in crane operations, if:

(1) The trainee is under the immediate supervision of a crane operator.

(2) The trainee has satisfied applicable ASME standards for trainee qualification requirements as more fully set forth in the applicable ASME volumes for the type of crane for which the trainee is being trained and supervised, and trainee requirements prescribed by OSHA regulations.

(c) A trainee must be 18 years of age or older and demonstrate to the satisfaction of the crane operator providing immediate supervision and the person employing the crane operator providing immediate supervision, that the trainee is physically capable of operating a crane.

(d) A trainee shall register on a form prescribed by the Board, and shall attach documentary evidence of a passing score on a written examination administered by a certifying organization.

(e) A trainee may only be authorized to act as a trainee when in possession of written authorization issued in a form prescribed by the Board, and such authorization will only be valid for a period not to exceed 1 year from the date of passing the written examination.

(f) A crane operator who immediately supervises a trainee shall perform the duties for supervision of trainees set forth in the ASME volume applicable to the type of crane that is the subject of operation by the trainee, and requirements prescribed by OSHA regulations.

(g) When providing immediate supervision of a trainee pursuant to this section, a crane operator may not have other duties, and shall supervise only one trainee at any time.

(h) A crane operator may not accept a duty to supervise a trainee unless the crane operator possesses sufficient competence and experience to safely supervise the trainee for the specific operation or task to be undertaken by the trainee.

§ 6.17. Specialties.

(a) The following types of cranes shall require specialty licenses from the Board:

(1) Tower cranes.

(2) Lattice boom crawler.

(3) Lattice boom truck.

(4) Telescopic boom crane with a rotating control station.

(5) Telescopic boom crane with a fixed control station.

(b) A license to operate a crane shall be valid only in conjunction with certification if the licensee maintains a current certification in the specialty for which the crane operator is certified.

§ 6.19. Licensure of a crane operator from another jurisdiction.

(a) The Board may issue a license to an individual who has licensure or its equivalent as a crane operator in any other state or territory of the United States or the Dominion of Canada if the individual is 18 years of age or older, of good moral character, currently certified by a certifying organization and has paid all requisite fees.

(b) A crane operator or an applicant for licensure as a crane operator shall report to the board:

(1) Any license held by the individual to operate a crane in another jurisdiction on the original application and on the biennial renewal application.

(2) Any disciplinary action in another jurisdiction on the biennial registration, or within 30 days of the final disposition, whichever is sooner. For purposes of this section, final disposition means a disposition by a governmental agency levying a monetary penalty, reprimanding the individual, restricting the individual's license, or otherwise adversely affecting the individual's property interest in the license, and which is appealable under the laws of the jurisdiction where the disposition has been entered.

(c) The Board will note an individual's licensure held in other jurisdictions in the crane operator's record.

(d) The Board will issue written notice to other jurisdictions of the final disposition of any disciplinary action commenced in this Commonwealth.

LICENSURE WITHOUT CERTIFICATION

§ 6.21. Licensure without certification generally.

(a) The Board will accept applications to grant to individuals a license without certification until December 9, 2011, subject to the provisions of this section and

§§ 6.23 and 6.25 (relating to licensure without certification by practical examination; and licensure without certification by experience).

(b) To qualify for a license without certification the applicant shall:

(1) Be at least 18 years old.

(2) Be of good moral character.

(3) Pay all requisite fees.

(4) Satisfy the requirements of § 6.23 (relating to licensure without certification by practical examination) or § 6.25 (relating to licensure without certification by experience).

(5) Be without any valid certification.

(c) A crane operator's license obtained without certification will be valid only in conjunction with a current and valid photo identification issued by governmental agency.

§ 6.23. Licensure without certification by practical examination.

(a) An individual who applies for a license without certification under the provisions of section 506 of the act (63 P. S. § 2400.506) and who satisfies the requirements of § 6.21 (b)(1), (2), and (3) (relating to licensure without certification generally) may elect to qualify for a license without certification by a practical examination administered by NCCCO.

(b) An applicant seeking to qualify for a license without certification under this section shall submit with the application for licensure a copy of the practical

examination score as provided by NCCCO and shall pay the declaration fee set forth in § 6.7 (relating to fees).

(c) An applicant for a license without certification under this section may be eligible only for a license in the specialty for which the applicant has passed a practical examination administered by NCCCO.

(d) An applicant for a license without certification under this section shall submit with the application an averment that the applicant has been examined by a physician and successfully passed an examination that satisfies the requirements of ASME Volume B 30.5.

(e) An applicant for a license without certification under this section shall submit with the application documentation of the results of any assessment administered within the 2 years prior to the date of application by a program of operator qualification and certification satisfying the requirements of 29 CFR Chapter 1926.

(f) In lieu of certification, with a license without certification the Board will issue a declaration specifying the specialty crane for which the licensee has qualified and for which the applicant has passed a practical examination administered by NCCCO, and limiting the types of cranes that the holder of a license without certification by practical examination may operate.

(g) A license without certification under this section will only be valid in conjunction with the declaration set forth in subsection (f) of this section.

§ 6.25. Licensure without certification by experience.

(a) An individual who applies for a license without certification under the provisions of section 506 of the act (63 P. S. § 2400.506) and who satisfies the requirements of § 6.21 (b)(1), (2) and (3) (relating to licensure without certification generally) may elect to qualify for a license without certification by submitting acceptable documentation of 5 or more years of experience immediately preceding the date of application for licensure demonstrating to the Board's satisfaction the applicant's competency to safely operate the type of crane for which the applicant seeks a license, and payment of the requisite declaration fee.

(b) Acceptable documentation shall consist of:

(1) Each Internal Revenue Service Form W-2 (Wage and Tax Statement) and Internal Revenue Service Form 1099 issued to the applicant for the 5 calendar years prior to the year of application for which the applicant received compensation as a crane operator.

(2) A record of the applicant's experience on a form prescribed by the Board, listing each project in which the applicant operated a crane, or engaged in the operation of a crane including no less than 5,000 hours of work during a period of 5 years immediately preceding the date of application for licensure.

(c) The record of the applicant's experience shall identify:

(1) The name and business address of the prime contractor or other person who employed or engaged the services of the applicant.

(2) Whether the applicant worked as an employee or independent contractor on the project.

(3) The location of the project.

(4) The type of crane operated.

(5) Whether an incident occurred in the operation of the crane resulting in disability to an individual in excess of the working shift or turn in which the injury was received.

(6) The number of hours worked on the project engaged in the operation of a crane.

(7) If the applicant worked as an independent contractor in the operation of a crane at any time during the 5 years prior to the date of application, a certificate of insurance for each insurer who issued a policy of comprehensive general liability insurance to the applicant.

(d) An applicant for a license without certification under this section may be eligible only for a license in the specialty for which the applicant has submitted acceptable documentation.

(e) An applicant for a license without certification under this section shall submit with the application an averment that the applicant has been examined by a physician and successfully passed an examination that satisfies the requirements of ASME Volume B 30.5.

(f) An applicant for a license without certification under this section shall submit with the application documentation of the results of any assessment administered

within the 2 years prior to the date of application by a program of operator qualification and certification satisfying the requirements of 29 CFR Chapter 1926.

(g) In lieu of certification, with a license without certification under this section the Board will issue a declaration specifying the specialty crane for which the licensee has qualified with at least 1,000 hours and for which the applicant has submitted acceptable documentation, and limiting the types of cranes that the holder of a license without certification by experience may operate.

(h) A license without certification under this section shall only be valid in conjunction with the declaration set forth in subsection (g) of this section.

RENEWAL OF LICENSE

§ 6.31. Duration of license.

(a) A licensee shall register each biennial period to retain the right to operate a crane.

(b) Licensure is valid throughout this Commonwealth, is not assignable or transferable, and is valid until the last date of the biennial licensure period.

§ 6. 33. Renewal of license.

(a) Applications for renewal of a license with certification shall be made on forms provided by the Board, and shall include:

(1) Proof of current, valid certification issued by a certifying organization.

(2) An indication whether certification will expire before the biennial renewal cycle will expire. In the case of a licensee applying for renewal of license

where certification will expire before the biennial renewal cycle will expire, the licensee shall submit to the board before the expiration of the certification, evidence that the licensee has renewed certification consisting of proof of recertication. Failure to maintain certification, or to submit evidence of renewal of certification before the expiration date of certification will subject the licensee to disciplinary action.

(3) A waiver for the certifying organization to release the licensee's certification status and recertification scores to the Board.

(4) An averment that the licensee has been examined by a physician and successfully passed an examination that satisfies the requirements of ASME Volume B 30.5.

(b) Applications for renewal of a license without certification by practical examination issued originally under § 6.23 (relating to licensure without certification by practical examination) shall be made on forms provided by the Board, and shall include:

(1) Proof of a passing score on a practical examination administered by NCCCO during the 2-year period immediately preceding the date of the application for renewal.

(2) An averment that the applicant has been examined by a physician and successfully passed an examination that satisfies the requirements of ASME Volume B 30.5.

(3) The results of any assessment administered after the commencement of the previous biennial period of licensure by a program of operator qualification and certification satisfying the requirements of 29 CFR Chapter 1926.

(c) Applications for renewal of a license without certification by experience issued originally under § 6.25 (relating to licensure without certification by experience) shall be made on forms provided by the Board, and shall include:

(1) A record of the applicant's work experience in the form provided by § 6.25(c) demonstrating 2,000 hours of experience during the 2-year period immediately preceding the date of application for renewal.

(2) An averment that the applicant has been examined by a physician and successfully passed an examination that satisfies the requirements of ASME Volume B 30.5.

(3) The results of any assessment administered after the commencement of the previous biennial period of licensure by a program of operator qualification and certification satisfying the requirements of 29 CFR Chapter 1926.

(d) The application for renewal must be received by the Board with the required biennial renewal fee before the expiration of the previous biennial registration period.

(e) Renewal of a license without certification under § 6.23 or § 6.25 may be denied for any individual who has been administered an assessment by a program of

operator qualification and certification satisfying the requirements of 29 CFR Chapter 1926, and who has failed the assessment and who has not subsequently obtained a passing score in the same assessment or another assessment that meets the requirements of 29 CFR Chapter 1926.

§ 6.35. Initiating and terminating inactive status.

(a) An individual holding a license with certification may request an application for inactive status from the Board.

(b) An individual holding a license without certification issued originally under §§ 6.23 or 6.25 (relating to licensure without certification by practical examination; or licensure without certification by experience) may request inactive status for a period not to exceed 5 years less one day.

(c) The license will be maintained on inactive status without fee and the individual shall be entitled to apply for a license reactivation at any time.

(d) An individual who applies to reactivate a license that has been placed on inactive status for a period of 5 consecutive years or more shall, prior to receiving an active license, submit satisfactory evidence of current certification and remit the required fee.

§ 6.37. Licensee's change of name or address; service of process and legal papers.

(a) A licensee's name on file with the Board shall be the name that appears on the license unless that name is legally changed, in which case the licensee shall report the change and the reason for the change to the Board in writing within 10 days.

(b) A licensee who changes an address on file with the Board shall notify the Board in writing within 10 days. Licensees who do not comply with this subsection shall bear full responsibility for failure to receive correspondence from the Board, including biennial renewal notifications.

(c) A licensee's most recent name and address on file with the Board shall be deemed the licensee's official name and address for the purposes of service of process and other legal papers.

DISCIPLINARY ACTIONS

§ 6.41. Unlicensed crane operation.

(a) An individual may not operate a crane, offer one's services as a crane operator, or hold oneself out as a crane operator unless licensed by the Board.

(b) A person who is not licensed by the Board offers services as a crane operator, or holds oneself out as a crane operator by:

(1) Express words or conduct that the individual is a licensed crane operator.

(2) A failure to disclose that the individual does not possess a license to operate a crane, under circumstances which would require a license.

(3) Words or conduct that the person offering services as a crane operator or holding out as a crane operator has reason to know would cause a third person to reasonably believe that the individual uttering such words or engaging in such conduct is a crane operator, holds a license as a crane

operator, or possesses the skill, knowledge, authority or expertise to operate a crane.

§ 6.43. Impaired operation of a crane and reportable conditions, incidents or events.

(a) A crane operator or trainee may not operate a crane if, by reason of physical or mental impairment, the crane operator or trainee cannot reasonably be expected to operate a crane safely or engage in the operation of a crane safely.

(b) A crane operator or trainee shall report to the lift director of the crane which the crane operator or trainee has been employed to operate, or has been retained to operate as an independent contractor, any physical or mental impairment that may reasonably be expected to affect the operation of a crane.

(c) If, in addition to acting as the crane operator, the licensee fulfills the function of a lift director, or another role required under applicable ASME B30 volumes, the crane operator shall report to a responsible person, such as the property owner, prime contractor, project manager, project superintendent or other person in charge of the premises on which the crane shall be operated, any physical or mental impairment that may reasonably be expected to affect the operation of a crane.

(d) If a crane operator or trainee files a claim for workers' compensation, Social Security Disability, or for disability benefits under any other policy or program, or commences an action seeking compensation for personal injuries, the crane operator or trainee shall, contemporaneously with the commencement of the claim

or action, provide the Board with a copy of the document commencing the claim or action.

(e) If a crane operator or trainee obtains a diagnosis or opinion from a licensed health care practitioner that the crane operator or trainee is subject to a physical, mental or other condition lasting more than 30 days and that may reasonably be expected to affect the operation of a crane, the crane operator or trainee shall notify the Board, in writing within 10 days, of the name of the licensed health care practitioner who provided the opinion, the condition or impairment that has been diagnosed or the opinion that has been rendered, and the prognosis for the condition.

(f) A crane operator shall report in writing to the Board criminal proceedings in a court case against the crane operator within 10 days of the institution of such criminal proceedings. The written report of criminal proceedings under this subsection shall include the jurisdiction in which the proceedings have been instituted, the docket number, offense tracking number or other number identifying the criminal proceeding, and the offense or offenses with which the crane operator has been charged. A court case means a case in which one or more of the offenses charged is a misdemeanor, felony, or murder of the first, second, or third degree.

(g) An individual shall not be authorized to operate a crane as a trainee if criminal proceedings in a court case have been instituted against that person, unless the

individual has petitioned the Board for leave to be authorized to act as a trainee, and the Board has granted the person's petition.

§ 6.45. Aiding and abetting unlicensed crane operation.

(a) Except as provided in § 6.15 (relating to the qualifications and supervision of trainees), an individual, corporation, partnership, firm or other entity may not:

(1) Employ an unlicensed individual to operate a crane.

(2) Allow or direct an unlicensed individual to operate a crane.

(3) Retain or hire an unlicensed individual as an independent contractor to operate a crane.

(b) If an individual, corporation, partnership, firm or other entity has been found by the board on three or more occasions during a 4-year period to have violated the provisions of subsection (a), the board may declare the individual, corporation, partnership, firm or other entity to be a chronic aider and abettor of unlicensed crane operation.

(c) The Board may bar all crane operators from accepting employment, or accepting retention as an independent contractor with a chronic aider and abettor of unlicensed crane operation.

(d) An entity which has been declared a chronic aider and abettor of unlicensed crane operation may petition the Board 1 year after being barred to request that the bar be removed.

(e) The Board may impose restrictions on licensees, demand posting of a bond or other security by the petitioner, or place other restrictions on the petitioner to assure future compliance.

§ 6.47. Standards of conduct, disciplinary action, suspension and revocation.

(a) The Board may levy a civil penalty, impose costs of investigation, or refuse, restrict, suspend or revoke a license if the Board finds that an individual subject to its jurisdiction violated any of the provisions of the act or this chapter.

(b) The following acts, errors or omissions constitute a violation of the standards of conduct of a crane operator:

(1) Negligent operation of a crane.

(2) Operation of a crane without the ability to use reasonable skill and safety by reason of mental or physical illness or condition.

(3) Operation of a crane while impaired by alcohol, hallucinogenic or narcotic drugs, or another substance that impairs judgment or coordination.

(4) Operation of a crane during a period of time when:

(i) The individual abuses alcohol, hallucinogenic or narcotic drugs, or other substances that impair judgment or coordination.

(ii) The individual is dependent upon alcohol, hallucinogenic or narcotic drugs, or other substances that impair judgment or coordination, and dependence is not in full remission.

(5) Violation of any of the provisions of the act, or this chapter.

(6) Commision of fraud or deceit in:

(i) The operation of a crane.

(ii) Securing licensure or certification.

(iii) Securing renewal of licensure or certification.

(7) Conviction of a felony or a crime of moral turpitude, or disposition by probation without verdict, disposition in lieu of trial or Accelerated Rehabilitative Disposition in the disposition of a felony or a crime of moral turpitude in the courts of this Commonwealth, the United States or any other state, territory, possession of the United States or any other country.

(8) Violation of The Controlled Substance, Drug, Device and Cosmetic Act (35 P. S. §§ 780-101 – 780-144) or an equivalent offense under the laws of another jurisdiction.

(9) Failure to operate a crane consistent with the requirements of the applicable ASME B 30 standard.

(10) Failure to operate a crane in a manner consistent with accepted standards in the industry.

(11) Operation of a crane, engaging in the operation of a crane or continuing to operate a crane, when the crane operator had reason to know of conditions or circumstances under which the crane could not be operated without exposing persons or property to an unreasonable risk of harm.

(12) Violation of a lawful order of the Board.

(13) Failure to properly supervise a trainee.

(14) Failure to report an event, occurrence, injury, property damage, claim, condition, diagnosis, civil action, criminal proceeding or other matter subject to the duty to report in § 6.43 (relating to impaired operation of a crane and reportable conditions, incidents or events).

(15) Failure to follow applicable workplace safety standards of OSHA, or other applicable safety standards of the Commonwealth or another jurisdiction, regardless of whether the violation arose from the operation of a crane.

(16) Conviction or disposition by Accelerated Rehabilitative Disposition or any disposition other than a nonconviction, for a violation of 75 Pa. C. S. A. § 3801 – 3817 pertaining to driving after imbibing alcohol or utilizing drugs.

(17) Conviction or disposition by Accelerated Rehabilitative Disposition, or any disposition other than a nonconviction for an offense that involves intentional or reckless conduct that poses an unreasonable risk of bodily harm to others.

(18) Whether or not acting in the capacity of a crane operator, to discharge, discipline or in any manner discriminate against another person with respect to that person's compensation, terms, conditions or privileges of employment or independent contract, for any of the following reasons:

(i) Such other person has refused to operate a crane, or participate in the operation of a crane in a manner which is not in compliance with the provisions of the act, this chapter, a Federal rule, regulation, standard or order

applicable to crane operation, or the applicable ASME B 30 volume.

(ii) Such other person, or a person acting pursuant to a request of such other person, has filed a complaint or instituted or caused to be instituted any proceeding relating to a violation of the provisions of the act, this chapter, a Federal rule, regulation, standard or order applicable to crane operation, or the applicable ASME B 30 volume, or has testified or is about to testify in any such proceeding.

(iii) The other person refused to participate in the operation of a crane as a rigger, signal person, or in another function related to the operation of a crane when such operation constitutes a violation of the act, this chapter, an applicable ASME B30 volume, or Federal rules, regulations, standards or orders applicable to crane operation.

(iv) The other person had a reasonable apprehension of serious injury to himself or herself, or to another person due to the unsafe condition of the crane or the unsafe manner in which the crane was to be operated. For purposes of this paragraph, the other person has a reasonable apprehension of serious injury due to the unsafe condition of a crane or the unsafe manner in which a crane is to be operated if:

(A) The condition of the crane or manner of operation is of such nature that a reasonable person, under the circumstances then confronting the other person, would conclude that there is a bona fide danger of an accident, injury or serious impairment of health resulting from the unsafe condition or unsafe manner of operation.

(B) The other person sought from the lift director and was unable to obtain correction of the unsafe condition or unsafe manner of operation.

(c) It shall be an affirmative defense to an allegation of a violation of subsection (b)(1), (9), (10) or (11) that the crane operator acted, or refrained from acting, in justifiable reliance upon the advice, instruction or direction of the site supervisor or the lift director.

(d) It shall be an affirmative defense to an allegation of a violation of subsection (b)(2), (3), (4) or (14) that the crane operator acted, or refrained from acting, in justifiable reliance upon the advice of a licensed health care practitioner.

CERTIFYING ORGANIZATIONS

§ 6.51. Certifying organizations.

An organization may apply to the Board in accordance with the General Rules of Administrative Practice and Procedure for approval to issue certification under the act.

§ 6.53. Application for approval as a certifying organization.

(a) An entity seeking to issue certification under the act shall submit, in writing, an application in a form prescribed by the Board that avers, under penalty for unsworn falsification to authorities at 18 Pa. C. S. A. § 4904, the following:

(1) The name and business address of the applicant.

(2) The name and title of the individual authorized to act as the applicant's agent.

(3) The name, title and principal business address of each individual who is an officer of the applicant.

(4) The type of corporate organization and the state in which the applicant is incorporated or organized.

(5) The names and addresses of any parent or subsidiary entities of the applicant.

(6) The names and addresses of each entity that is affiliated with the applicant. For purposes of this section, "entity which is affiliated with the applicant" means an entity having common or interlocking ownership with the applicant, or with a parent or subsidiary of the applicant.

(7) Whether the applicant or any of the entities identified in paragraphs (5) or (6) offer a program of training or education in crane operation.

(8) Whether the applicant is accredited by ANSI, NCCA, or both.

(9) A description of the testing and certification program administered by the applicant.

(10) Whether the applicant has entered into a voluntary agreement with OSHA for the purpose of recognizing its program as a validation of the competency and certification of the qualifications of crane operators.

(11) Each crane type described in ASME Volume B 30.5 for which the applicant requests approval to issue certification.

(12) Each function or occupation other than crane operator and which is related to the operation of a crane, for which the applicant issues certification.

(13) An averment that the applicant's testing and certification program is equivalent to the testing and certification program used by NCCCO.

(14) Whether the applicant, a parent entity, subsidiary entity or an entity affiliated with the applicant has been subject to disciplinary action in another jurisdiction, or has been the subject of civil or criminal proceedings in the Commonwealth or another jurisdiction, and if so, the jurisdiction, the nature of the claims or charges, the disposition and the docket or case number of the disciplinary action, civil proceedings or criminal proceedings.

(b) The organization shall attach to its application as an exhibit, and incorporate by reference, a copy of any documents upon which the applicant's accreditation has been based, and the applicant's agreement with OSHA.

(c) The application shall be accompanied by the application fee set forth in § 6.7 (relating to fees).

§ 6.55. Required and discretionary bases for disapproval of an application for approval as a certifying organization.

(a) The Board will deny an application for approval as a certifying organization on the basis that it is *per se* not equivalent to certification issued by NCCCO for any one or more of the following reasons:

(1) The applicant is not accredited by ANSI.

(2) The applicant is not accredited by NCCA.

(3) The applicant is not a party to a voluntary agreement with OSHA for the purpose of recognizing its program as a validation of the competency and certification of the qualifications of crane operators.

(4) The applicant is a parent or subsidiary of an entity that offers a program of training or education in crane operation.

(5) An entity that is affiliated with the applicant as defined in § 6.53(a)(6) (relating to application for approval as a certifying organization) offers a program of training or education in crane operation.

(6) The applicant has failed to verify the statements in the application.

(7) The applicant has made a material statement on its application that it knows or has reason to know is false.

(b) The Board may deny an application for approval as a certifying organization for any of the following reasons:

(1) A finding by the Board that the applicant is not independent of an entity that offers a program of education or training in crane operation.

(2) A finding by the Board that the applicant, its parent, its subsidiary, or an entity affiliated with the applicant has been the subject of disciplinary action in another jurisdiction, or has been found in a civil proceeding or criminal proceeding to have been engaged in fraudulent conduct, misrepresentation, unfair commercial or consumer practices, breach of contract or negligence.

(3) A finding by the Board that the applicant does not offer a program of testing and certification that is equivalent to the program of testing and certification offered by NCCCO.

§ 6.57. Determination of application for approval as a certifying organization.

(a) Upon receipt of an application for approval, the Board will make a determination of completeness of the application.

(b) If the Board has made a determination that the application is incomplete, but the completed portion of the application demonstrates on its face that the applicant's program is *per se* not equivalent to NCCCO certification according to the criteria set forth in § 6.55(a) (relating to required and discretionary bases for disapproval of an application for approval as a certifying organization), the Board will deny the application, advise the applicant in writing of the deficiencies or incompleteness, and the specific grounds on which a determination that the program is *per se* not equivalent to NCCCO certification, and advise the applicant of its right to file within 30 days a request for a hearing before the Board, together with supplementation to complete the application.

(c) If the application is incomplete, and the completed portion of the application does not demonstrate that the applicant's program is *per se* not equivalent to NCCCO certification, the Board will advise the applicant in writing of the deficiencies or incompleteness, and advise the applicant of its right to supplement the application within 30 days.

(d) If the application is complete, or if the application is incomplete but the applicant has not supplemented the application within 30 days, or if the applicant entity has not requested a continuance of the Board's consideration, the Board will refer the application for review to an appropriate and qualified individual or firm to independently evaluate and review the application for equivalence to NCCCO certification.

(e) The independent evaluation and review will be completed within 60 days with a written opinion provided to the Board by the evaluator expressing an opinion as to the applicant entity's equivalence to NCCCO certification, and a copy of the opinion to the applicant entity.

(f) Upon consideration of the written opinion of the independent evaluation and review, the Board will enter an appropriate order to approve, schedule a hearing, or provisionally deny the application.

(g) If the Board provisionally denies the application, the Board will advise the applicant of its right to file within 30 days a request for a hearing.

(h) Upon filing of a request for a hearing pursuant to subsections (b) or (g), the Board will schedule the matter for a hearing.

(i) After a hearing the Board may:

(1) Grant approval to issue certification for all crane types described in ASME Volume B 30.5 as requested in the application.

(2) Grant approval to issue one or more, but less than all certifications for crane types described in ASME Volume B 30.5 as requested in the application.

(3) Deny approval to issue any certifications requested in the application.

(j) The applicant shall have the burden of proving that its testing and certification program is equivalent to NCCCO.

(k) If the applicant does not request a hearing within 30 days as provided in subsections (b) or (g), the Board will issue a final order denying the application.

(l) An applicant that has been denied approval may re-apply for approval as a certifying organization.

§ 6.59. Order granting an application for approval as a certifying organization.

(a) An order granting an application for approval as a certifying organization will include:

(1) The legal name of the certifying organization.

(2) The date on which the application was approved.

(3) The date on which the order was entered.

(4) Each crane type described in ASME Volume B 30.5 for which the Board has granted approval.

(5) A statement of authorization that the certifying organization may hold itself out as a certifying organization in the Commonwealth of Pennsylvania.

(6) A statement that the certifying organization shall notify within 10 days, in writing, the Board and to each individual holding its certification, any change to its accreditation by NCCA or ANSI.

(7) A statement that the certifying organization shall immediately and voluntarily cease and desist from issuing certifications, or holding itself out as a certifying organization in the Commonwealth upon a determination withdrawing or terminating its accreditation by NCCA or ANSI.

(8) A statement that the certifying organization shall submit to the Board within 30 days of receipt from NCCA or ANSI a copy of each certificate of renewal of accreditation.

(9) A statement that the authorization to issue certifications in the Commonwealth granted by the order to approve the application is not transferable.

(b) An order granting approval of a certifying organization will cease to be effective by operation of law upon either of the following conditions:

(1) The failure of the certifying organization to comply with the obligations set forth in subsection (a)(6), (7) or (8).

(2) A loss of accreditation by NCCA or ANSI.

§ 6.61. Petition to terminate approval as a certifying organization.

(a) The Commonwealth may file a petition to terminate approval as a certifying organization for any one of the following reasons:

(1) Upon information and belief that the certifying organization has failed to satisfy the conditions of § 6.59(b) (relating to order granting application for approval as a certifying organization).

(2) Upon information and belief that the order granting the application for approval as a certifying organization was granted based upon a misrepresentation of a material fact by the applicant which neither the Board nor the Commonwealth knew or had reason to know at the time the order was issued.

(3) Upon information and belief that:

(A) The certifying organization has terminated its existence.

(B) The certifying organization has ceased to be qualified to do business in this Commonwealth.

(C) The certifying organization has ceased to offer its certification to residents of this Commonwealth.

(D) The certifying organization offers or has offered a program of training or education in crane operation.

(E) The certifying organization has a parent entity or subsidiary entity that offers a program of training or education in crane operation.

(F) An entity affiliated with the certifying organization offers a program of training or education in crane operation.

(b) A petition to terminate approval as a certifying organization must include:

(1) A copy of any writing upon which the petition is based.

(2) A notice to plead demanding an answer to the allegations of the petition, and advising the certifying organization of its rights pursuant to the Administrative Agency Law and the General Rules of Administrative Practice and Procedure.

(3) If the Commonwealth requests immediate suspension of the certifying organization's approval, the petition must include allegations demonstrating an immediate risk of harm to the public or persons holding certification from the respondent certifying organization.

(c) Within 20 days of service of the petition to terminate approval as a certifying organization, the certifying organization shall file a written answer to the petition admitting or denying each allegation and setting forth any affirmative defenses.

(d) Upon close of the pleadings, the Board will issue an order scheduling the matter for a hearing at the next available regularly scheduled board meeting, or delegate the matter to a hearing examiner.

(e) If the Board grants the petition to terminate approval as a certifying organization, the Board may, if otherwise authorized by statute, levy the costs of investigation upon the certifying organization.

Federal Register

Thursday,
October 9, 2008

Part II

Department of Labor

Occupational Safety and Health Administration

29 CFR Part 1926

Cranes and Derricks in Construction; Proposed Rule

DEPARTMENT OF LABOR

Occupational Safety and Health Administration

29 CFR Part 1926

[Docket ID–OSHA–2007–0066]

RIN 1218–AC01

Cranes and Derricks in Construction

AGENCY: Occupational Safety and Health Administration (OSHA), Labor.

ACTION: Proposed rule.

SUMMARY: OSHA is proposing a rule to protect employees from the hazards associated with hoisting equipment when used to perform construction activities. Under this proposed rule, employers would first determine whether the ground is sufficient to support the anticipated weight of hoisting equipment and associated loads. The employer then would be required to assess hazards within the work zone that would affect the safe operation of hoisting equipment, such as those of power lines and objects or personnel that would be within the work zone or swing radius of the hoisting equipment. Finally, the employer would be required to ensure that the equipment is in safe operating condition via required inspections and employees in the work zone are trained to recognize hazards associated with the use of the equipment and any related duties that they are assigned to perform.

DATES: Submit comments (including comments to the information-collection (paperwork) determination described under the section titled "Supplementary Information" of this document), hearing requests, and other information by December 8, 2008. All submissions must bear a postmark or provide other evidence of the submission date. (See the following section titled **ADDRESSES** for methods you can use in making submissions.)

ADDRESSES: Comments and hearing requests may be submitted as follows:

- *Electronic.* Comments may be submitted electronically to *http://www.regulations.gov,* which is the Federal eRulemaking Portal. Follow the instructions online for submitting comments.
- *Facsimile:* OSHA allows facsimile transmission of comments and hearing requests that are 10 pages or fewer in length (including attachments). Send these documents to the OSHA Docket Office at (202) 693–1648; hard copies of these documents are not required. Instead of transmitting facsimile copies of attachments that supplement these documents (e.g., studies, journal articles), commenters may submit these attachments, in triplicate hard copy, to the OSHA Docket Office, Technical Data Center, Room N–2625, OSHA, U.S. Department of Labor, 200 Constitution Ave., NW., Washington, DC 20210. These attachments must clearly identify the sender's name, date, subject, and Docket ID (i.e., OSHA–2007–0066) so that the Agency can attach them to the appropriate document.
- *Regular mail, express delivery, hand (courier) delivery, and messenger service:* Submit three copies of comments and any additional material (e.g., studies, journal articles) to the OSHA Docket Office, Docket ID OSHA–2007–0066 or RIN No. 1218–AC01, Technical Data Center, Room N–2625, OSHA, Department of Labor, 200 Constitution Ave., NW., Washington, DC 20210; telephone: (202) 693–2350. (OSHA's TTY number is (877) 889–5627.) Please contact the OSHA Docket Office for information about security procedures concerning delivery of materials by express delivery, hand delivery, and messenger service. The hours of operation for the OSHA Docket Office are 8:15 a.m. to 4:45 p.m., e.t.
- *Instructions.* All submissions must include the Agency name and the OSHA Docket ID (i.e., OSHA–2007–0066). Comments and other material, including any personal information, are placed in the public docket without revision, and will be available online at *http://www.regulations.gov.* Therefore, the Agency cautions commenters about submitting statements they do not want made available to the public, or submitting comments that contain personal information (either about themselves or others) such as social security numbers, birth dates, and medical data.
- *Docket.* To read or download comments or other material in the docket, go to *http://www.regulations.gov* or to the OSHA Docket Office at the address above. Documents in the docket are listed in the *http://www.regulations.gov* index; however, some information (e.g., copyrighted material) is not publicly available to read or download through this Web site. All submissions, including copyrighted material, are available for inspection and copying at the OSHA Docket Office. Contact the OSHA Docket Office for assistance in locating docket submissions.

FOR FURTHER INFORMATION CONTACT: *General information and press inquiries.* Contact Ms. Jennifer Ashley, Director, Office of Communications, OSHA, U.S. Department of Labor, Room N–3647, 200 Constitution Avenue, NW., Washington, DC 20210; telephone (202) 693–1999 or fax (202) 693–1634.

- *Technical inquiries.* Contact Mr. Garvin Branch, Directorate of Construction, Room N–3468, OSHA, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, DC 20210; telephone (202) 693–2020 or fax (202) 693–1689.
- *Copies of this Federal Register notice.* Available from the OSHA Office of Publications, Room N–3101, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, DC 20210; telephone (202) 693–1888.
- *Electronic copies of this notice.* Go to OSHA's Web site (*http://www.osha.gov*), and select "Federal Register," "Date of Publication," and then "2008."
- *Additional information for submitting documents.* See section V.I. ("Public Participation") of this notice.

SUPPLEMENTARY INFORMATION:

I. General

A. Table of Contents

The following Table of Contents identifies the major preamble sections in this notice and the order in which they are presented:

I. General
  A. Table of Contents
  B. Hearing
II. Background
  A. History
  B. The Cranes and Derricks Negotiated Rulemaking Advisory Committee (C–DAC)
  C. Hazards Associated with Cranes and Derricks in Construction Work
III. The SBREFA Process
IV. Summary and Explanation of the Proposed Standard
V. Procedural Determinations
  A. Legal Authority
  B. Preliminary Economic Analysis and Initial Regulatory Flexibility Analysis
  C. OMB Review Under the Paperwork Reduction Act of 1995
  D. Federalism
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B. Hearing

Requests for a hearing should be submitted to the Agency as set forth above under **DATES** and **ADDRESSES**.

II. Background

A. History

The Occupational Safety and Health Act of 1970 (84 Stat. 1590, 29 U.S.C.

651–678) (the OSH Act) authorizes the Secretary of Labor to adopt safety and health standards to reduce injuries and illnesses in American workplaces. Pursuant to that authority, the Secretary has adopted, among others, a set of safety and health standards applicable to the construction industry, 29 CFR Part 1926. Initially, standards for the construction industry were adopted under the Construction Safety Act, 40 U.S.C. 333. Under the Construction Safety Act, those standards were limited to employers engaged in federally-financed or federally-assisted construction projects. The Secretary subsequently adopted them as OSHA standards pursuant to Section 6(a) of the OSH Act, 29 U.S.C. 655(a), which authorized the Secretary to adopt established federal standards as OSH Act standards within the first two years the OSH Act was effective (36 FR 25232, Dec. 30, 1971). Subpart N of 29 CFR part 1926, entitled "Cranes, Derricks, Hoists, Elevators, and Conveyors," was originally adopted through this process.

The section of subpart N of 29 CFR part 1926 that applies to cranes and derricks is § 1926.550. That section relies heavily on national consensus standards that were in effect in 1971, in some cases incorporating the consensus standards by reference. For example, § 1926.550(b)(2) requires crawler, truck, and locomotive cranes to meet applicable requirements for design, inspection, construction, testing, maintenance, and operation prescribed in ANSI B30.5–1968, "Crawler, Locomotive and Truck Cranes." Similarly, § 1926.550(e) requires derricks to meet applicable requirements for design, construction, installation, inspection, testing, maintenance, and operation prescribed in ANSI B30.6–1969, "Derricks." Since 1971, § 1926.550 has been amended substantively only twice. In 1988, a new paragraph (g) was added to establish clearly the conditions under which employees on personnel platforms may be hoisted by cranes and derricks. 53 FR 29116 (Aug. 2, 1988). In 1993, a new paragraph § 1926.550(a)(19) was added to require that all employees be kept clear of lifted and suspended loads.

There have been considerable technological changes since the 1971 OSHA standard was issued. For example, hydraulic cranes were rare at that time but are now prevalent. Although the OSHA standard remains largely unchanged, the construction industry has updated the consensus standards on which the OSHA standard is based. For example, the industry consensus standard for derricks was most recently updated in 2003, and that for crawler, locomotive and truck cranes in 2004.

In recent years, a number of industry stakeholders asked the Agency to update Subpart N's cranes and derrick requirements. They were concerned that accidents involving cranes and derricks continued to be a significant cause of fatal and other serious injuries on construction sites and believed that an updated standard was needed to address the causes of these accidents and to reduce their numbers. They emphasized that the considerable changes in both work processes and technology have made much of Subpart N obsolete.

In response to these requests, in 1998 OSHA's Advisory Committee for Construction Safety and Health (ACCSH) established a workgroup to develop recommended changes to the Subpart N requirements for cranes and derricks. The workgroup developed recommendations on some issues and submitted them to the full committee in a draft workgroup report. (OSHA–2007–0066–0020). In December 1999, ACCSH recommended to OSHA that the agency consider using a negotiated rulemaking process as the mechanism to update Subpart N (ACCSH 1999–4, Ex. 100x, p. 112).

B. The Cranes and Derricks Negotiated Rulemaking Advisory Committee (C–DAC)

In July 2002, OSHA announced its intent to use negotiated rulemaking under the Negotiated Rulemaking Act (NRA), 5 U.S.C. 561 *et seq.*, to revise the cranes and derricks standard. The Agency made this decision in light of the stakeholder interest in updating Subpart N, the constructive discussions and work of the ACCSH workgroup, ACCSH's recommendation, a positive assessment of the criteria listed in the NRA (5 U.S.C. 563(a)) for the use of negotiated rulemaking, and the Department of Labor's policy on negotiated rulemaking (See "Notice of Policy on Use of Negotiated Rulemaking Procedures by Agencies of the Department of Labor," 57 FR 61925 (Dec. 29, 1992)). The Agency issued a notice of intent to use negotiated rulemaking for this project and establish the Cranes and Derricks Negotiated Rulemaking Advisory Committee ("C–DAC" or "the Committee") (67 FR 46612, July 16, 2002).

Negotiated rulemaking is a process by which a proposed rule is developed by a committee comprised of members who represent the interests that will be significantly affected by the rule. Section 562 of the NRA defines "interest" as follows:

> "[I]nterest" means, with respect to an issue or matter, multiple parties which have a similar point of view or which are likely to be affected in a similar manner.

By bringing different viewpoints to the table and sharing views, the members of the negotiated rulemaking committee learn the reasons for different positions on the issues as well as the practical effect of various approaches. Each member of the committee participates in resolving the interests and concerns of other members. Negotiation allows interested parties, including members who represent the interests of employers who will be subject to the rule and the employees who stand to benefit from the safer workplaces the rule will produce, to become involved at an earlier stage of the rulemaking process. As a result, the rule that OSHA proposes will have already received close scrutiny by affected parties at the pre-proposal stage.

The goal of the negotiated rulemaking process is to develop a proposed rule that represents a consensus of all the interests. The NRA defines consensus as unanimous concurrence among the interests represented on a negotiated rulemaking committee unless the committee itself unanimously agrees to use a different definition of consensus. As discussed below, C–DAC agreed by unanimous vote to a different definition: a consensus was reached on an issue when not more than two non-federal members dissented on that issue.

In the July 2002 notice of intent to establish a negotiated rulemaking committee referred to above, the Agency listed key issues that OSHA expected the negotiations to address and the interests that OSHA had tentatively identified as being significantly affected by the rulemaking. Those interests were:

—Crane and derrick manufacturers, suppliers, and distributors.
—Companies that repair and maintain cranes and derricks.
—Crane and derrick leasing companies.
—Owners of cranes and derricks.
—Construction companies that use cranes and derricks.
—General contractors.
—Labor organizations representing construction employees who operate cranes and derricks.
—Labor organizations representing construction employees who work in conjunction with cranes and derricks.
—Owners of electric power distribution lines.
—Civil, structural and architectural engineering firms and engineering consultants involved with the use of cranes and derricks in construction.

—Training organizations.
—Crane and derrick operator testing organizations.
—Insurance and safety organizations, and public interest groups.
—Trade associations.
—Government entities involved with construction safety and with construction operations involving cranes and derricks.

OSHA asked for public comment on whether interests other than those listed would be significantly affected by a new rule. It also solicited requests for membership on the committee. OSHA urged interested parties to communicate with others who shared similar interests and to begin organizing coalitions to support those interests in order to identify individuals for nomination to the committee.

The Agency noted that the need to limit the committee's membership to a number that could conduct effective negotiations might mean that not all interests could be represented on the committee itself. However, OSHA further noted that interested persons had means other than committee membership available to participate in the committee's deliberations, including attending committee meetings and addressing the committee, providing written comments to the committee, and participating in committee workgroups. 67 FR at 46615.

In response to its request for public input, the Agency received broad support for using negotiated rulemaking and 55 nominations for committee membership. To keep membership to a reasonable size, OSHA tentatively listed 20 potential committee members and asked for public comment on that proposed list. 68 FR 9036 (Feb. 27, 2003). In response to the comments, OSHA added three members to the committee—individuals from the mobile crane manufacturing industry, the Specialized Carriers & Rigging Association, and the outdoor advertising industry. 68 FR 39879 (July 3, 2003).

The members of the Committee, the organizations and interests they represent, and a summary of their qualifications at the time the Committee was formed are in Table 1 as follows:

TABLE 1—THE QUALIFICATIONS OF C–DAC PANEL MEMBERS

Stephen Brown, International Union of Operating Engineers (labor).	
Title	Director of Construction Training, International Union of Operating Engineers.
Organizations/Interests represented	Organized construction employees who operate cranes and derricks, and work with such equipment.
Experience	Worked in numerous positions in the construction industry over 28 years, including Equipment Operator, Mechanic, and Training Director.
Michael Brunet, Manitowoc Cranes, Inc. (manufacturers and suppliers).	
Title	Director of Product Support for Manitowoc Cranes.
Organizations/Interests represented	Crane manufacturers, suppliers, and distributors.
Experience	Extensive engineering experience in crane engineering; participated in development of SAE and ISO standards for cranes.
Stephen P. Charman, Viacom Outdoor, Inc. (employer users).	
Title	Vice President (New York) of Viacom Outdoor Group.
Organizations/Interests represented	Billboard construction.
Experience	Over 43 years' experience with the construction industry, including specialized rigging.
Joseph Collins, Zachry Construction Corporation (employer users).	
Title	Crane Fleet Manager.
Organizations/Interests represented	Highway/Railroad Construction.
Experience	Over 30 years' experience with the construction industry in a variety of positions including crane operator, mechanic, and rigger.
Noah Connell, U.S. Department of Labor, Occupational Safety and Health Administration (government).	
Title	Director, Office of Construction Standards and Guidance.
Organization/Interests represented	Government.
Experience	22 years' experience with government programs.
Peter Juhren, Morrow Equipment Company, L.L.C. (manufacturers and suppliers).	
Title	National Service Manager.
Organization/Interests represented	Tower crane distributor/manufacturer.
Experience	22 years' experience with Morrow Equipment Company, L.L.C.
Bernie McGrew, Link-Belt Construction Equipment Corp. (manufacturers and suppliers).	
Title	Manager for Crane Testing, Product Safety, Metal Labs and Technical Computing.
Organization/Interests represented	Mobile crane manufacturers.
Experience	Extensive engineering experience in crane engineering.
Larry Means, Wire Rope Technical Board (manufacturers and suppliers).	
Title	Rope Engineer.
Organization/Interests represented	Wire rope manufacturing industry.
Experience	36 years' wire rope engineering experience.
Frank Migliaccio, International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers (labor organization).	
Title	Executive Director for Safety and Health.
Organization/Interests Represented	Organized construction employees who operate cranes and derricks, and work with such equipment.
Experience	31 years' experience in the ironworking industry, including ten years as Director of Safety and Health Training for the Ironworker's National Fund.

TABLE 1—THE QUALIFICATIONS OF C–DAC PANEL MEMBERS—Continued

Brian Murphy, Sundt Corporation (employer users).	
Title	Vice President and Safety Director.
Organization/Interests Represented	General contractors/crane owners/users.
Experience	Over 35 years' experience in the construction industry, most of them with Sundt.
George R. "Chip" Pocock, C.P. Buckner Steel Erection (employer users).	
Title	Safety and Risk Manager.
Organization/Interests Represented	Steel Erection crane user/employers.
Experience	Over 22 years' experience in the construction/steel erection industry.
David Ritchie, St. Paul Companies (trainer and operator testing).	
Title	Crane and Rigging Specialist.
Organization/Interests Represented	Employee Training/Evaluation.
Experience	Over 31 years' experience in the construction industry.
Emmett Russell, International Union of Operating Engineers (labor).	
Title	Director of Safety and Health.
Organization/Interests Represented	Organized construction employees who operate cranes and derricks, and work with such equipment.
Experience	Over 32 years' experience in the crane/construction industry, including ten years in the field as well as over 20 years with IUOE.
Dale Shoemaker, Carpenters International Training Center (labor).	
Organization/Interests Represented	Labor organizations representing construction employees who operate cranes and derricks and who work in conjunction with cranes and derricks.
Experience	Became a crane operator in 1973; served as a rigging trainer for labor organizations since 1986.
William Smith, Maxim Crane Works (lessors/maintenance).	
Title	Corporate Safety/Labor Relations Manager.
Organization/Interests Represented	Crane/Derrick repair and maintenance companies.
Experience	24 years' experience in the crane, rigging, and construction industry, both public and private sectors.
Craig Steele, Schuck & Sons Construction Company, Inc. (employer users).	
Title	President and CEO.
Organization/Interests Represented	Employers/users engaged in residential construction.
Experience	30 years' experience in the construction industry with Schuck & Sons Construction Company, Inc.
Darlaine Taylor, Century Steel Erectors, Inc. (employer users).	
Title	Vice President.
Organization/Interests Represented	Steel Erection/Leased Crane Users.
Experience	19 years with Century Steel Erectors, over 12 years in the construction safety field.
Wallace Vega III, Entergy Corp. (power line owners).	
Organization/Interests Represented	Power line owners.
Experience	35 years' experience in the power line industry.
William J. "Doc" Weaver, National Electrical Contractors Association (employer users).	
Organization/Interests Represented	Electrical contractors engaged in power line construction.
Experience	Over 53 years' electrical construction experience, 37 of which is spent in management positions.
Robert Weiss, Cranes, Inc. and A.J. McNulty & Company, Inc. (employer users).	
Title	Vice President and Project Manager for Safety (respectively).
Organization/Interests Represented	Employers/users engaged in precast concrete erection.
Experience	20 years' experience in the precast and steel erection industry.
Doug Williams, C.P. Buckner Steel Erection (employer users).	
Title	President.
Organization/Interests Represented	Buckner Heavy Lift Cranes.
Experience	32 years' experience in the construction industry.
Stephen Wiltshire, Sports and Public Assembly Group, Turner Construction Corp. (employer users).	
Title	National Safety Director.
Organization/Interests Represented	Employer/users of owned and leased cranes.
Experience	28 years' experience in construction safety.
Charles Yorio, Acordia (Wells Fargo) (insurance).	
Title	Assistant Vice President.
Organization/Interests Represented	Insurance.
Experience	17 years' experience in loss prevention and regulatory compliance.

C–DAC was chaired by a facilitator, Susan L. Podziba of Susan Podziba & Associates, a firm engaged in public policy mediation and consensus building. Ms. Podziba's role was to facilitate the negotiations by:

(1) Chairing the Committee's meetings in an impartial manner;

(2) impartially assisting the members of the committee in conducting discussions and negotiations; and

(3) supervising the taking of minutes and keeping of records and other relevant responsibilities, including the drafting of meeting summaries after each meeting to be reviewed and approved by C–DAC members.

C–DAC first met from July 30 to August 1, 2003. Before addressing substantive issues, the Committee developed ground rules (formally approved on September 26, 2003) that would guide its deliberations. (OSHA–S030–2006–0663–0373). In addition to procedural matters, the ground rules addressed the nature and consequences of the Committee's decision-making. C–DAC agreed that it would make every effort to reach unanimous agreement on all issues. However, if the facilitator determined that unanimous consent could not be achieved, the Committee would consider consensus to be reached when not more than two non-federal members (i.e., members other than the OSHA member) dissented. Under this definition, if OSHA dissented, there would be no consensus.

This definition of consensus reflects the non-federal members' view that Agency support of the Committee's work was essential. The non-federal members believed that, if OSHA dissented, there would be little likelihood that the Committee's work product would eventually be reflected in the final rule. These members wanted to ensure that concerns of the Agency that would prompt it to dissent were instead resolved in the negotiating process.

Under this ground rule, if C–DAC reached a final consensus agreement on some or all issues, OSHA would use the consensus-based language on those issues for which agreement was reached as its proposed standard, and C–DAC members would refrain from providing formal written negative comment on those issues in response to the proposed rule.

The ground rules provide that OSHA may only depart from this aspect of the agreement by either reopening the negotiated rulemaking process or providing to the C–DAC members a detailed statement of the reasons for altering the consensus-based language sufficiently far in advance of publication that the C–DAC members could express their concerns to OSHA. The Committee members could also provide negative or positive public comment in response to those changes. (OSHA–S030–2006–0663–0373).

A tentative list of issues for the Committee to address was published along with the final list of Committee members (68 FR at 39879–90). At its initial meeting, the Committee reviewed and revised the issue list, adding several issues. (OSHA–S030–2006–0663–0372). The Committee met 11 times between July 30, 2003 and July 9, 2004. As the meetings progressed, the Committee reached consensus agreement on various issues and, at the final meeting, reached consensus agreement on all outstanding issues. The Committee's work product, which is the Committee's recommended regulatory text for the proposed rule, is referred to here as the C–DAC Consensus Document. (OSHA–S030–2006–0663–0639). On October 12, 2006, ACCSH adopted a resolution supporting the C–DAC Consensus Document and recommending that OSHA use it as the basis for a proposed standard. (ACCSH 2006–1, Ex. 101x, pp. 248–49).

As noted earlier, OSHA's assent was needed for C–DAC to reach consensus agreement on an issue. Thus, the fact that the Committee reached consensus agreement on all issues means that this proposal reflects OSHA's agreement with the Consensus Document. In the discussion of the various sections of the proposal below, when the Committee's views or conclusions are stated, OSHA agrees with those views or conclusions unless otherwise noted.

In reviewing the Consensus Document to draft this proposed rule, OSHA identified certain problems in the Consensus Document. These range from misnumbering and other typographical/technical errors to provisions that appear to be inconsistent with the Committee's intent or that are worded in a manner that requires clarification. This proposed rule deviates from the Consensus Document where changes were clearly needed to reflect the Committee's intent, or to correct typographical/technical errors. With respect to substantive changes, the Agency has identified and explained them in the portions of this preamble that address the affected provisions.

There are instances where it appears to the Agency that other changes may be needed for several reasons: To conform to the Committee's intent; where the precise form of a change needed to conform to that intent is not clear; or where an aspect of a significant issue appears not to have been considered by C–DAC. In each such instance OSHA has retained the regulatory language used in the Consensus Document but asks for public comment on them.

Numerous Committee members had vast and varied experience in cranes and derricks in construction, which gave them a wealth of knowledge in the causes of accidents and safety issues involving such equipment. In addition, other members had substantial knowledge and experience in other types of subject areas that also related to crane and derrick safety. This is reflected in the summary of their qualifications (see list above).

The members used this knowledge to identify issues that required particular attention and to devise regulatory language that would address the causes of such accidents. Their extensive practical experience in the construction industry and the other industries represented on the Committee helped them to design improvements to the current Subpart N requirements that would be practical and workable. This preamble describes the proposed standard and the Committee's reasons for resolving the various issues in the manner it did.

In examining the causes of crane accidents and devising ways to reduce them, the Committee concluded that incorrect operation was a factor in many accidents. Operating a crane is a complex job requiring skill and knowledge. To operate a crane safely requires a thorough knowledge of the equipment and controls and a complete understanding of the factors that can affect the safety of its operation. The Committee believed that it was essential to address the issue of operator qualification so that accidents resulting from incorrect operation would be reduced.

C–DAC spent considerable time and effort determining how the proposed rule could best ensure that equipment operators are well qualified. C–DAC decided that it was necessary for crane operators to be certified or qualified through a formal process to ensure that they possessed the degree of knowledge necessary to operate their equipment safely. The Committee's reasoning and the details of the qualification/certification process are discussed below in connection with § 1926.1427, *Operator Qualification and Certification.*

Another cause of numerous fatal and serious accidents that C–DAC addressed was equipment making electrical contact with power lines. Although Subpart N currently addresses this issue by requiring equipment to maintain a minimum distance from power lines that depends on the voltage of the line, the Committee identified reasons why the current standard was not preventing the many accidents that continue to occur. The Committee concluded that simply requiring a minimum clearance

distance was not sufficient to eliminate the human error that led to most instances of power line contact and that additional requirements that would help employers identify potential power line hazards and systematic procedures to protect against those hazards were needed to prevent power line contact. See the discussion below under §§ 1926.1407–1411, which deal with the various aspects of power line safety.

As noted above, OSHA's current standard on cranes and derricks, 29 CFR 1926.550, incorporates numerous national consensus standards by reference. The Committee reviewed the most recent versions of these consensus standards. For some issues, the Committee determined that a different approach was warranted (such as in the case of protections against power lines and operator qualification/certification). In many other instances the Committee determined that concepts in the consensus standards were appropriate but that different wording was needed to improve clarity and enforceability, or to be more readable within the structure of the proposed rule.

Where the Committee incorporated consensus standards by reference, it agreed with the concepts, found the structure and wording appropriate, and determined that the incorporation of the provisions would not detract from its goal of producing a readable document. In addition, to avoid encumbering the text with too much length and technical detail that would hinder readability, C–DAC decided to incorporate by reference certain requirements from consensus standards where those requirements addressed highly technical topics, such as welding criteria.

C–DAC also determined that some categories of equipment needed to be addressed differently than others. The proposed standard contains general requirements in §§ 1926.1402–1434 that are appropriate for most types of equipment and workplaces but which contain certain specific exclusions. Sections 1926.1435–1441 each address a specific type of equipment, such as § 1926.1435, *Tower cranes.* Those sections tailor the requirements of the proposed standard to accommodate the unique characteristics of that equipment. They state which of the general provisions in §§ 1926.1402–1434 apply to that type of equipment and which do not. They also include requirements specific to that type of equipment either (as specified) as a substitute for, or in addition to, the general provisions in §§ 1926.1402–1434. In this way, C–DAC ensured that each type of equipment would be subject to requirements appropriate for that equipment.

In drafting some of the provisions in this proposal, the Committee recognized that OSHA would be requiring cranes and derricks to be equipped with operational aids that have not been mandatory in the past. For some types of these aids, the Committee believed it would be impractical to require that cranes and derricks be retrofitted with the devices. In determining whether to propose that such requirements be prospective only, the Committee considered the degree of importance of the device to safety, whether the devices are required under industry consensus standards and, if so, the date they were first required under such standards. Recognizing that manufacturers generally follow industry consensus standards, C–DAC drafted these provisions to require equipment manufactured after the date an operational aid was required by an industry consensus standard to be equipped with the device.

In situations where no industry consensus standard required that cranes or derricks be equipped with a certain operational aid or fall protection device, the Committee decided to allow sufficient lead time for manufacturers to install the aids and devices. The Committee proposed to require some aids and devices on equipment manufactured one year after the effective date of this standard. In other cases, the Committee specified that the aids and devices would be required on equipment manufactured after January 1, 2008.

It is now evident that the standard will not be finalized by that date and that keying requirements to that date will not afford employers the lead time intended by the Committee. To conform this proposed standard to the Committee's intent, and to ensure that industry has sufficient lead time to equip cranes and derricks with the required aids and devices, OSHA is substituting "more than one year after the effective date of this standard" for "January 1, 2008" wherever that date appears in the Committee's draft.

C. Hazards Associated With Cranes and Derricks in Construction Work

OSHA estimates that 89 crane-related fatalities occur per year in construction work. The causes of crane-related fatalities were recently analyzed by Beavers, *et al.* J.E. Beavers, J.R. Moore, R. Rinehart, and W.R. Schriver, "Crane-Related Fatalities in the Construction Industry," 132 Journal of Construction Engineering and Management 901 (Sept. 2006) (OSHA–2007–0066–0012). The authors searched OSHA's Integrated Management Information System (IMIS) database for all fatal accidents for 1997–2003 investigated by OSHA involving cranes in the construction industry. By searching the database for cases using the key words "crane," "derrick," or "boom," they identified 381 IMIS files for the covered years in the federal program states, which include states with about 57% of all workers throughout the country. The authors requested the case files from OSHA so that they could confirm that a crane or derrick was involved in the fatality. Of the 335 case files that OSHA provided, the authors identified 125 (involving 127 fatalities) as being crane or derrick related. From these files, they determined that the percentages of fatalities caused by various types of incident are in Table 2 as follows:

TABLE 2—THE CAUSES OF FATALITIES DURING THE PERFORMANCE OF HOISTING ACTIVITIES

	Percent
Struck by load (other than failure of boom/cable)	32
Electrocution	27
Crushed during assembly/disassembly	21
Failure of boom/cable	12
Crane tip-over	11
Struck by cab/counterweight	3
Falls	2

A study by Suruda *et al.* examined the causes of crane-related deaths for the 1984–1994 period. A. Suruda, M. Egger, & D. Liu, "Crane-Related Deaths in the U.S. Construction Industry, 1984–94," The Center to Protect Workers' Rights (Oct. 1997) (OSHA–2007–0066–0013). The authors examined OSHA IMIS data to identify the number of fatal accidents involving cranes and determine their causes. For the years in question, they found 479 accidents involving 502 fatalities. In the worst year, 1990, 70 deaths occurred.

The authors noted some limitations in the data they examined: Data for California, Michigan, and Washington state were not available for 1984–1989; the proportion of fatal accidents that OSHA and the states that enforce their own state plans investigate is unknown; and some of the investigation reports were not sufficiently detailed to allow the cause of the accident or the type of crane involved to be determined.

The Suruda study determined that the number and the percentage of fatalities from various causes are in Table 3 as follows:

TABLE 3—THE CAUSES OF CRANE INCIDENTS

Electrocution	198 (39%)
Crane assembly/disassembly	58 (12%)
Boom buckling/collapse	41 (8%)
Crane upset/overturn	37 (7%)
Rigging failure	36 (7%)
Overloading	22 (4%)
Struck by moving load	22 (4%)
Accidents related to manlifts	21 (4%)
Working within swing radius of counterweight	17 (3%)
Two-blocking	11 (2%)
Hoist limitations	7 (1%)
Other causes	32 (6%)

The proposed standard addresses the major causes of the equipment related fatalities identified in the Beavers and Suruda studies. The following is a brief synopsis of the sections in this proposed standard that address them; each proposed section is explained in detail later in this preamble.

The electrocution hazard is addressed by proposed §§ 1926.1407–1411, which deal with various aspects of power line safety. These sections contain requirements designed to prevent equipment from contacting energized power lines. The proposed rule delineates systematic, reliable procedures and methods that must be used to prevent a safe clearance distance from being breached. If maintaining the safe clearance distance is infeasible, additional protections would be required, including grounding the equipment, covering the line with an insulating sleeve, and using insulating links and nonconductive tag lines.

These procedures and methods are supplemented by requirements for training the operator and crew in power line safety and the requirement for operator qualification and certification in proposed § 1926.1427. C–DAC concluded that compliance with these training and certification requirements will not only reduce the frequency of power line contact but will give the workers the knowledge they need to help avoid injury in the event such contact does occur.

Fatalities that involve employees being struck or crushed during assembly/disassembly are addressed in proposed §§ 1926.1403–1406. These sections require certain specific safe practice procedures to be followed and for the employer to address a list of specific hazards. Also, assembly/disassembly must be supervised by an individual who is well qualified to see that these requirements are properly implemented.

As the studies show and the Committee's experience confirms, many disassembly accidents occur when sections of lattice booms unexpectedly move and strike or crush an employee who is disassembling the boom. The proposal addresses this scenario in proposed § 1926.1404(f) by prohibiting employees from being under the boom when pins are removed unless special precautions are taken to protect against boom movement.

Accidents resulting from boom or cable failure are addressed in a number of provisions. For example, the proposed standard includes requirements for: Proper assembly procedures (proposed § 1926.1403); boom stops to prevent booms from being raised too far and toppling over backwards (proposed § 1926.1415, *Safety devices*); a boom hoist limiting device to prevent excessive boom travel, and an anti-two-block device, which prevents overloading the boom from two-blocking (proposed § 1926.1416, *Operational aids*). Also, the inspection requirements (proposed § 1926.1412) are designed so that a structural deficiency in a boom will be detected and addressed before an accident occurs. Cable failure will be avoided by compliance with proposed sections such as § 1926.1413, *Wire rope—inspection,* § 1926.1414, *Wire rope—selection and installation criteria,* and the provision in proposed § 1926.1416 requiring two-block protection.

Crane tip-over is caused by factors such as overloading, improper use of outriggers and insufficient ground conditions. Proposed § 1926.1417, *Operations,* includes provisions designed to prevent overloading. That section prohibits the equipment from being operated in excess of its rated capacity and includes procedures for ensuring that the weight of the load is reliably determined and within the equipment's rated capacity. Proposed § 1926.1404(q) has requirements for outrigger use designed to ensure that outriggers are properly set when they are needed to provide stability when a load is lifted. Proposed § 1926.1402 has requirements designed to ensure sufficient ground conditions.

The provisions on training and operator qualification and certification will also prevent this type of accident by ensuring that the operator is sufficiently knowledgeable and skilled to recognize situations when the crane may be overloaded and to either require that the situation be corrected or refuse to proceed in accordance with proposed § 1926.1418, *Authority to stop operation.*

Fatalities that result from workers being struck by the cab or counterweights will be avoided by compliance with proposed § 1926.1424, *Work area control.* That section would require that employees who must work near equipment with a rotating superstructure be trained in the hazards involved, that employers mark or barricade the area within the area covered by the rotating superstructure, and that the operator be alerted whenever an employee must enter that area and not rotate the superstructure until the area is clear. Protection against being struck by a counterweight during assembly/disassembly is provided by proposed § 1926.1404(h)(9), which would require the assembly/disassembly supervisor to address this hazard and take steps when necessary to protect workers against that danger.

The proposal addresses a number of types of equipment failure that can result in the load striking a worker. Such accidents are directly addressed by proposed § 1926.1425, *Keeping clear of the load,* and § 1926.1426, *Free fall/controlled load lowering.* In addition, improved requirements in proposed §§ 1926.1419–1422 for signaling will help avoid load struck-by accidents caused by miscommunication.

Improper operation, including, for example, the failure to understand and compensate for the effects of factors such as dynamic loading, can also cause employees to be struck by a load. Such incidents will be reduced by compliance with proposed § 1926.1427, *Operator qualification and certification* and proposed § 1926.1430, *Training.* Other provisions, such as those for safety devices and operational aids (proposed § 1926.1415 and § 1926.1416), and the requirement for periodic inspections in proposed § 1926.1412, will also reduce the number of this type of accident.

Protection against falling from equipment is addressed by proposed § 1926.1423, *Fall protection.* That section would require new equipment to provide safe access to the operator work station by the use of devices such as steps, handholds, and grabrails. Certain new lattice boom equipment would have to be equipped with boom walkways. There are also fall protection provisions tailored to assembly and disassembly work and to other work. Proposed § 1926.1431, *Hoisting personnel,* addresses fall protection when employees are being hoisted.

OSHA has investigated numerous equipment accidents that have resulted in fatalities from the causes listed in the Beavers and Suruda studies. Below is a discussion of examples from OSHA's IMIS accident investigation reports from recent years that illustrate some of the types of accidents that occur when using the types of equipment covered by

this proposed standard and the ways that this proposed standard would prevent such incidents. These examples illustrate the limitations of the current standard and highlight the need for a revised standard that will address the causes of the equipment accidents that continue to kill and injure construction workers.

1. February 16, 2004: 4 fatalities, 4 injuries. A launching gantry collapsed and fatally injured 4 workers and sent 4 other workers to the hospital. The launching gantry was being used to erect pre-cast concrete segments span by span. The manufacturer required that the rear legs and front legs be properly anchored to resist longitudinal and lateral forces that act on the launching gantry. The legs of the launching gantry were not properly anchored. (OSHA–2007–0066–0017).

OSHA believes that this type of accident would be prevented by compliance with the provisions of this proposed standard for assembling equipment. Proposed § 1403 requires that equipment be assembled in compliance with manufacturer procedures or with alternative employer procedures (see proposed § 1406) designed, among other things, to prevent the equipment from collapsing. In addition, under proposed § 1404, assembly must be conducted under the supervision of a person who understands the hazards associated with an improperly assembled crane and is well-qualified to understand and comply with the proper assembly procedures.

2. January 30, 2006. 1 fatality. An employee was crushed by the lower end section of the lattice boom on a truck mounted crane while working from a position underneath the boom to remove the 2nd lower pin. When the 2nd lower pin was removed the unsecured/uncribbed boom fell on the employee. (OSHA–2007–0066–0017.1)

Proposed § 1926.1404(f) would prevent this type of accident by generally prohibiting employees from being under the boom when pins are removed. In situations where site constraints require an employee to be under the boom when pins are removed, the employer must implement other procedures, such as ensuring that the boom sections are adequately supported, to prevent the sections from falling onto the employee.

3. July 23, 2001: 1 fatality. Employee failed to extend the outriggers before he extended the boom of a service truck crane to lift up some pipes. As he extended his boom, the crane tipped over on its side and an employee was struck on the head by the hook block as he stood near the rear of the truck. (OSHA–2007–0066–0017.10)

This type of accident would be prevented by compliance with proposed § 1926.1404(q), which contains several provisions designed to ensure that outriggers are deployed properly before lifting a load. In addition, the operator qualification and certification requirement of proposed § 1926.1427, which is intended to ensure that operators understand and follow the safety requirements for the equipment they are operating, would help prevent this type of accident.

4. March 8, 1999. 1 fatality. Some employees were using a mobile crane to maneuver a load of steel joists. The crane contacted a 7,200-volt overhead power line, electrocuting an employee who was signaling and guiding the load. The crane operator jumped clear and was not injured. (OSHA–2007–0066–0017.11)

Section 1926.1408 includes provisions that would prevent this type of accident. First, it would require the use of "encroachment prevention" measures designed to prevent the crane from breaching a safe clearance distance from the power line. Second, if tag lines are used to guide the load, they would have to be non-conductive. Third, if maintaining the normal clearance distance were infeasible, a number of additional measures would have to be used. One of those additional measures is the use of an insulating link between the end of the load line and the load.

These measures would protect the employee guiding the load in several ways, including the following: First, they would reduce the chance that the crane would come into electrical contact with the power line. Second, if the employee were using a tag line to guide the load, it would have to be non-conductive, which would protect the employee if the load became energized.

If the crane were intentionally operated closer than the normal clearance distance, and the employer complied with the additional protective measures required in that circumstance, an insulating link would be in place. In such a case, even if there was a failure of the encroachment prevention measures and electrical contact resulted, the insulating link would prevent the load from becoming energized and prevent the employee guiding the load from being electrocuted.

5. August 21, 2003. 3 fatalities. A crane operator and two co-workers were electrocuted when a truck crane's elevated boom contacted a 7,200 Volt uninsulated primary conductor 31 feet from the ground. When the operator stepped from the cab of the truck he created a conduction pathway to the ground through his right hand and right foot, causing him to be electrocuted. A co-worker attempted to revive the incapacitated crane operator with cardio-pulmonary resuscitation ("CPR") while a third co-worker contacted 911 and returned to the incident location. When the third co-worker simultaneously touched the energized truck crane and the back of his co-worker performing CPR, the resulting pathway created a conduction pathway through the workers, electrocuting them all. (OSHA–2007–0066–0017.12).

This type of accident would be avoided by compliance with the proposed rule. First, as explained in the previous electrocution accident examples, proposed § 1926.1408 is designed to ensure that a minimum safe distance from the power line is maintained, which would prevent the equipment from becoming energized. Also, when working closer than the normal minimum clearance distance, the crane would have to be grounded; that would reduce the chance of an electrical pathway through the employees in this type of scenario.

In addition, proposed § 1926.1408(g) would require the operator to be trained to remain inside the cab unless there is imminent danger of fire or explosion. The operator must also be trained in the danger of simultaneously touching the equipment and the ground, as he did in this case, and in the safest means of evacuating the equipment. The crane's remaining crew must be trained to avoid approaching or touching the equipment. The required training would be reinforced by the electrocution warnings that must be posted in the cab and on the outside of the equipment.

6. September 28, 1999: 1 fatality. A 19-year old electrical instrument helper was at a construction site that was on a manufacturing company's property. That morning a contractor had positioned a 50-ton hydraulic crane in an open area that consisted of compacted fill material. This was the only location that the crane could be situated because the receiving area for the equipment was very close to the property border. The crane was moving large sections of piping to a new location when it overturned and struck the helper.

The crane's outriggers were set but matting was placed only under the northwest outrigger pad. At the start of the construction project, the manufacturing company cleared the site and had fill material brought in. The site was originally swamp and large amounts of fill had been brought in. (OSHA–2007–0066–0017.13).

Proposed § 1926.1402, *Ground conditions*, is designed to prevent this type of accident. Under that paragraph, care must be taken to ensure that the surface on which a crane is operating is sufficiently level and firm to support the crane in accordance with the manufacturer's specifications. A contributing factor to this accident may have been a lack of clarity regarding responsibility for adequate ground conditions due to the fact that the employer who operated the crane did not control the ground conditions on the property.

Section 1926.1402 would impose specific duties on both the entity responsible for the project (the controlling entity) and the entity operating the crane to ensure that the crane is adequately supported. It places responsibility for ensuring that the ground conditions are adequate on the controlling entity while also making the employer operating the crane responsible for calling any deficiency to the controlling entity's attention and having it corrected before using the crane.

7. June 17, 2006: 1 fatality. A crane was being used on a barge to install a dock in a waterway. Employees were preparing to move the barge. A spud pipe, which anchored the barge, was being raised by the barge-mounted crane when the hoisting cable broke, dropping the headache ball and rigging onto one of the employees. (OSHA–2007–0066–0017.3).

This type of accident can have various causes. An incorrectly selected wire rope (one that has insufficient capacity), use of a wire rope that is damaged or worn to the point where it needs to be replaced, or two-blocking, in which the headache ball is forced against the upper block, can each cause this type of failure. The provisions of proposed §§ 1926.1413 and 1414 on wire rope inspection, selection, and installation are designed to ensure that appropriate wire rope is installed, inspected and removed from service when its continued use would be unsafe. Section 1926.1416, *Operational aids*, contains provisions designed to protect against two-blocking.

8. July 13, 1999: 3 fatalities. Three employees were in a personnel basket 280 feet above the ground. They were in the process of guiding a large roof section, being lifted by another crane, into place. Winds gusting to 27 miles per hour overloaded the crane holding the roof section; that crane collapsed, striking the crane that was supporting the personnel basket, causing the boom to fall. All three employees received fatal crushing injuries. (OSHA–2007–0066–0017.4 & OSHA–2007–0066–0018).

This type of accident would be prevented by compliance with proposed § 1926.1417(n), which requires the competent person in charge of the operation to consider the effect of wind and other adverse weather conditions on the equipment's stability and rated capacity. In addition, proposed § 1926.1431, *Hoisting personnel*, requires that when wind speed (sustained or gust) exceeds 20 mph, personnel are prohibited from being hoisted by a crane unless a qualified person determines it is safe to do so.

9. November 7, 2005: 1 fatality. A construction worker was crushed between the outrigger and the rotating superstructure of a truck crane. He apparently tried to retrieve a level and a set of blueprints which were laying on the horizontal member of one of the outriggers at the same time the operator began to swing the boom. (OSHA–2007–0066–0017.5).

This type of accident would be avoided by compliance with proposed § 1926.1424, *Work area control*. That section generally requires that employers erect barriers to mark the area covered by the rotating superstructure to warn workers of that danger zone. In addition, employees who must work near equipment with a rotating superstructure must be trained in the hazards involved. If an employee must enter the marked area, the crane operator must be alerted and not rotate the superstructure until the area is clear.

10. March 19, 2005: 2 fatalities and 1 injury. During steel erection operations, a crane was lifting three steel beams to a parking garage under construction. The crane tipped over and the boom collapsed. The boom and attached beams struck concrete workers next to the structure. Two were killed and one injured. The accident apparently occurred as a result of overloading the crane. (OSHA–2007–0066–0017.6).

Overloading a crane can cause it to tip over. When it does, the load or crane structure can strike and fatally injure workers who may be some distance from the crane. Proposed § 1926.1417, *Operations*, includes provisions designed to prevent overloading. That section prohibits the equipment from being operated in excess of its rated capacity and includes procedures for ensuring that the weight of the load is reliably determined and within the equipment's rated capacity.

The provisions on operator training and certification/qualification will also help prevent this type of accident by ensuring that the operator is sufficiently knowledgeable and skilled in recognizing conditions that would overload the crane.

11. December 7, 2005. 1 fatality. Two cranes were being used to lower a concrete beam across the river. During the lowering process, the west side of the beam became lower than the east side. The consequent shifting of the load's weight to the west side crane caused that crane to tip over. The west end of the beam went into the river and the east end fell on the bank and a support mat, causing a flag person to be thrown into the beam. (OSHA–2007–0066–0017.7).

This type of accident would be prevented by compliance with proposed § 1926.1432, *Multiple crane/derrick lifts*. That section specifies that when more than one crane will be supporting a load, the operation must be performed in accordance with a plan developed by a qualified person. The plan must be designed to ensure that the requirements of this proposed standard will be met and must be reviewed with all individuals who will be involved in the process. Moreover, the lift must be supervised by an individual who qualifies as both a competent person and a qualified person as defined in this standard.

In the type of scenario involved in this accident, a plan that would comply with this requirement would, for example, include a determination of the degree of level that is needed to be maintained in order to prevent either crane from being overloaded. In addition, such a plan would include a system of communications and a means of monitoring the operation designed to ensure that the cranes' operation was properly coordinated.

12. May 7, 2004: 1 fatality. An employee, a rigger/operator-in-training, was in the upper cab of a 60-ton hydraulic boom truck crane to set up and position the crane boom prior to a lift. The crane was equipped with two hoists, a main line and auxiliary. The main hoist line had a multi-sheave block and hook and the auxiliary line had a 285 pound ball and hook. When the employee was extending the hydraulic boom, a two-block condition occurred with the auxiliary line ball striking the auxiliary sheave head, knocking the sheave and ball from the boom. The employee was struck in the head and killed by the falling ball. (OSHA–2007–0066–0017.8).

This type of accident would be prevented by compliance with proposed § 1926.1416, *Operational aids*, which requires protection against two-blocking. A hydraulic boom crane, if manufactured after February 28, 1992, would have to be equipped with a

device that automatically prevents two-blocking.

Also, the operator-in-training in this case apparently did not understand that extending a hydraulic boom would move the sheave head toward the ball and could cause two-blocking. The proposed standard, through proposed § 1926.1427(a) and (f), would avoid having inexperienced operators make this type of mistake by prohibiting an operator-in-training from operating a crane without supervision and without first having had enough training to enable the operator to perform the assigned task safely.

13. April 26, 2006: One fatality. The deceased employee was part of a framing crew which was in the process of installing sheathing for a roof. A bundle of plywood sheathing was being hoisted by a crane to a location on the roof. As the crane was positioning the bundle of sheathing above its landing location, the load hoist on the crane free spooled, causing an uncontrolled descent of the load. The employee was under the load, preparing to position it to its landing spot, when the load fell and crushed him. (OSHA–2007–0066–0017.9).

This type of accident would be prevented by compliance with § 1926.1426, *Free fall and controlled load lowering*, which prohibits free fall of the load line hoist and requires controlled load lowering when an employee is directly under the load.

As discussed below in the *Preliminary Economic Analysis*, OSHA finds that construction workers suffer 89 fatal injuries per year from the types of equipment covered by this proposed standard. Of that number, OSHA estimates that 53 would be avoided by compliance with the proposed standard. In addition, OSHA estimates that the proposed standard would prevent 155 non-fatal injuries each year. Based on all of the available evidence and on the collective expertise of the members of C–DAC, OSHA preliminarily finds that construction workers are faced with a significant risk of death and injury resulting from equipment operations and that the risk would be substantially reduced by compliance with this proposed standard.

During the SBREFA process, several Small Entity Representatives expressed concern that the C–DAC proposal was so long and complex that small businesses would have difficulty understanding it and complying with it. The SBREFA Panel recommended that OSHA solicit public comment on how the rule could be simplified and made easier to understand without creating ambiguities. OSHA welcomes public comment on this issue.

III. The SBREFA Process

Before proceeding with a proposed rule based on the C–DAC Consensus Document, OSHA was required to comply with the Small Business Regulatory Enforcement Fairness Act of 1996, 5 U.S.C. 601 *et seq.* (SBREFA). This required OSHA to draft an initial regulatory flexibility analysis that would evaluate the potential impact of the rule on small entities (defined as small businesses, small governmental units, and small nonprofit organizations) and identify the type of small entities that might be affected by the rule. In accordance with SBREFA, OSHA then convened a Small Business Advocacy Review Panel ("Panel") composed of representatives of OSHA, the Office of Management and Budget, and the Office of Advocacy of the Small Business Administration. Individuals who were representative of affected small entities (Small Entity Representatives, or "SERs") were then identified for the purpose of obtaining advice and recommendations from those individuals about the potential impacts of the proposed rule.

OSHA provided the SERs with the C–DAC consensus document and the draft regulatory flexibility analysis and afforded them the opportunity to submit written comments on those documents. The Agency also drafted questions asking them their views on the specific aspects of the C–DAC document it thought would be of most concern to small entities.

The Panel conducted two conference calls with the SERs in which the SERs presented their views on various issues. After reviewing the SERs' oral and written comments, on October 17, 2006, the Panel submitted its report summarizing the requirements of the C–DAC proposal, the comments received from the SERs, and presenting its findings and recommendations. (OSHA–S030A–2006–0664–0019). In its findings and recommendations, the Panel identified issues that it believed needed particular attention and analysis in the proposal or for which it believed OSHA should explicitly solicit public comment.

In the discussion that follows, OSHA addresses each of the Panel's findings and recommendations in the section pertaining to the issue involved. Table 4 summarizes the Panel's recommendations and the portions of this preamble in which they are discussed.

TABLE 4—SBREFA PANEL RECOMMENDATIONS AND OSHA RESPONSES

SBREFA panel recommendation	OSHA response
The Panel recommends that OSHA provide full documentation for how it estimated the number of affected small entities and all other calculations and estimates provided in the PIRFA.	See the Preliminary Economic Analysis (PEA), in section V.B. of this **Federal Register** notice.
The Panel recommends that OSHA reexamine its estimate of crane use in home building, the coverage of crane trucks used for loading and unloading, and the estimates of the number of jobs per crane. Changes in these estimates should be incorporated into the estimates of costs and economic impacts.	See the Preliminary Economic Analysis (PEA), in section V.B. of this **Federal Register** notice.
The Panel recommends that OSHA review its estimates for the direct costs of operator certification and seek comment on these cost estimates.	See the Preliminary Economic Analysis (PEA), in section V.B. of this **Federal Register** notice.
The Panel recommends that OSHA carefully examine certain types of impact that could result from an operator certification requirement, including reports of substantial increases in the wages of operators; the possibility of increased market power for firms renting out cranes; and loss of jobs for existing operators due to language, literacy, or knowledge problems; and seek comment on these types of impacts.	See the Preliminary Economic Analysis (PEA), in section V.B. of this **Federal Register** notice.
The Panel recommends that OSHA consider studying the impacts of the implementation of operator certification in California.	See the Preliminary Economic Analysis (PEA), in section V.B. of this **Federal Register** notice.

Section 1427 Operator Qualification and Certification

Proposed § 1926.1427 addresses the safety concerns created by under-qualified crane operators. In the Committee's experience, human error resulting from insufficient operator knowledge and capability is a significant cause of fatal crane/derrick accidents. It concluded that a verified testing process is essential for ensuring sufficient knowledge and capability of crane/derrick operators and would be an effective and efficient way to reduce these accidents.

The Committee's view was based on the extensive collective experience of the Committee members. Members expressed the belief that crane/derrick safety depends heavily on the operator having the knowledge and ability to implement safe operation practices. For example, an operator who does not know how to properly use load charts could miscalculate the capacity of the crane and inadvertently overload the equipment. An operator who lacks the knowledge and skill to control and manipulate a load could lose control of it, causing other employees to be struck by the load or the equipment.

In addition, knowledge and skill are needed to prevent electrical contact with power lines (see the discussion above regarding proposed §§ 1926.1407–1926.1411). For example, an operator who does not understand an operational/performance characteristic such as dynamic loading may inadvertently allow the boom to get too close to a power line. This could occur where the operator failed to account for the fact that, under certain conditions, the boom would flex and so continue to move towards the line after the operator had stopped the superstructure's rotation.

Similarly, understanding and being able to minimize such effects is important in situations such as blind picks, where the operator will be relying on information relayed to him/her by a signal person.

The Committee considered whether it would be sufficient to set testing criteria without a third-party (that is, independent) verification mechanism, and determined that such an approach was not likely to be effective in ensuring sufficient operator qualifications. During the Committee's deliberations, members expressed a concern that testing conducted without a check on the quality of the test, with respect to both its content and administration, has been ineffective in ensuring that crane operators are qualified to operate the equipment safely. Members noted that operator "certification" cards are easily obtained from various Internet sites without having to pass a credible test. They also noted that the current OSHA standards, which require employers to instruct employees on the hazards involved with crane operation, and require the employer to permit only those employees qualified by training or experience to operate equipment,[63] but do not require testing verified by a third party, have been generally ineffective in ensuring an adequate degree of consistency with respect to crane operator knowledge and ability. The Committee concluded that significant advances in crane/derrick safety would not be achieved unless such testing was required.

The Committee was aware that testing of equipment operators by an impartial party has been used in the past to prevent fatal and other serious accidents that result when operators lack the knowledge and skills needed to operate safely. An example is the Department of Transportation's requirements for over-the-road commercial drivers' licenses ("CDL"). These are designed to reduce the incidence of serious accidents caused by unqualified drivers of vehicles such as trucks and buses. These requirements, codified at 40 CFR part 383, require drivers of commercial motor vehicles to have state licenses that are issued in accordance with federal standards for qualification, training, and testing. To receive a license, the driver must pass knowledge and skills tests administered either by the state or by a third party whose examiners meet the same qualification and training standards as state examiners. 40 CFR 383.75(a).

The Committee's view of the importance of independent testing is further buttressed by a study conducted over a 34-year period (1969–2002), by the Construction Safety Association of Ontario. (OSHA–2007–0066–0009). The study showed a substantial decrease in crane and rigging fatalities in Ontario beginning in 1979, when mandatory training and certification requirements for Ontario crane operators went into effect.

The Ontario system requires prospective or current crane operators (referred to in Ontario as "hoisting engineers") to either successfully complete an apprenticeship program or demonstrate sufficient previous experience before seeking certification as a hoisting engineer. The apprenticeship program includes in-school training in a number of topics determined by the Ministry of Education, a practical examination administered at Ministry-designated sites, and a written examination administered by the Ministry. Upon passing this examination and proving completion of the requisite work hours, an apprentice receives a certificate of qualification as one of three types of hoisting engineer from the Ministry. (OSHA–2007–0066–0010).

Hoisting engineers already qualified elsewhere must also obtain a certification from the Ministry to operate cranes in the province. These candidates must sit for the written examination and complete the practical skills assessment required for qualification of apprentices, but may demonstrate sufficient previous experience instead of completing the number of work/training hours required by the apprenticeship program, to receive a certificate of qualification from the Ministry in one of the three hoisting engineer categories. (OSHA–2007–0066–0011).

In the ten year period from 1969 through 1978, before Ontario's requirements went into effect, 85 Ontario construction workers suffered crane and rigging fatalities, amounting to 8.5 per year, or 19.8% of all construction fatalities in Ontario. In the 24 year period from 1979 through 2002, there were 51 crane and rigging fatalities, or slightly more than two per year. For this period, crane and rigging fatalities equaled 9.6% of all Ontario construction fatalities. In the 12-year period from 1991 through 2002, the total number of crane and rigging fatalities was 9, or fewer than one per year. During this period, crane and rigging fatalities amounted to 4.1% of total construction fatalities. (OSHA–2007–0066–0009).

Proposed § 1926.1427 would afford employers several options for ensuring that operators have obtained sufficient knowledge and ability. These options are designed to provide employers flexibility for meeting the proposed requirement and to accommodate the needs of the U.S. military.

Paragraph 1427(a)

As drafted by C–DAC, proposed paragraph (a) would have required the employer to ensure that the operator of any equipment covered under § 1926.1400 is either qualified or certified to operate the equipment in accordance with the provisions of this section or is operating the equipment

[63] Section 1926.20(b)(4) states that "the employer shall permit only those employees qualified by training or experience to operate equipment and machinery"; § 1926.21(b)(2) states that "the employer shall instruct each employee in the recognition and avoidance of unsafe conditions.* * *"

during a training period. OSHA notes, however, that C–DAC provided for exceptions to the general rule for operator qualification/certification in proposed §§ 1436, *Derricks;* 1926.1440, *Sideboom cranes;* and 1926.1441, *Equipment with a rated hoisting/lifting capacity of 2,000 pounds or less.* To make proposed § 1926.1427(a) reflect the exceptions provided in these sections, OSHA has added the following language to proposed § 1926.1427(a):

> Exceptions: Operator qualification or certification under this section is not required for operators of derricks (see § 1926.1436), sideboom cranes (see § 1926.1440), and equipment with a rated hoisting/lifting capacity of 2,000 pounds or less (see § 1926.1441).

Paragraph 1427(b) Option 1: Certification by an Accredited Crane/Derrick Operator Testing Organization

Proposed paragraph (b) sets out Option 1, in which the employee becomes certified to operate equipment of a certain type and capacity by passing an examination administered by an accredited testing organization. Certification under this option would be "portable," which means that any employer covered by the proposed standard could meet the requirements of proposed § 1926.1427 by using an operator who had this certification. These certifications would be valid for five years.

Proposed section § 1926.1427(b) incorporates a number of safeguards to ensure that the Option 1 certification could be relied upon by any employer to meet the requirements of § 1926.1427, and adequately establishes the employee's ability to operate the types and capacities of crane for which he/she is certified. The first of these safeguards is proposed § 1926.1427(b)(1)(i), which would require that the testing organization be accredited by a nationally recognized accrediting agency.

As defined in § 1926.1401, a "nationally recognized accrediting agency" is "an organization that, due to its independence and expertise, is widely recognized as competent to accredit testing organizations." The Agency notes that, under this definition, new accrediting organizations would meet this definition upon establishing a national reputation based on independence, use of widely recognized criteria, and demonstrated competence in applying those criteria.

For a testing organization to be accredited, the accrediting agency would have to determine that the testing organization meets industry recognized criteria for written testing materials, practical examinations, test administration, grading, facilities/equipment and personnel.

In its deliberations, the Committee expressed concern about the need for independent evaluation of certification programs. It believed such evaluation is necessary to ensure that the certification programs are adequately and consistently applying the requisite criteria for safe crane operation when testing operators. This accreditation would ensure that the testing procedures would accurately measure whether the operator has met the knowledge and skill criteria specified in proposed § 1926.1427(j) (discussed below).

Under proposed § 1926.1427(b)(1)(v), the accreditation would be required to be reviewed every three years, to ensure continuing quality of testing materials and administration. The Committee believed that an entity that meets the proposed definition for a nationally recognized accrediting agency ("an organization that, due to its independence and expertise, is widely recognized as competent to accredit testing organizations"), would have both the expertise and independence needed to provide reliable assurance that a testing organization meets the proposed standard's criteria.

The use of a nationally recognized accrediting agency to provide an independent, authoritative assurance of a testing organization's competence is a well-established practice. For example, for a number of years, the National Commission for Certifying Agencies (NCCA), the accreditation body of the National Organization for Competency Assurance (NOCA), has accredited testing organizations in a wide variety of fields, including those that provide crane operator certification. (OSHA–2007–0066–0021). Also, in 2003, the American National Standards Institute began accrediting personnel certification entities. (OSHA–2007–0066–0022).

Another safeguard is in proposed § 1926.1427(b)(1)(ii)(A), under which a testing organization would be required to administer both written and practical tests addressing the criteria set forth in proposed § 1926.1427(j). The Committee believed that operator ability cannot be assessed reliably unless both written and practical tests are used. In its view, operator ability depends both on knowledge of a variety of subjects, which the written test would address, and the ability to apply that knowledge, which would be addressed by the practical test.

Proposed paragraph 1427(b)(1)(ii)(B) would require that different levels of certification be provided, based on varying equipment capacities and types. This proposed requirement is designed to ensure that the extent of knowledge and skill required is commensurate with the type and capacity of equipment the employee operates. For example, an employee who only operates a hydraulic truck crane would not need to also have the additional knowledge and skills necessary to operate a lattice boom crawler crane. Similarly, an employee who operates only a 22 ton capacity hydraulic truck crane would not need to also have the additional knowledge and skills necessary to operate a 300 ton hydraulic truck crane.[64]

In its deliberations, the Committee determined that requiring the certification to be model-specific would be unnecessarily restrictive, and instead agreed on the term "type." In the SBREFA Panel Report, the Panel recommended that OSHA solicit public comment on whether the term "type" is sufficiently clear for this purpose. OSHA requests public comment on whether this term is appropriate, whether it needs to be defined (and if so, what that definition should be),[65] and suggestions as to what other terms may be better.

During the SBREFA process, several SERs described situations in which an operator is very knowledgeable and skillful with respect to one particular model of crane, but has very limited knowledge and ability regarding other models and types of cranes. These SERs were concerned that such operators would be unable to obtain a certification based on equipment capacity and type. They believe that, since these operators are well qualified to operate a particular crane model, there should be a mechanism for them to become certified to operate that model. The Panel recommended that OSHA consider and solicit public comment on expanding the levels of certification so as to allow an operator to be certified on a specific brand's model of crane. Consistent with the Panel's recommendation, OSHA seeks public comment on this issue.

The SBREFA Panel also received comments from some SERs suggesting that the standard should accommodate crane operators who were fully capable

[64] Note that certification on a more complex and/or higher capacity piece of equipment would typically qualify an operator to operate less complex/lower capacity equipment of the same type. For example, an operator certified for a 300 ton hydraulic truck crane would not need a separate certification to operate a 22 ton hydraulic truck crane.

[65] One possible approach, referred to by the SBREFA Panel, would define "type" by using the categories of equipment represented in Figures 1–10 of the ASME B30.5–2004 standard.

of operating particular equipment in a limited set of circumstances but who would be unable to pass certification tests that required knowledge and abilities beyond those circumstances. The Panel recommended that OSHA consider and solicit public comment on expanding the levels of operator qualification/certification to allow such operators to be certified for a specific, limited type of circumstance defined by a set of parameters that, taken together, would describe an operation characterized by simplicity and relatively low risk. In response to the Panel's recommendation, OSHA requests public comment on whether such parameters could be identified in a way that would result in a clear, easily understood provision that could be effectively enforced.

Proposed paragraph 1427(b)(1)(iii) would require that the testing organization have procedures for operators to re-apply and be re-tested in the event an applicant fails a test. This would help ensure that if the employee initially failed to pass the test, the employee would be able to retake the test and still have the opportunity to obtain the certification.

Proposed paragraph 1427(b)(1)(iii) would also require that the testing organization have procedures for operators to re-apply and be re-tested in the event an operator was decertified. This would similarly help protect an employer's expenditures for training and certification testing.

Proposed paragraph 1427(b)(1)(iv) would require that the testing organization have procedures for re-certifying operators designed to ensure that the operator continues to meet the requirements of proposed § 1926.1427(j). The Committee believed that testing for recertification would not need to be as rigorous as for initial certification. This proposed provision was therefore included so that recertification procedures appropriate for those who have already been certified would be available.

Under proposed paragraph (b)(2), the certification would be "portable," which means that any employer of an operator certified under Option 1 would meet the requirements of proposed § 1926.1427 with respect to that operator.[66] The Committee believed that accredited testing organizations could be relied upon to consistently adhere to the criteria in § 1926.1427, since they would be fully independent and their business interest would depend on their continued accreditation. Therefore, it would be appropriate for all employers to be able to rely on their certifications.

Under proposed § 1926.1427(b)(3), the certification would be valid for five years. The Committee believed that this is an appropriate length of time to assume that, absent a specific indication to the contrary, an employee would retain the knowledge and proficiency demonstrated through the testing process.

In the SBREFA Panel Report, the Panel indicated that some Small Entity Representatives were concerned that there would be an insufficient number of accredited crane operator testing organizations and that many employers would not be able to set up and maintain an audited employer program under Option 2 (see discussion of Option 2 below). At present, there are two testing organizations that have been accredited by a nationally recognized accrediting organization to certify crane operators.[67]

C–DAC considered this issue and was of the view that, with a four-year phase-in period, there would be sufficient time for the market to respond to an increased demand for certification services. Some SERs expressed a similar expectation. Nonetheless, the Panel recommended that OSHA solicit public comment on whether it would be appropriate to expand Option 1 so that an accredited educational institution could be used to "administer" tests. In other words, under this concept, Option 1 would be expanded so that an accredited educational institution could administer written and practical tests that were developed or approved by an accredited crane/derrick testing organization. Many educational institutions currently have an accreditation through a national or regional accrediting agency that is listed by the U.S. Secretary of Education (SOE) or have an accreditation by a State agency that has been recognized by the SOE for approval of public post-secondary vocational education. Such an expansion could broaden the availability of certification services.

C–DAC considered a related concept in which an educational institution or program accredited in this manner could both develop and administer tests. However, it rejected that concept because the SOE-related type of accreditation would be more broadly based on the institution as a whole, rather than on its operator certification program in particular.

It is the Agency's understanding that much of the Committee's concern in this regard was related to the development of the tests rather than their administration. In other words, while considerable subject-specific expertise is needed to develop accurate and reliable crane operator tests, the expertise needed to administer such tests may be similar to the expertise needed to administer tests in general. However, there is a question as to whether this is equally true for written and practical tests.

Therefore, OSHA solicits public comment on these issues. Specifically, the Agency seeks comment on whether Option 1 should be expanded so that an accredited educational institution could administer written and practical tests that were developed or approved by an accredited crane/derrick testing organization.

Paragraph 1427(c) Option 2: Qualification by an Audited Employer Program

Proposed paragraph (c) sets out Option 2, in which the employer would determine, through its own audited testing program, that its employee is qualified to operate the equipment. The Committee recognized that some employers, including those that have already established in-house testing programs, may want to do their own testing to meet the proposed § 1926.1427 requirements. The Committee also recognized that, for there to be a significant improvement in the industry with respect to operator qualifications, it is essential that there be a mechanism to ensure that such testing is accurate and reliable. Therefore, under Option 2, the tests would be required to be either developed by an accredited crane operator testing organization, or approved by an auditor who is certified by an accredited crane operator testing organization. In addition, the administration of the tests would be audited.

Proposed paragraph (c)(1) sets forth the requirements that would apply to the contents and design of the tests (requirements for the administration of the tests is dealt with separately in proposed § 1926.1427(c)(2), discussed below) used in an audited employer program. To ensure that the tests meet the industry standards for written and practical examinations, they would have to be developed by an accredited testing organization (as described in proposed

[66] See the explanation of the proposed definition of "portable" below in the discussion of proposed § 1926.1427(m).

[67] These organizations are the National Commission for the Certification of Crane Operators (NCCCO), which is accredited by the National Commission for Certifying Agencies (NCCA) (OSHA–2007–0066–0021) and by ANSI (OSHA–2007–0066–0025), and the Southern California Crane & Hoisting Certification Program (SCCHCP), which is accredited by NCCA.

§ 1926.1427(b)), or approved by an auditor in accordance with the requirements of proposed § 1926.1427(c)(1)(ii).

An employer choosing to use tests other than those developed by an accredited testing organization under proposed § 1926.1427(c)(1)(i) would be required to have the tests approved by an auditor in accordance with the criteria in proposed § 1926.1427(c)(1)(ii). The auditor would have to be certified as a test evaluator by an accredited testing organization. To ensure that the auditor's evaluation is independent and impartial, the auditor would be prohibited from being employed by the employer seeking evaluation of its qualification program. Also, the audit would need to determine that the program meets nationally recognized test development criteria and adequately assesses the criteria in proposed § 1926.1427(j).

The Committee believed that these requirements are necessary to ensure that the contents and design of the tests meet the criteria in proposed § 1926.1427(j) and generate valid and reliable results.

The requirements for test administration that would apply under Option 2 of this section are set forth in proposed § 1926.1427(c)(2). Proposed § 1926.1427(c)(2)(i) would require that the auditor find that the administration procedures meet nationally recognized test administration standards. The Committee believed that this proposed provision is needed to ensure that the test results would be valid and reliable.

Under proposed paragraphs (c)(2)(ii) and (c)(2)(iii), the auditor would have to be certified by an accredited certifying organization as described in § 1926.1427(b), and would be prohibited from being employed by the employer seeking the auditor's approval for its operator qualification program. Finally, proposed paragraph § 1926.1427(c)(2)(iv) would require that the audit be conducted in accordance with nationally recognized auditing standards. The Committee believed that, to avoid a conflict of interest and assure the integrity of the audit, it is necessary to have the auditor be independent of the employer and apply well recognized procedures for conducting the audit.

The Agency notes that the proposed requirement that the audit be conducted in accordance with nationally recognized auditing standards would apply only to the audit of the administration of the tests, and not to the audit of the contents of the written and practical tests. It appears to the Agency that this was a drafting error, and that the Committee intended that the entire audit be conducted in accordance with nationally recognized auditing standards. Therefore, the Agency solicits public comment on whether a new § 1926.1427(c)(1)(ii)(D), reading as follows, should be added:

(D) The audit shall be conducted in accordance with nationally recognized auditing standards.

Proposed paragraph (c)(3) addresses the need for an audit of an employer's operator qualification program shortly after its inception, as well as periodically thereafter. This would ensure regular and independent oversight of employer-run qualification programs to verify that operators are being tested according to nationally recognized standards, on at least those qualifications set forth in proposed § 1926.1427(j).

Proposed paragraph (c)(4) would require an employer's program to include re-qualification procedures, which would have to be audited as described in proposed § 1926.1427(c)(1) and (c)(2). The Committee believed that this is necessary to ensure the operators' continued proficiency with, at a minimum, the criteria set forth in proposed § 1926.1427(j).

In the event an auditor discovers a deficiency in an employer's operator qualification program, the employer would have to meet the requirements set forth in proposed § 1926.1427(c)(5). Proposed § 1926.1427(c)(5)(i) requires that no additional operators be qualified until the auditor determines that the deficiency has been corrected. Under § 1926.1427(c)(5)(ii), the program would also have to be re-audited within 180 days of the deficiency's correction to ensure that the minimum qualifications in proposed § 1926.1427(j) were being adequately and consistently tested.

Proposed paragraph (c)(5)(iii) would require the auditor to file a report of any such deficiency with the appropriate OSHA Regional Office within 15 days of discovery. In addition, records of the employer's qualification program audits would be required to be maintained by the auditor for three years and, under § 1926.1427(c)(5)(iv), would have to be made available at the request of the Secretary of Labor or a designated representative. The Committee believed that these provisions are necessary to facilitate enforcement of the Option 2 requirements.

Under proposed paragraph (c)(6)(i), a qualification by an employer's operator qualification program (Option 2) of this section would not be portable. It was the Committee's view that the degree of consistency in adhering to the proposed requirements of § 1926.1427 is likely to be highest among accredited crane operator testing organizations, since they would be fully independent and their business interest would depend on their continued accreditation. That view is reflected in full portability being restricted to certification under Option 1 of this section.

Under proposed paragraph (c)(6)(ii), a qualification by an employer's operator qualification program would be valid for five years. The Committee believed that this is an appropriate length of time to assume that, absent a specific indication to the contrary, an employee would retain the knowledge and proficiency demonstrated through the testing process.

Paragraph 1926.1427(d) Option 3: Qualification by the U.S. Military

Proposed paragraph (d) provides that an operator would be deemed qualified if he/she had a current qualification issued by the United States military. Under proposed § 1926.1427(d)(2), such a qualification would be considered valid for the length of time stipulated by the United States military, and would not be portable.

At the C–DAC meetings a representative of the United States Navy explained that, because of a variety of potential exigencies associated with the mission of the United States military, i.e., national defense, the military needs to be able to use its own qualification program, the criteria for which may have to vary based on the circumstances. Consequently, the criteria for qualification under Option 3 would be left to the military to determine, including the length of time for which such a qualification would be valid.

Proposed § 1926.1427(d) must be read in light of Executive Order (E.O.) 12196 (Feb. 26, 1980) and 29 CFR Part 1960, which exclude military personnel (uniformed members of the Armed Forces) and uniquely military equipment, systems, and operations from OSHA coverage. Consequently, uniformed military personnel would not be covered by any of this proposed standard and there would be no obligation under this standard or E.O. 12196 for uniformed military personnel operating cranes to be certified. Civilian employees of the Defense Department and Armed Forces engaged in work encompassed by "uniquely military equipment, systems and operations" similarly would not be covered by any of the provisions of this proposed standard, including the certification provisions. Therefore, even in the absence of Option 3, the Department of Defense is free to impose whatever

qualifications it requires for crane operators who are military personnel or civilian employees engaged in such work.

Under E.O. 12196, OSHA standards apply with respect to a civilian employee of the Department of Defense and Armed Forces who is engaged in work that falls beyond "uniquely military equipment, systems and operations." Under that executive order, proposed § 1926.1427 would be applicable to those employees. Therefore, the U.S. military could use Option 3 by qualifying its own civilian employee operators engaged in work that falls beyond "uniquely military equipment, systems and operations."

In reviewing this part of the C–DAC consensus document, the Agency has determined that there is an ambiguity in the text of Option 3 in that it does not clearly indicate whether it would also cover employees of private contractors of the Armed Forces or Defense Department. With respect to such private contractor employees, E.O. 12196 is inapplicable and OSHA has the authority to promulgate qualification/certification requirements regarding them.

The Agency believes that C–DAC's intent was to have Option 3 be applicable only with respect to civilian employees of the U.S. military; it was not intended to include private contractor employees. This intent is reflected in C–DAC's use of the term "Not portable" in Option 3 and that term's definition. Proposed § 1926.1427(d)(2)(i) specifies that an operator's U.S. military-issued qualification is not portable. Under the definition of that term in § 1926.1427(m)(2), such a qualification is valid "only where the operator is employed by (and operating the equipment for) the employer that issued the qualification." Since private contractor employees are not "employed by" the U.S. military, this indicates that Option 3 was not intended to apply to them. Instead, Option 3 was intended to apply only with respect to the U.S. military's own employees.

Accordingly, OSHA is planning on changing the regulatory language in proposed § 1926.1427(d) to more clearly reflect this intent. Specifically, the Agency is considering making the following changes to proposed § 1926.1427(d)(1):

(1) For purposes of this section, an operator who is an employee of the U.S. military is considered qualified if he/she has a current operator qualification issued by the U.S. military for operation of the equipment.

In addition, in proposed § 1926.1427(m)(Definitions), the following definition would be added:

(3) An "employee of the U.S. military" is a federal employee of the Department of Defense or Armed Forces and does not include employees of private contractors.

OSHA requests public comment on this issue.

Paragraph 1427(e) Option 4: Licensing by a Government Entity

This option would allow a government licensing department/office to qualify crane operators. The Committee included this option because it believed that some States have effective, reliable licensing procedures, and that making use of them for purposes of proposed § 1926.1427 would provide additional flexibility to employers. However, in the experience of Committee members, there is significant variability in criteria and administrative practices among government licensing entities. Therefore, under this option, the license could be used to meet the requirements of proposed § 1926.1427 only if the government entity meets the licensing criteria in proposed 1926.1427(e)(2).

Proposed paragraph (e)(2)(i) would require that the criteria used by the licensing department/office address the knowledge and skill requirements listed in proposed § 1926.1427(j). Proposed § 1926.1427(e)(2)(ii) would require that the government entity follow the same test content, test administration and related criteria as required under Option 1. Proposed § 1926.1427(e)(2)(iii) would require that the office with authority over the licensing department/office assess the tests and procedures used by the licensing office/department and determine that the requirements of proposed § 1926.1427(e)(2)(ii) and (e)(2)(iii) have been met. Also, the government licensing office would have to have re-certification procedures in place as discussed in proposed §§ 1926.1427(b)(1)(iv) and 1926.1427(c)(4). The Committee believed that these provisions are necessary to ensure that the government licensing criteria and procedures yield valid and reliable results.

Under proposed paragraph (e)(3)(i), this qualification would be valid only within the geographic jurisdiction of the licensing entity. For reasons of federal-local government comity, the Committee decided not to include a provision requiring the government entity to be accredited by a nationally recognized accrediting agency for purposes of Option 4. In the absence of such accreditation, there is an increased potential for variability in the degree to which the criteria in proposed § 1926.1427(e)(2) will be met. Consequently, the Committee believed that, for purposes of meeting the requirements in proposed § 1926.1427, the validity of the qualification under Option 4 should not extend beyond the geographical jurisdiction of the government entity.

Proposed paragraph (e)(3)(ii) provides that the licensing entity may determine the time period for which the qualification is valid, but cannot issue a qualification intended to be valid for more than five years. The five year maximum was included in the provision because the Committee believed that this is an appropriate length of time to assume that, absent a specific indication to the contrary, an employee would retain the knowledge and proficiency demonstrated through the testing process.

Paragraph 1427(f) Pre-Qualification/Certification Training Period

This proposed paragraph addresses the requirements that would have to be met for a trainee to operate a crane on the job while preparing for qualification/certification assessment. Proposed § 1926.1427(f)(1) would allow for the operation of cranes by employees who are not qualified or certified, provided that they meet the requirements in proposed § 1926.1427(f)(2). Proposed § 1926.1427(f)(2) would allow those undergoing training in preparation for qualification/certification tests to operate equipment under the conditions outlined in § 1926.1427(f)(2)(i) through (f)(2)(v). The Committee believed that it is necessary for there to be a process by which operators who are not certified or qualified can get experience working with the equipment to help prepare for obtaining a certification/qualification. This proposed paragraph would require appropriate oversight of such trainees to ensure worksite safety.

In the C–DAC consensus document, § 1926.1427(f)(2) states that,

An employee who has passed neither the written nor practical tests required under this section is permitted to operate equipment as part of his/her training where the following requirements are met. * * *

It is the Agency's understanding that the intent of the Committee was to allow trainees who had not yet obtained a certification or qualification to operate equipment on the job as part of the training process as long as the criteria in § 1926.1427(f)(2) were met. However, the C–DAC language would allow such an operator to do this only if the

operator had passed not yet passed both the written and practical tests.

The anomalous result of that language would have been that an operator who had passed one of those tests but not both would have been prohibited from operating the crane as a trainee under this provision. Since that would have been contrary to the Committee's intent, the Agency has modified that language for the proposed rule, which now reads:

An employee who has not passed both the written and practical tests required under this section is permitted to operate equipment as part of his/her training where the following requirements are met. * * *

Proposed paragraph (f)(2)(i) would require that the trainee/apprentice be provided with sufficient training prior to operating the equipment to enable him/her to operate it safely under the limitations listed in this proposed section and any additional limitations established by the employer. This would ensure that, before beginning to operate the equipment at the site, the trainee/apprentice would have attained sufficient knowledge and skills to operate the equipment safely as a trainee/apprentice.

Proposed paragraph (f)(2)(ii) would restrict the trainee/apprentice's operation of the equipment to those tasks currently within his/her ability. The Committee believed that this is necessary to ensure that, throughout the training period, the tasks the trainee/apprentice performs are always commensurate with his/her ability. This provision would also allow the trainee/apprentice to perform progressively more complex tasks as the trainee/apprentice develops the necessary ability.

Proposed paragraph (f)(2)(iii) sets forth the requirements that an employee would have to meet to be permitted to supervise the trainee/apprentice's operation of the crane. The Committee believed that setting the criteria for such supervision is necessary to ensure that the equipment is operated safely during the training/apprenticeship period.

Under proposed paragraph (f)(2)(iii)(A), the trainee/apprentice's supervisor would have to be an employee or agent of the trainee's/apprentice's employer. The Committee believed that this is necessary to ensure that the supervisor would have the authority to direct the actions of the trainee/apprentice.

Proposed paragraph (f)(2)(iii)(B) would require that the trainee/apprentice's supervisor be either a certified operator (in accordance with proposed § 1926.1427), or have passed the written portion of a certification test under one of the Options in proposed § 1926.1427. In addition, whether the supervisor is a certified operator or has passed the written test, the supervisor would have to be familiar with the proper use of the equipment's controls.

The SBREFA panel recommended that OSHA consider whether the trainee/apprentice's supervisor should have additional training beyond the qualifications required under proposed § 1926.1427(f)(2)(iii)(B). This recommendation is addressed below in the discussion of § 1926.1430, *Training*.

The Committee believed that this provision is necessary to ensure that the supervisor has sufficient knowledge about the equipment to enable him/her to effectively oversee the safe operation of the crane. The Committee determined that a supervisor who had passed the written portion of a certification test would not need to be sufficiently proficient to pass the practical portion in order to effectively supervise a trainee/apprentice. However, both in the instance where the supervisor is certified and in the instance where he/she is not certified but has passed the written portion of the certification test, the Committee believed that it is necessary that he/she be familiar with the proper use of the equipment's controls, since such knowledge is essential to being able to effectively supervise a trainee/apprentice.

The C–DAC consensus document language refers to "certified operator" and the written portion of a "certification" test. However, under proposed § 1926.1427, an operator may be either "certified," which would be obtained under Option 1, or "qualified," which would be obtained under any one of the other options. The Agency believes that the Committee intended that as long as the supervisor meets the qualification/certification criteria under any of these options, or has passed the written portion of a test used to obtain a qualification/certification under any of these options, and all other aspects of proposed § 1926.1427(f)(2)(iii) have been met, the employer should be permitted to use that supervisor to supervise the trainee/apprentice.

In addition, the C–DAC consensus document language regarding this provision states that a supervisor who is a "certified operator" may, if the other criteria listed in the provision are met, supervise the trainee/apprentice. Alternatively, the supervisor must have "passed the written portion of a certification test * * *." The Agency believes that it was the Committee's intent that the certification or written test that was passed be valid for the equipment that the trainee/apprentice is operating. However, the C–DAC language, read literally, would permit a supervisor with a certification or passing score on a written test that was valid only for equipment other than what the trainee/apprentice was operating to supervise that trainee/apprentice.

To conform proposed paragraph (f)(2)(iii)(B) to C–DAC's intent, OSHA is planning to modify that provision as follows and requests public comment on this change.

(B) The operator's supervisor is either a qualified/certified operator under this section for the equipment the trainee/apprentice is operating, or has passed the written portion of a qualification/certification test for such equipment under one of the Options in paragraphs (b) through (e), and is familiar with the proper use of the equipment's controls.

Proposed paragraph (f)(2)(iii)(C) would require that the operator's supervisor perform no tasks that would detract from his/her ability to supervise the trainee/apprentice. The Committee believed that permitting the operator's supervisor to engage in tasks that would impinge on his/her ability to supervise the trainee/apprentice would endanger the trainee/apprentice and other employees in the vicinity of the crane.

Under proposed paragraph (f)(2)(iii)(D), for equipment other than tower cranes, the operator's supervisor and the trainee/apprentice would be required to be in direct line of sight of each other, and would be required to communicate either verbally or by hand signals. The Committee believed that this would ensure that the operator's supervisor could rapidly and effectively give instructions to the trainee/apprentice, especially for purposes of correcting the trainee/apprentice.

With respect to tower cranes, it was the Committee's view that the height of the operator's station would typically make it infeasible to maintain direct line of sight between the operator's supervisor and the trainee/apprentice. For the same reason, use of hand signals is also often not feasible. Therefore, the proposed provision would instead require that they be in direct communication with each other. For example, direct communication could be achieved by radio or other instant electronic voice communication system.

The Committee believed that it would be infeasible for the operator's supervisor to supervise the trainee/apprentice 100 percent of the time. Proposed § 1926.1427(f)(2)(iv) is designed to set criteria that would permit the trainee/apprentice to continue operating the crane in the absence of the operator's supervisor for

short breaks under circumstances that would result in safe operation. Those criteria would be as follows:

Under proposed paragraph (f)(2)(iv)(A), the break would be restricted to no more than 15 minutes, and no more than one break per hour. The Committee believed that this restriction is needed because otherwise there would be a significant likelihood that the other criteria (discussed below) would not be followed, and that the trainee/apprentice would not receive the amount of supervision that is needed to ensure safe operation.

Under proposed paragraph (f)(2)(iv)(B), immediately prior to the break, the operator's supervisor would have to inform the trainee/apprentice of the specific tasks that the trainee/apprentice would be authorized to perform and the limitations that he/she must adhere to during the break. Under proposed § 1926.1427(f)(2)(iv)(C), the specific tasks that the trainee/apprentice would perform during the break would have to be within the trainee/apprentice's ability. The Committee believed that these provisions are necessary to prevent injuries and fatalities that could be caused by a trainee/apprentice operating a crane under circumstances that are beyond his/her ability.

The Committee believed that there are certain circumstances in which it is inappropriate for a trainee/apprentice to operate a crane because of the complexity and/or heightened risks involved. Therefore, for the circumstances listed in proposed § 1926.1427(f)(2)(v)(A)–(D), the trainee/apprentice would be prohibited from operating the equipment in all cases, even if the operator's supervisor believed the trainee/apprentice had attained the necessary knowledge and skill.

With respect to operations involving multiple-lift rigging, the Committee believed that the difficulty and/or risk involved is not at the same level as those listed in proposed § 1926.1427(f)(2)(v)(A)–(D). Consequently, as reflected in proposed § 1926.1427(f)(2)(v)(E), while there would be a general prohibition against a trainee/apprentice operating the equipment when multiple-lift rigging is involved, an exception would apply where the operator's supervisor determined that the trainee/apprentice's skills are sufficient for this high-skill work.

Paragraph 1427(g)

Proposed paragraph (g) would permit a testing entity to provide training as well as testing services as long as the criteria of the applicable accrediting agency (in the Option selected) for an organization providing both services are met. The Committee was aware of an impression among some people in the industry that a testing entity could not get accredited if it also provided training. However, after some research, the Committee determined that this was not a bar to accreditation if certain procedures were instituted. Specifically, an industry consensus standard, the International Organization for Standardization ("ISO") 17024, addresses entities that offer certifications to individuals. It requires that no such entity offer training unless the entity can demonstrate that the training is independent of both evaluation and certification. This is intended to preserve both confidentiality and impartiality in the testing/certification process.

Therefore, at least with respect to those accrediting agencies that apply the ISO standard, a testing entity may also conduct training as long as an adequate "firewall" exists between the two functions. Proposed § 1926.1427(g) reflects the Committee's intent to make clear that a testing entity is not be prohibited from providing training, as long as the applicable criteria have been met.

Paragraph 1427(h)

The Committee deliberated about the need for operators to be able to read to operate a crane safely and how some operators, even though they can read, nonetheless have difficulty taking written tests. The Committee believed that it is crucial for operators to be able to read the load chart and other manufacturer procedures for the equipment they operate. In its view, the failure to be able to read that information could result in injuries and fatalities through a wide variety of errors (for example, by overloading the crane as a result of exceeding the crane's working radius, failing to deploy outriggers in accordance with the manufacturer's instructions, or failing to apply a footnote in a load chart that explains that the capacity is lower when a particular configuration of the crane is used).

However, the Committee recognized that some employees, while they have sufficient literacy to be able to read this type of material, for other reasons are unable to take written tests effectively. Therefore, under proposed § 1926.1427(h), the written qualification/certification test could be administered verbally, with the answers given verbally, if two prerequisites are met.

The first is that the qualification/certification candidate pass a written demonstration of literacy relevant to the work (proposed § 1926.1427(h)(1)). The second is that the candidate demonstrate the ability to use the type of written manufacturer procedures applicable to the class/type of equipment for which the candidate is seeking qualification/certification (proposed § 1926.1427(h)(2)). These would typically include, for example, the load chart and operator's manual for the crane the candidate would be operating.

As reflected in the SBREFA Panel Report, some SERs expressed a concern that operators who are not proficient in English would not be able to meet either requirement. The Panel recommended that OSHA solicit comment on whether employers should be permitted to use manuals that have been re-written to accommodate the level of English proficiency (that is, lower level or lack of proficiency) of the operator.

C–DAC considered this same concern in designing § 1926.1427(h). Neither the demonstration in § 1926.1427(h)(1) nor (h)(2) would necessarily have to be made in English as those provisions are currently drafted. As an example, under these proposed provisions, an employer could obtain a Spanish-language version of the load charts and operator's manual from the manufacturer, and arrange to have the literacy test administered in Spanish. An operator able to meet the requirements of proposed § 1926.1427(h) using these Spanish language materials would have demonstrated adequate literacy under the proposed rule.

However, it may be necessary to modify proposed § 1926.1427(b)(1), (c) and (e) so that, in such instances, the qualification/certification is limited to the use of equipment that is equipped with such translated materials. In addition, there is an issue with respect to whether the rule needs to incorporate safeguards to ensure that a translation of manufacturer-supplied materials conveys the same information as in the original. OSHA requests comment on these issues.

Some SERs also expressed a concern that many operators are not sufficiently literate in any language to meet the proposed requirements in § 1926.1427(h)(1) and (h)(2). As discussed above, C–DAC determined that it is essential for ensuring safe crane operation that operators have sufficient literacy to read and comprehend written materials that relate to critical aspects of operation, such as load charts and manufacturer's manuals. However, the Panel

recommended that OSHA solicit comment on whether employers should be permitted to use manuals that have been re-written to accommodate the literacy level of operators.

The concept underlying this recommendation is that a lower level of literacy may be sufficient as long as that level still enables the operator to read and understand the simplified language (and perhaps greater use of illustrations) in the re-written manual. If this were to be allowed, it would be necessary to modify proposed § 1926.1427(b)(1), (c) and (e) so that the certification is limited to the use of equipment that is equipped with a suitably re-written manual. Another issue that such a change would raise is whether the rule would need to incorporate safeguards to ensure that the modified materials conveyed the same information as in the original, manufacturer-supplied materials. OSHA requests comment on the Panel's recommendation and these related issues.

Paragraph 1427(i) [*Reserved.*]

Proposed paragraph (i) would be reserved because it is inconvenient for readers to determine whether "i" is being used as a letter or a roman numeral.

Paragraph 1427(j) Certification Criteria

Proposed paragraph (j) sets out the qualification and certification criteria applicable to the options described in proposed §§ 1926.1427(b)(1)(ii)(A), 1926.1427(c)(1)(ii)(C), and 1926.1427(e)(2)(iv). The Committee determined that these are the criteria needed to address the knowledge and skills that are fundamental to safe crane operation. As stated in the introductory language in proposed § 1926.1427(j), these would constitute "minimum" criteria; the accredited certifying entities, employers, or local or state licensing offices would not be precluded from adding additional requirements to their certification or qualification programs.

Proposed paragraph (j)(1) describes the criteria that would have to be covered by the written examination portion of a qualification/certification program. As stated above in the discussion of examination administration, the written portion of the examination may be administered orally, so long as the candidate has demonstrated sufficient literacy relevant to the work (e.g., load charts and equipment manual).

Proposed paragraph (j)(1)(i) states that the individual seeking qualification or certification must know "the information necessary for safe operation of the specific type of equipment the individual will operate * * *" As discussed above with respect to proposed § 1926.1427(b)(1)(ii)(B) (requirement that different levels of certification be provided, based on varying equipment capacities and types), during the SBREFA process, several SERs described situations in which an operator is very knowledgeable and skillful with respect to one particular model of crane, but has very limited knowledge and ability regarding other models and types of cranes. These SERs were concerned that such operators would be unable to obtain a certification based on equipment capacity and type. They believe that, since these operators are well qualified to operate a particular crane model, there should be a mechanism for them to become certified to operate that model. The Panel recommended that OSHA consider and solicit public comment on expanding the levels of certification so as to allow an operator to be certified on a specific brand's model of crane. Consistent with the Panel's recommendation, OSHA seeks public comment on this issue.

Also, as discussed above with respect to proposed § 1926.1427(b)(1)(ii)(B), the SBREFA Panel received comments from some SERs suggesting that the standard should accommodate crane operators who were fully capable of operating particular equipment in a limited set of circumstances but who would be unable to pass certification tests that required knowledge and abilities beyond those circumstances. The Panel recommended that OSHA consider and solicit public comment on expanding the levels of operator qualification/certification to allow such operators to be certified for a specific, limited type of circumstance defined by a set of parameters that, taken together, would describe an operation characterized by simplicity and relatively low risk. In response to the Panel's recommendation, OSHA requests public comment on whether such parameters could be identified in a way that would result in a clear, easily understood provision that could be effectively enforced.[68]

Proposed paragraph (j)(1)(i)(A) would require that the written examination address the candidate's knowledge of the equipment controls and operational/performance characteristics of the specific type of equipment. Operational/performance characteristics would include, for example, the deflection characteristics of the boom, including how deflection affects the positioning of the load and the extent to which deflection varies with boom angle and length as well as load weight. Also, equipment with lattice/cable supported booms has different deflection characteristics than equipment with non-lattice booms (that is, hydraulic ram supported booms). Meeting these criteria would ensure that the person controlling the equipment would be able to make necessary judgments and adjustments for safe crane operation.

Proposed paragraph (j)(1)(i)(B) was included to ensure that operators would be able to use load capacity information on a variety of configurations of the capacity and type of equipment. Such information is typically contained in load charts and manuals. This would ensure that the operator would be able to accurately determine, independently, the capacity of the equipment in each situation that he/she might encounter. The Committee believed that this ability is critical to helping prevent injuries and fatalities caused by overloading the equipment.

The Committee considered whether it is also necessary for the operator to be able to use the load information without the aid of a calculator. It determined that calculators are now so commonly available and used that it is not necessary for the operator to be able to use the load information without one.

Proposed paragraph (j)(1)(i)(C) addresses the need for crane operators to know how to prevent power line contact. In the Committee's experience, electrocutions and electrical injuries are typically caused when the operator unintentionally brings the boom, load line or load in electrical contact with a power line. Operator knowledge of the procedures that are necessary for preventing such contact (see the discussions of proposed §§ 1926.1407 through 1926.1411 above) is essential for preventing these injuries and fatalities.

Proposed paragraph (j)(1)(i)(C) also addresses the need for crane operators to know how to respond to a power line contact if one occurs. For example, the Committee determined that some electrocutions of operators occur while an operator attempts to exit the equipment. After realizing that the equipment is in electrical contact with a power line, the operator is electrocuted when he/she creates a grounding path by touching the

[68] The SBREFA Panel also recommended that OSHA ask for public comment on whether the standard should state more clearly that more limited training is required for operators of smaller capacity equipment than for more complex equipment. This recommendation is addressed below in the discussion of § 1926.1430, Training.

equipment while stepping on the ground.[69]

Proposed paragraph (j)(1)(i)(D) addresses the need for crane operators to have technical knowledge on a range of subjects that, if not sufficiently understood, could cause injuries and fatalities. The list of subjects in proposed Non-Mandatory Appendix E of this subpart serves as an example of that set of knowledge. The Committee believed that a degree of flexibility should be accorded in terms of what specific subjects need to be included. For example, a subject relevant only to an extensible boom crane would not need to be covered for a certification for a traditional lattice boom crane. Therefore, the proposed provision states that the testing criteria must include technical knowledge "similar" to the subject matter criteria listed in Appendix E of this subpart. To accommodate those who have less of a need for such flexibility and more of a need for specificity in this regard, the proposed provision also makes clear that, when the subjects listed in Appendix E are used, the requirements of the provision would be met.

In addition to the technical knowledge that would be required under proposed § 1926.1427(j)(1)(i)(D), technical knowledge applicable to three specific subjects would also be required under proposed § 1926.1427(j)(1)(i)(E).

Proposed paragraph (j)(1)(i)(E)(1) would require that an operator be able to demonstrate sufficient knowledge of how to assess ground conditions to identify potential hazards. The operator would therefore be able to assess ground conditions through inspection, and would also be aware of the potential for unseen hazards such as sewers, water mains, and other underground installations or conditions that might affect the ability of the ground to support the equipment and expected load.

Proposed paragraph (j)(1)(i)(E)(2) would require operators to demonstrate sufficient knowledge of site hazards so that the operator would be able to identify them and understand their significance to safe operation of the equipment. Examples of typical site hazards include electrical hazards posed by underground electrical or cable lines and aboveground telephone poles and power lines, and ground-support hazards posed by manholes, drains and trenches, which can lead to tip-overs.

Proposed paragraph (j)(1)(i)(E)(3) would require operators to demonstrate sufficient technical knowledge to ensure that conditions at the entrance to the site are sufficient to enable the equipment to travel safely onto the site. For example, where equipment must descend or ascend a dirt ramp, the operator needs to be able to assess the effect of the ramp's steepness and to detect signs of instability.

Proposed paragraph (j)(1)(i)(F) would require operators to demonstrate a thorough knowledge of this subpart, including incorporated materials. The Committee believed that operators play a key role in the application of these requirements and it is therefore essential that they understand them.

Proposed paragraph (j)(1)(ii) is intended to ensure that operators have the ability, at a minimum, to demonstrate sufficient literacy to locate and understand information both in the equipment manual as well as in other sources which address the information discussed in proposed § 1926.1427(j)(1)(i)(A) through (j)(1)(i)(F). Since the Committee determined that safe crane operation depends on applying that information, the operator needs to be able to locate and understand it.

Proposed paragraph (j)(2) would require a practical test and sets criteria for such a test. Safe crane operation depends on an operator having sufficient skill to operate the equipment safely. The Committee felt that a successful demonstration of ability to perform the operations discussed below is essential to ensuring that the operator will be able to apply the requisite knowledge in the field. The practical test under this proposed paragraph would be conducted using equipment of the capacity and type for which the candidate seeks certification.

Proposed paragraph (j)(2)(i) would require an operator to demonstrate the ability to recognize, from visual and audible observation, the items listed in proposed paragraph § 1926.1412(d)(shift inspection). Irrespective of whether the operator or someone else conducts the shift inspection, the operator needs to be able to recognize apparent deficiencies associated with these parts and mechanisms. First, the operator needs to be able to identify indications of safety problems that may arise after the shift inspection has been completed. In addition, this ability is important since the operator needs to be able to effectively exercise his/her authority under proposed § 1926.1418, *Authority to stop operation* to stop lifting operations (see discussion of that proposed section above).

Proposed paragraph (j)(2)(ii) addresses the need for operators to have demonstrated proficiency with operational and maneuvering skills. Lack of such proficiency could result in a wide range of accidents that could cause injuries or fatalities. For example, without this level of skill, the operator could unintentionally exceed the crane's capacity (such as by booming out too far) and overturn the equipment, make electrical contact with power lines, or cause struck-by injuries and fatalities (such as by losing a load or losing control of the load).

Proposed paragraph (j)(2)(iii) requires that the operator demonstrate the ability to apply load chart information. The Committee believed that if an operator is unable to apply load chart information, there is a significantly heightened risk of the crane overturning. This is because an operator without this ability may fail to keep the crane within the required operational parameters called for by the load chart (for example, by failing to recognize that proceeding with the lift will result in exceeding the maximum allowable boom radius as specified in the load chart).

As with proposed paragraph (j)(2)(i) (ability to recognize inspection items), this ability is also important since the operator needs to be able to effectively exercise his/her authority under proposed § 1926.1418 (Authority to stop operation) to stop lifting operations (see discussion of that proposed section above). For example, if the only way to land the load with the crane in its current position would be to exceed the allowable radius specified in the chart, the operator would need to be able to recognize that this would happen and stop the lift.

Proposed paragraph (j)(2)(iv) would require that an operator be able to shut down and secure equipment safely. This ability is necessary to ensure that the shut down procedure is done safely and the equipment is properly secured to prevent unintended movement of the equipment after shut down.

Paragraph 1427(k) Phase-In

Under proposed paragraph (k), the qualification/certification requirements in proposed § 1926.1427 would not become effective until four years after the effective date of the final rule. The Committee believed that this four year period would provide time for operators to get additional training (where

[69] Note that, as provided in proposed § 1926.1408(g)(1)(i)(A) on power line safety, operators must be aware of the danger of electrocution if they simultaneously touch energized equipment and the ground. They must also, pursuant to proposed § 1926.1408(g)(1)(i)(B), be trained to understand that when the equipment makes electrical contact with a power line, the operator's safety requires him or her to remain inside the cab except where there is an imminent danger of fire, explosion, or other emergency that necessitates their leaving the cab.

needed) to prepare them for the testing, for additional testing organizations to become accredited for purposes of Option 1 (proposed § 1926.1427(b)), for additional organizations to become nationally recognized accrediting agencies, for employers (who so choose) to develop audited programs for use under Option 2 (proposed § 1926.1427(c)), for accredited testing organizations to develop programs to certify auditors as described under Option 2, and for state and local government entities (who so choose) to make preparations to meet the criteria under Option 4 (proposed § 1926.1427(e)). It would also give employers time to plan which of the qualification/certification options would be most suitable for them.

Under proposed paragraph (k)(1), during this four year period, proposed paragraphs § 1926.1427(k)(1)(i) and (ii) would address operator qualifications and training. Specifically, proposed § 1926.1427(k)(1)(i) would require that operators be competent for the purposes of operating the equipment safely. This would require that the operator have the requisite knowledge and skill to identify, anticipate, and avoid actions which could result in hazardous conditions related to the equipment and job site.

Proposed paragraph (k)(1)(ii) would require employers to ensure that operators who do not already have sufficient knowledge or skill to operate the equipment safely undergo training prior to engaging in operations. In addition, the employer would be required to ensure that the operator is evaluated to confirm that he/she understands the information provided in the training. These interim measures are not significantly different from current requirements under Subpart N of this part, § 1926.20(b)(4) ("the employer shall permit only those employees qualified by training or experience to operate equipment and machinery") and § 1926.21(b)(2) ("the employer shall instruct each employee in the recognition and avoidance of unsafe conditions * * * "). However, they would ensure that there would not be a gap with respect to this issue between the termination of the requirements under Subpart N of this part and the effective date of proposed § 1926.1427(a) through (j) and (m). The four-year phase-in period discussed above is set out in proposed § 1926.1427(k)(2).

Paragraph 1427(l) [*Reserved.*]

Proposed paragraph (l) would be reserved because of the inconvenience that would result from the use of "l" both as a small Arabic numeral and as the letter "l."

Paragraph 1427(m) Definitions

Proposed paragraph (m) defines two terms used in the qualification/certification provisions in § 1926.1427(b) through (e) (addressed above). Proposed § 1926.1427(m)(1) explains that, if an operator has a "portable" certification, any employer may rely on that certification. The employer of an operator who carries a portable certification (which can be obtained only through the method described in proposed § 1926.1427(b)) has ensured that the operator has been qualified or certified, and has met the requirements of proposed § 1926.1427(a).

Proposed paragraph (m)(2) explains that, if an operator has a qualification that is "not portable," only the employer who issued that qualification may rely on it for purposes of meeting the requirements of proposed § 1926.1427(a). As discussed above, OSHA is considering adding a third definition for the term "employee of the U.S. military" (see the discussion above of proposed § 1926.1427(d)).

Dissenting View of C–DAC Member Brian H. Murphy

Under the C–DAC ground rules (OSHA–S030–2006–0663, Ex. 36–1–8), the Committee reaches consensus if no more than two non-federal members dissent on a particular issue. The ground rules also provide that, upon the request of a dissenting member, OSHA will include the member's reasons for dissenting in the preamble to the proposed rule. Two members of C–DAC, Mr. Brian H. Murphy and Mr. Craig Steel, dissented from the Committee's draft of proposed § 1427. Mr. Murphy asked that his reasons for dissenting be included in the preamble, and provided them in the letter reprinted below (OSHA–2007–0066–0007). Note that, pursuant to the ground rules, OSHA has not reprinted comments in the letter regarding issues upon which the member did not dissent.

Dear Deputy Assistant Secretary Snare:

Thank you for providing an opportunity for the Associated General Contractors of America (AGC) to serve on the Occupational Safety and Health Administration's (OSHA's) Crane and Derrick Advisory Committee (C–DAC). AGC welcomed and appreciated the chance to explore OSHA's several options for a new standard on cranes and derricks with the other knowledgeable members of that committee. In addition, it was a personal privilege for me to represent AGC's 33,000 members.

AGC is a nationwide trade association of general contractors, specialty contractors, material suppliers, equipment dealers and other firms that collectively form the core of the construction industry. The association was formed in 1918 at the express request of President Woodrow Wilson, and today, AGC maintains a network of 98 state and local chapters throughout the United States. Its members engage in the construction of commercial buildings, factories, warehouses, highways, bridges, airports, waterworks facilities, waste treatment facilities, dams, water conservation projects, defense facilities and multi-family housing projects, and on site preparation and utilities installation for housing development.

AGC shares and strongly supports OSHA's mission. While AGC occasionally disagrees with OSHA's views on the best and most effective means and methods of improving construction safety and health, AGC is and will remain equally committed to that goal. Indeed, from its very inception, AGC has taken a great interest in the safety and health of construction workers. Its bylaws expressly provide that "[t]he members of [AGC] shall work to develop good relations with employees * * * and shall make every effort to provide safe working conditions on construction projects and to promote safe working habits by their employees.

AGC has long taken a very proactive approach to construction safety and health. Over the last 15 years, AGC has produced over 100 videos and publications on the various practices and procedures that may be necessary, on any given jobsite, to protect construction workers from occupational injury or illness. Each year, AGC sponsors two nationwide safety award programs. Regularly, AGC also offers safety management training courses and other safety training programs. In 2003, AGC used a Susan Harwood Training Grant to train 1,800 construction workers on OSHA's new steel erection standard. In 2004, AGC will use a third grant to train another 600 construction workers on fall protection. AGC was proud to receive these grants, and today, AGC is even prouder that an overwhelming number of its trainees gave these programs excellent reviews. These efforts demonstrate AGC's commitment to partnering with OSHA to make construction work-sites safer.

AGC also supports OSHA's very specific effort to set new standards for the men and women operating cranes and derricks. AGC agrees that systematically increasing the knowledge and improving the skill of these construction workers will reduce the number of accidents involving cranes and derricks and limit the closely related risks of injury. Long before serving on C–DAC, AGC collaborated with the St. Paul Companies on an exemplary training program on the essentials of crane safety. AGC also signed a cooperative agreement with the National Commission for the Certification of Crane Operators (NCCCO), recognizing the "importance of safe crane operations on our nation's construction sites" and "the CCO written and practical examination is a method of documenting the qualifications criteria outlined in ASME B30.5–3.1–1995, "Qualifications for and Conduct of Operators and Operating Practices."

As a member of C–DAC, fully committed to its goals and objectives, AGC worked long

and hard to find common ground with the other members of that group. At the end of the day, both AGC and the others did reach agreement on a vast majority of the issues that the group had to confront. The group wrote forty-two sections and two appendices into the new standard that it proposed to OSHA, developing a document that totaled one-hundred-nineteen pages in length. During its deliberations, the group reached agreement on forty-one of those sections and both appendices, which collectively accounted for one-hundred-twelve of the pages of text. On only one of the sections, and only seven pages of the text, did everyone fail to agree. On only that one section, and those few pages of text, did AGC find it necessary to part company with the others. (Endnote 1).

AGC would not, however, suggest that the disagreement was a trivial one. Quite to the contrary, AGC believes that the disagreement was a serious one that OSHA needs to address. C–DAC accomplished most but not all of its mission. It is now incumbent upon OSHA to correct the one significant error that C–DAC made.

The disagreement between AGC and the other members of the committee was over section 1427 of the committee's proposal. That section is entitled "*Operator qualification and certification.*" In paragraph (a), it requires an employer to "ensure" that its crane and derrick operators are either:

- "Qualified or certified * * * in accordance with" one of four procedures, found in the following paragraphs (b), (c), (d) and (e); or
- "Operating the equipment during a training period in accordance with paragraph (f)

Paragraph (b) of section 1427 provides for "[c]ertification by an accredited crane/derrick operator testing organization." Paragraph (c) provides for "[q]ualification by an audited employer program." Paragraph (d) provides for "[q]ualification by the U.S. military." And paragraph (e) provides for "[l]icensing by a government entity." (Endnote 2)

AGC opposes section 1427 primarily because its requirements for the qualification and certification of crane and derrick operators are too restrictive. For many and perhaps the vast majority of construction contractors, none of the four options for operator qualification or certification are practical to pursue. At the same time, section 1427 omits several requirements that would far more directly affect crane and derrick safety. If adopted as currently written, section 1427 would disrupt the construction industry and might actually hinder the broad effort necessary to ensure that crane and derrick operators are knowledgeable, competent and well prepared, every day, to perform their work.

Following are AGC's more specific comments on each of the four options that Section 1427 provides, on the risks that this provision would create for any employer that chose to implement an operator training program, and on several significant omissions from the proposed standard.

Certification by an Accredited Crane/Derrick Operator Testing Organization

While less restrictive than paragraph (d), paragraph (b) fails to provide an option for many and perhaps most of the small to medium-sized firms that dominate the construction industry. Paragraph (b) would permit employers to engage third parties to test and certify their crane and derrick operators, but in the process, paragraph (b) would severely restrict the number of organizations qualified to perform those tasks. The proposed standard would permit employers to rely on only those organizations "accredited by a nationally recognized accrediting agency."

To the best of AGC's knowledge, information and belief, only two organizations are "accrediting" agencies within the meaning and for the purposes of Section 1427, and only one of the two agencies has actually accredited any other organization to test and certify crane and derrick operators. During the lengthy deliberations among the members of C–DAC, the National Commission for Certifying Agencies (NCCA) and the American National Standards Institute (ANSI) were the only two organizations said to be such "accrediting" agencies. The NCCA was the only one of the two said to have actually accredited any other organization to test and certify operators.

To make matters worse, it was acknowledged and agreed that the NCCCO is the only testing organization that the NCCA has accredited. If other organizations are also accredited to test and certify crane and derrick operators, within the meaning and for the purposes of Section 1427, then neither the other members of C–DAC nor OSHA identified them, and AGC is unaware of them.

AGC would emphasize that it holds the NCCCO in high regard. As already mentioned, AGC has gone so far as to sign a cooperative agreement with the NCCCO. Nevertheless, AGC doubts that the NCCCO could meet the enormous demand that section 1427 would generate for crane and derrick operator testing and certification. If adopted, Section 1427 would take that demand to an entirely new level. It should be noted that NCCCO has largely succeeded in meeting the much more limited demand for voluntary certification.

In fairness, AGC believes that other members of C–DAC harbor the same doubt. Something had to motivate the authors of section 1427 to include paragraph (k), delaying the mandate for operator testing and certification for four years. It is certainly possible that the other members of C–DAC supported section 1427 in the belief that other testing organizations would use this time to seek accreditation—in the hope of profiting on a dramatic increase in the demand for operator testing and certification. The problem is that neither the other members of C–DAC nor OSHA undertook any study of the costs that such organizations would have to incur to qualify for accreditation, or to provide testing or certification services on the massive scale that section 1427 contemplates. Nor did the other members identify the sources of capital that these other testing organizations would require, or the prices they would have to charge for their services, or how they could even begin to sustain themselves until testing and certification became mandatory. There were no business plans or business models for either the committee or OSHA to review. It might be appealing to suppose that future demand for testing and certification would call forth the necessary supply, but it would remain little more than speculation. There is no factual record to support any such conclusions.

However logical it may be, AGC maintains that OSHA cannot simply suppose that the supply of the necessary services would materialize. The stakes are much too great. If other testing organizations did not enter the market, or they subsequently failed for financial or other reasons, or they simply found it necessary to charge more than most contractors could bear, the construction industry could quickly find itself in gridlock.

AGC also doubts the wisdom of giving any private organization—whether the NCCA, ANSI, the NCCCO or any other accrediting agencies or testing organization—such a dominant role in the implementation of a federal regulation. Section 1427 would set minimal standards for accreditation, leaving most of that process in private hands. OSHA would not have any direct oversight over (or other relationship with) any testing organization. The agency would be two steps removed from that process.

Qualification by an Audited Employer Program

Paragraph (c) also fails to provide an option for many and perhaps most construction companies. That provision would permit an employer to test and qualify its own employees to operate cranes and derricks, but only if *inter alia* (1) the employer's written and practical tests were "developed by an accredited crane/derrick operator testing organization," (2) the employer's "program" were approved by an auditor "certified," in turn, by such an organization, and (3) the "circumstances" under which the employer administered the tests were also approved by such an auditor.

As noted, the NCCCO appears to be the only "accredited crane/derrick operator testing organization" at this time. AGC doubts that small or medium-sized construction contractors would have the resources necessary to self-administer the NCCCO's written and practical tests, particularly "under circumstances * * * meeting nationally recognized test administration standards." In addition, it appears that neither the NCCCO nor any other testing organizations would have any business incentive to develop a large pool of certified auditors. To the contrary, they would have an obvious interest in maintaining the demand for their own testing services, and their own certifications. Nothing in the proposed standard would compel or even encourage the NCCCO or any other testing organization to help construction employers develop practical alternatives.

Further eroding paragraph (c) are provisions that would require the employer to have its "program" re-audited every three

years, and suspend the employer's "program" for any "significant deficiency." Though it would expressly forbid the auditor of the employer's program to be the employer's employee—and therefore subject to the employer's control—paragraph (c) would also render the employer liable for the auditor's failure to file a "documented report" of any "significant deficiency" to OSHA within 15 days, to maintain records of his or her audits for three years, or to make such records available to the U.S. Department of Labor.

For all of these reasons, AGC believes that paragraph (c) would not be a practical and dependable option for any significant number of construction employers.

Qualification by the U.S. Military

As a threshold matter, paragraph (d) is limited to the men and women in uniform. By its terms, it is "[n]ot portable," meaning that it "meets the requirements of paragraph (a) only where the operator is employed by (and operating the equipment for) the employer that issued the qualification." See Section 1427(m). To any operator to which paragraph (d) might apply, the military would be "the employer that issued the qualification." It follows that any operator qualified by the military would be qualified to operate a crane or derrick only for the military. (Endnote 3).

Licensing by a Government Entity

Whether paragraph (e) provided any practical option for construction contractors would depend entirely on how state and local governments responded to it. This provision would permit employers to use state or local government agencies to test and license their crane and derrick operators. Employers, however, could use only the government agencies that had volunteered to perform those tasks.

In some ways, paragraph (e) is superior to paragraphs (b) and (c). The state or local agency would have to be the one that "issue[d] operator licenses for operating [relevant] equipment," and it would have to qualify for accreditation as a "government accredited crane/derrick operator testing organization." But the "government authority that overs[aw]" the agency, and not any private entity, would determine whether the agency met the substantive criteria for accreditation. Unlike paragraphs (b) and (c), paragraph (e) makes no direct or indirect reference to a "nationally recognized accrediting agency."

Paragraph (e) does not, however, go far enough to save Section 1427. It would not—and probably could not—require any state or local agency to test or license operators. It would not—and probably could not—provide any positive incentives for any such agency to perform those tasks. It would not—and probably could not—even reimburse any government agency that volunteered to perform those tasks.

Many state and local budgets are already tight, and neither OSHA nor other members of C–DAC have given AGC any reason to expect that any significant number of state or local agencies would be likely to step forward. AGC believes that some would do so but doubts that the number would be high enough, or their distribution broad enough, to meet what would be a truly nationwide demand for the testing and certification of crane and derrick operators. A government license issued under paragraph (e) would satisfy section 1427 "only within the jurisdiction" of the agency that issued it, and at best, AGC would expect an irrational patchwork of options for crane and derrick operators and their employers across the country.

Operator Training

AGC also believes that Section 1427 would put employers that provided hands-on training for crane or derrick operators at great and ultimately uncontrollable risk of liability for any accidents that their trainees or apprentices might cause, and could become a legal deterrent to such training. The relevant paragraph of the proposed standard is paragraph (f), entitled "Pre-qualification/certification training period." In subparagraph (f)(2)(i), that provision states that a trainee or apprentice "shall be provided with sufficient training prior to operating the equipment to enable the trainee to operate the equipment safely* * *" In subparagraph (f)(2)(ii), that provision adds that "[t]he tasks performed by the trainee/apprentice while operating the equipment shall be within the trainee's ability." In subparagraph (f)(2)(iv)(C), that provision further provides that "[t]he specific tasks that the trainee/apprentice will perform during [any fifteen minute] break" that his or her supervisor may take "are within the trainee/apprentice's abilities."

If these were merely statements of principle, AGC would wholeheartedly support them. AGC completely agrees that trainees and apprentices should have any prior training that they require to operate the equipment safely. AGC completely agrees that all tasks that a trainee or apprentice actually performs—at any time—should be within his or her ability.

The problem is that these would be legal requirements, and not merely goals to which contractors should aspire. As written, they would render contractors legally liable not for failing to make every reasonable effort—or even every conceivable effort—to provide such prior training, or to limit the tasks that a trainee or apprentice actually performed. In substance and effect, paragraph (f) would render contractors strictly liable for outcomes that contractors could not guarantee. If a trainee or apprentice caused an accident, it would necessarily follow that the individual did not have prior training "sufficient" to operate the equipment safely. It would also follow that the trainee or apprentice had actually performed a task not "within" his or her "ability."

Neither construction workers nor their supervisors are any less human than anyone else. No one can guarantee that others will not make mistakes, or that they will always follow instructions. Nor is an individual's prior training, or his or her current abilities, something that one can measure with great precision. Of course, all construction contractors should make a very strong effort to prevent accidents. The human toll of any accident involving a crane or derrick can easily exceed anything that anyone would ever want to bear. Holding employers strictly liable for any accident that a trainee or apprentice may cause would, however, punish the good as well as the bad actors, and in the end, AGC fears that it would discourage useful training and hinder the effort to protect construction workers. One could well expect employers to provide no more than the minimum training necessary to satisfy the proposed standard, and whenever feasible, to engage third parties to perform that function.

Significant Omissions From the Proposed Standard

AGC also encourages OSHA to reconsider the broader question that Section 1427 raises. At the heart of that provision lies the assumption that elaborate procedures for testing and certifying crane and derrick operators would have benefits commensurate with their cost. The proposed requirements for such testing and certification are above and beyond the broader training requirements that C–DAC embedded—with AGC's concurrence—in Section 1430. In many other instances, OSHA requires employers to train their employees, and even to ensure that the individuals employed to perform certain functions are "competent persons." In these other instances, OSHA has not, however, found it necessary to go so far as to require sophisticated testing and formal certification.

Paragraph (k) of Section 1427 contemplates a four-year "phase-in" for the testing and certification procedures, and indeed, for that substantial phase-in period, even the authors of Section 1427 considered it sufficient to require operators "to be competent," to "be provided the necessary training," and to be "evaluated to confirm that he/she understands the information provided in the training." Under these circumstances, AGC would consider it more than fair to request that OSHA take a hard look at the actual costs and benefits of ever going beyond paragraph (k)—to the point of requiring testing and certification by third parties beyond the federal government's supervision or direct control. (Endnote 4).

AGC would simply add that the costs of the proposed testing and certification could be social as well as financial. The construction workforce is not entire English-speaking. AGC is also concerned that Section 1427 could have the unintended but clearly detrimental effect of limiting employment opportunities for competent crane operators who do not speak English. AGC is unaware of any organization that currently provides nationally recognized testing for crane or derrick operators in any language other than English.

* * * * *

Conclusion

In closing, AGC would like to thank you for the opportunity to serve on C–DAC. Crane and derrick safety is extremely important to AGC's members, and the association greatly appreciated the chance to participate in the committee's deliberations.

In the end, C–DAC succeeded in reaching agreement on all but one of the provisions included in the standard that the committee proposed to OSHA. AGC could not support

that one provision because it is too restrictive. AGC supported the proposed requirements for the training of crane and derrick operators, and AGC could even support a carefully tailored and clear requirement that construction contractors employ "competent" operators for their cranes and derricks. AGC is far less certain that the benefits of mandating elaborate procedures for the sophisticated testing and formal certification of crane and derrick operators would ever outweigh the great cost of doing so.

* * * * *

AGC supports OSHA's effort to improve crane and derrick safety, and believes that C–DAC has greatly contributed to that effort, but maintains that Section 1427 of the proposed standard requires serious reconsideration.

Sincerely,

/S/

Brian H. Murphy, P.E., C.S.P. AGC C–DAC Representative.

Endnote 1: On that one section, the National Association of Home Builders also parted company with the other members of the committee.

Endnote 2: Presumably, the authors of this provision intended to equate "licensing" with "qualification" or "certification."

Endnote 3: AGC has received reports that some members of C–DAC were led to believe that a military certification would be valid for a construction contractor working for the military on a military installation. The wording of paragraph (d) is, however, clear and makes no reference to military projects or installations, or to the contractors construction such projects at such locations. By the express and unambiguous terms of paragraph (d), a military certification is "[n]ot portable" and in paragraph (m) by definition applies "only where the operator is employed by (and operating the equipment for) the employer that issued the certification."

Nor is it clear that OSHA could justify such awkwardly limited portability for military certifications. If OSHA rewrote paragraph (d) to provide for portability then whether a construction contractor could use a military certification to satisfy section 1427 would depend entirely on (1) whether the project owner is a branch of the military and (2) whether the project is located on a military installation. Those two factors would not, however, have any obvious bearing on the merits of the process that the military used to certify crane or derrick operators, or the knowledge or skills that such operators actually possessed. AGC cannot readily identify any rational basis for rendering a military certification portable to a contractor working for the military project on one of its installations but not portable to even the same contractor when working for a different owner, or simply across the street.

In any event, paragraph (d) could not begin to solve the larger problem. Even if it provided for portability to construction contractors working for the military on military installations, paragraph (d) would remain far too limited to provide an option for the overwhelming majority of construction contractors. The military and its installations account for only a small fraction of the contractors and projects that the new standard would cover.

Endnote 4: AGC would also encourage OSHA to compare paragraph (k) with other standards that require construction contractors to employ "competent persons" to perform certain functions. AGC believes that many if not most of those other provisions define the required competence far more precisely. AGC presumes that paragraph (k) refers to competence in dealing with the various subjects listed in paragraph (j) of section 1427, or perhaps paragraph (c) of Section 1430, but paragraph (k) of section 1427 does not cross-reference either of those other provisions or otherwise define the required competence. Nor does it define the "required training."

[End of Murphy comments.]

OSHA notes that Mr. Murphy indicated in his letter that proposed § 1926.1427 would apply to derricks. However, under paragraph (q) of proposed §§ 1926.1436 *Derricks,* § 1926.1427 would not apply to derricks. This is explained in more detail below in the discussion on proposed § 1926.1436.

Operator qualification/certification was the only section of the C–DAC document for which there were dissenting committee members (as noted above, two members dissented: Mr. Murphy and Mr. Steele). In his letter, Mr. Murphy addressed a number of issues associated with this subject, such as questioning the need for, and practicality of, limiting an employer's operator qualification/certification options to those that require the involvement of independent third parties. There was considerable discussion by C–DAC on this subject and its many associated issues, including the degree of portability of a qualification/certification. The Agency requests public comment on these issues.

Physical Qualifications and Substance Abuse Testing

Physical Qualifications

Section 5–3.1 of ANSI B30.5–1968 contains criteria for operator vision and hearing, disqualification for a "history of epilepsy" or a "disabling heart condition," and a general statement that "when he is physically or mentally unfit, an operator shall not engage in the operation of his equipment." Subpart N at § 1926.550(b)(2) states that "all crawler, truck, or locomotive cranes in use shall meet the applicable requirements for design, inspection, construction, testing, maintenance and operation as prescribed in the ANSI B30.5–1968 * * *."

In a May 8, 1981 letter of interpretation to Mr. A. Bennett Hill Jr. (OSHA–2007–0066–0016), OSHA stated that:

> It is the interpretation of OSHA that the physical qualifications requirements incorporated by reference in 29 CFR 1926.550 do not apply to operators of equipment covered by those standards.

In other words, OSHA interpreted the incorporation by reference in § 1926.550(b)(2) for "operation" as referring to how the crane was to be operated, not to who was operating it. The Agency therefore has taken the position that the incorporation by reference excludes the physical criteria listed above.

C–DAC considered whether to include in this proposed standard provisions that would require equipment operators to meet particular physical qualifications. After considering various possible approaches, including those in current industry consensus standards, the Committee decided that it would be very difficult, and likely unnecessary, to identify minimum physical requirements that would be appropriate.

First, the physical demands of equipment vary significantly depending on the type and, in some cases, age of the equipment. For example, some equipment is operated largely by electronic controls. In contrast, older "friction cranes" have pedal controls that can require significant strength and stamina to operate. Some equipment is air conditioned whereas other equipment is not. A requirement regarding physical qualifications would have to account for these types of differences.

Second, establishing physical qualifications that would appropriately account for the effect of medical conditions would be a complex undertaking. The Committee ultimately determined that, in light of its members' experience that accidents caused by problems associated with the operator's physical/medical condition are rare, the issue of physical qualifications did not need to be addressed by this standard.

Substance Abuse Testing

The Committee also considered whether to include mandatory substance abuse testing for equipment operators and others, such as signal persons, whose jobs affect safety. OSHA informed the Committee that the case law requires that any substance abuse testing requirements included in the proposal would have to meet constitutional safeguards.[70] Because the

[70] See *Skinner v. Railway Labor Executives' Ass'n,* 109 S. Ct. 1402 (1989) and *International*

U.S. Department of Transportation (DOT) already has substance abuse requirements and designed them to meet these safeguards, C–DAC considered whether to incorporate DOT regulations on controlled substance testing, Title 49 CFR part 382 and Title 49 CFR part 40, into the proposed rule.

The DOT regulations govern commercial drivers and are designed to protect public highway safety. Under these requirements an employer is required to establish a program for substance abuse testing. This program must include an employer's policy statement, supervisory education and training, controlled substances and (optional) alcohol testing program, evaluation of driver, and recording keeping. Under the DOT requirements the controlled substances and alcohol testing program must include six different types of testing, which include: Pre-employment, reasonable suspicion, post-accident, random, return to duty and follow up testing.

After researching the DOT regulations and several discussions with DOT representatives, OSHA presented information to C–DAC on the procedural and substantive aspects of the DOT regulations, including the administrative requirements, the types of testing by employers, and optional alcohol testing. Committee members discussed implementation and enforcement concerns such as an employer's inability to "stand down" a crane operator based on an unconfirmed test result, until a positive result is verified by a medical review officer. The parallel DOT requirement prohibits an employer from:

> temporarily removing an employee from the performance of a safety-sensitive function based only on a report from a laboratory to the MRO (medical review officer) of a confirmed positive test for a drug or drug metabolite, an adulterated test, or a substituted test, before the MRO has completed verification of the test result.

Committee members were concerned that including a substance testing provision in this standard would restrict an employer's ability to suspend an operator who tested positive pending confirmation of the result. Committee members believed that many employers already have voluntarily instituted substance abuse testing programs. They believed that employers are able to judge whether an operator who tested positive presents a risk to workers on the site and should be able to remove an operator immediately if, in the employer's judgment, the operator presents such a risk.

In short, the Committee balanced the potential benefits from a requirement for substance abuse testing that would have more restrictive procedures against the fact that many employers already have their own programs in place that, in C–DAC's view, may be more protective than what could be enacted as an OSHA requirement. C–DAC concluded that it would be better not to include a substance abuse requirement.

Section 1428 Signal Person Qualifications

As discussed under § 1926.1419, *Signals—general requirements,* the safety of equipment operations depends in many situations on signals given to the operator. It is critical that the operator understand the signals given, and the signal person must therefore be able to give clear, accurate and appropriate signals that unambiguously convey the needed information to the operator. The Committee was concerned that some signal persons are not able to recognize the hazards involved with certain crane operations, do not, in some cases, understand what it is that the crane needs to do to accomplish the task, and do not know how to give the appropriate signals. This poses hazards, such as struck-by and crushed-by hazards, due to either miscommunication or the communication of instructions that are inappropriate.

An example of the type of accident that can be caused by miscommunication from not knowing the appropriate signals is as follows: The signal person intends to indicate to the operator to hoist up, since the load needs to be raised straight up. However, the signal person uses the standard signal for booming up in the mistaken belief that this signal is for hoisting up. A struck-by or crushed-by incident could result because, when booming up, the load will move laterally as well as vertically.

A failure to understand what it is that the crane needs to do to accomplish a task can also lead to struck-by or crushed-by incidents. For example, as a crane booms down, boom deflection tends to increase, which has the effect of lowering the load more than if there were no boom deflection. If the signal person is unfamiliar with this boom characteristic, he or she may fail to signal in time for the load to stop at the correct point or may cause the load to descend too quickly.

The Committee concluded that to prevent such accidents it is necessary to establish qualification criteria that would have to be met in order for an individual to serve as a signal person (that criteria is set out in proposed § 1926.1428(c), discussed below). The employer would have the option of using one of two methods for ensuring that these criteria were met. Under Option (1) (proposed § 1926.1428(a)(1)), the signal person would have documentation from a third party qualified evaluator showing that the evaluator had determined that the signal person meets the requirements of § 1926.1428(c).

This qualification would be portable, that is, any employer could rely on such documentation to show that a signal person meets the criteria. C–DAC believed that such portability would be appropriate because of the independence and expertise of the third party evaluator.

Under Option (2) (proposed § 1926.1428(a)(2)), an employer's own qualified evaluator would have determined that a signal person meets the qualification requirements. Since such a determination would not be done by an independent entity, other employers would not have a basis to assume that the assessment had been done correctly. Therefore, a qualification under this option would not be portable; other employers would not be permitted to rely upon it to show that the signal person meets these requirements.

The term "qualified evaluator" used in proposed § 1926.1428(a)(2) is defined in proposed § 1926.1401 as "a person employed by the signal person's employer who has demonstrated that he/she is competent in accurately assessing whether individuals meet the Qualification Requirements in this Subpart for a signal person." In reviewing the C–DAC document, the Agency realized that the Committee had not provided a definition for the term "third party qualified evaluator," which is used in proposed § 1926.1428(a)(1). OSHA has therefore added the following definition for this term:

> An entity that, due to its independence and expertise, has demonstrated that it is competent in accurately assessing whether individuals meet the Qualification Requirements in this Subpart for a signal person.

The Agency requests public comment on whether this is an appropriate definition for this term.

Under proposed paragraph (a)(3), the documentation for whichever Option is used (that is, Option (1) or (2)) of this section, would have to be available while the signal person is employed by the employer. With respect to an

Brotherhood of Teamsters v. Department of Transportation, 932 F.2d 1292 (9th Cir. 1991).

neither feasible to erect such barriers on the ground nor on the equipment, the hazard areas shall be clearly marked by a combination of warning signs (such as "Danger—Swing/Crush Zone" or "Danger—This Thing's Gonna Swing and Crunch You—Zone") and high visibility markings on the equipment that identify the hazard areas. In addition, the employer shall train the employees to understand what these markings signify.

(3) *Protecting employees in the hazard area.*

(i) Before an employee goes to a location in the hazard area that is out of view of the operator, the employee (or someone instructed by the employee) must ensure that the operator is informed that he/she is going to that location.

(ii) Where the operator knows that an employee went to a location covered by paragraph (a)(1) of this section, the operator shall not rotate the superstructure until the operator:

(A) Gives a warning that is understood by the employee as a signal that the superstructure is about to be rotated and allows time for the employee to get to a safe position, or

(B) Is informed in accordance with a pre-arranged system of communication that the employee is in a safe position.

(b) *Multiple equipment coordination.* Where any part of a crane/derrick is within the working radius of another crane/derrick, the controlling entity shall institute a system to coordinate operations. If there is no controlling entity, the employers shall institute such a system.

§ 1926.1425 Keeping clear of the load.

(a) Where available, hoisting routes that minimize the exposure of employees to hoisted loads shall be used, to the extent consistent with public safety.

(b) While the operator is not moving a suspended load, no employee shall be within the fall zone, except for employees:

(1) Engaged in hooking, unhooking or guiding a load, or

(2) Engaged in the initial attachment of the load to a component or structure, or

(3) Operating a concrete hopper or concrete bucket.

(c) When employees are engaged in hooking, unhooking, or guiding the load, or in the initial connection of a load to a component or structure and are within the fall zone, the following criteria shall be met:

(1) The materials being hoisted shall be rigged to prevent unintentional displacement.

(2) Hooks with self-closing latches or their equivalent shall be used. Exception: "J" hooks are permitted to be used for setting wooden trusses.

(3) The materials shall be rigged by a qualified rigger.

(d) Receiving a load. Only employees needed to receive a load shall be permitted to be within the fall zone when a load is being landed.

(e) During a tilt-up or tilt-down operation:

(1) No employee shall be directly under the load.

(2) Only employees essential to the operation shall be in the fall zone (but not directly under the load).

Note to § 1926.1425: Boom free fall is prohibited when an employee is in the fall zone of the boom or load, and load line free fall is prohibited when an employee is directly under the load; see § 1926.1426.

§ 1926.1426 Free fall and controlled load lowering.

(a) *Boom free fall prohibitions.*

(1) The use of equipment in which the boom is designed to free fall (live boom) is prohibited in each of the following circumstances:

(i) An employee is in the fall zone of the boom or load.

(ii) An employee is being hoisted.

(iii) The load or boom is directly over a power line, or over any part of the area extending the Table A (of § 1926.1408) clearance distance to each side of the power line.

(iv) The load is over a shaft.

(v) The load is over a cofferdam, except where there are no employees in the fall zone.

(vi) Lifting operations are taking place in a refinery or tank farm.

(2) The use of equipment in which the boom is designed to free fall (live boom) is permitted only where none of the circumstances listed in paragraph (a)(1) of this section are present and:

(i) The equipment was manufactured prior to October 31, 1984, or

(ii) The equipment is a floating crane/derrick or a land crane/derrick on a vessel/flotation device.

(b) *Preventing boom free fall.* Where the use of equipment with a boom that is designed to free fall (live boom) is prohibited (see paragraph (a)(1) of this section), the boom hoist shall have a secondary mechanism or device designed to prevent the boom from falling in the event the primary system used to hold or regulate the boom hoist fails, as follows:

(1) Friction drums shall have:

(i) A friction clutch and, in addition, a braking device, to allow for controlled boom lowering.

(ii) A secondary braking or locking device, which is manually or automatically engaged, to back-up the primary brake while the boom is held (such as a secondary friction brake or a ratchet and pawl device).

(2) Hydraulic drums shall have an integrally mounted holding device or internal static brake to prevent boom hoist movement in the event of hydraulic failure.

(3) Neither clutches nor hydraulic motors shall be considered brake or locking devices for purposes of this subpart.

(4) Hydraulic boom cylinders shall have an integrally mounted holding device.

(c) *Preventing uncontrolled retraction.* Hydraulic telescoping booms shall have an integrally mounted holding device to prevent the boom from retracting in the event of hydraulic failure.

(d) *Load line free fall.* In each of the following circumstances, controlled load lowering is required and free fall of the load line hoist is prohibited:

(1) An employee is directly under the load.

(2) An employee is being hoisted.

(3) The load is directly over a power line, or over any part of the area extending the Table A clearance distance to each side of the power line.

(4) The load is over a shaft or cofferdam.

§ 1926.1427 Operator qualification and certification.

(a) The employer must ensure that, prior to operating any equipment covered under § 1926.1400, the operator is either qualified or certified to operate the equipment in accordance with one of the options in paragraphs (b) through (e) of this section, or is operating the equipment during a training period in accordance with paragraph (f) of this section. Exceptions: Operator qualification or certification under this section is not required for operators of derricks (see § 1926.1436), sideboom cranes (see § 1926.1440), and equipment with a rated hoisting/lifting capacity of 2,000 pounds or less (see § 1926.1441).

(b) *Option 1: Certification by an accredited crane/derrick operator testing organization.*

(1) For a testing organization to be considered accredited to certify operators under this subpart, it must:

(i) Be accredited by a nationally recognized accrediting agency based on that agency's determination that industry recognized criteria for written testing materials, practical examinations, test administration, grading, facilities/equipment and personnel have been met.

(ii) Administer written and practical tests that:

(A) Assess the operator applicant regarding, at a minimum, the knowledge and skills listed in paragraphs (j)(1) and (2) of this section.

(B) Provide different levels of certification based on equipment capacity and type.

(iii) Have procedures for operators to re-apply and be re-tested in the event an operator applicant fails a test or is decertified.

(iv) Have testing procedures for re-certification designed to ensure that the operator continues to meet the technical knowledge and skills requirements in paragraphs (j)(1) and (2) of this section.

(v) Have its accreditation reviewed by the nationally recognized accrediting agency at least every three years.

(2) A certification issued under this option is portable.

(3) A certification issued under this paragraph (b) is valid for 5 years.

(c) *Option 2: Qualification by an audited employer program.* The employer's qualification of its employee shall meet the following requirements:

(1) The written and practical tests shall be either:

(i) Developed by an accredited crane/derrick operator testing organization (see paragraph (b) of this section), or

(ii) Approved by an auditor in accordance with the following requirements:

(A) The auditor is certified to evaluate such tests by an accredited crane/derrick operator testing organization (see paragraph (b) of this section).

(B) The auditor is not an employee of the employer.

(C) The approval shall be based on the auditor's determination that the written and practical tests meet nationally recognized test development criteria and are valid and reliable in assessing the operator applicants regarding, at a minimum, the knowledge and skills listed in paragraphs (j)(1) and (2) of this section.

(2) *Administration of tests.*

(i) The written and practical tests shall be administered under circumstances approved by the auditor as meeting nationally recognized test administration standards.

(ii) The auditor shall be certified to evaluate the administration of the written and practical tests by an accredited crane/derrick operator testing organization (see paragraph (b) of this section).

(iii) The auditor shall not be an employee of the employer.

(iv) The audit shall be conducted in accordance with nationally recognized auditing standards.

(3) The employer program shall be audited within 3 months of the beginning of the program and every 3 years thereafter.

(4) The employer program shall have testing procedures for re-qualification designed to ensure that the operator continues to meet the technical knowledge and skills requirements in paragraphs (j)(1) and (2) of this section. The re-qualification procedures shall be audited in accordance with paragraphs (c)(1) and (2) of this section.

(5) *Deficiencies.* If the auditor determines that there is a significant deficiency ("deficiency") in the program, the employer shall ensure that:

(i) No operator is qualified until the auditor confirms that the deficiency has been corrected.

(ii) The program is audited again within 180 days of the confirmation that the deficiency was corrected.

(iii) The auditor files a documented report of the deficiency to the appropriate Regional Office of the Occupational Safety and Health Administration within 15 days of the auditor's determination that there is a deficiency.

(iv) Records of the audits of the employer's program are maintained by the auditor for three years and are made available by the auditor to the Secretary of Labor or her designated representative upon request.

(6) A qualification under this paragraph (c) is:

(i) Not portable.

(ii) Valid for 5 years.

(d) *Option 3. Qualification by the U.S. military.*

(1) For purposes of this section, an operator is considered qualified if he/she has a current operator qualification issued by the U.S. military for operation of the equipment.

(2) A qualification under this paragraph (d) is:

(i) Not portable.

(ii) Valid for the period of time stipulated by the issuing entity.

(e) *Option 4. Licensing by a government entity.*

(1) For purposes of this section, a government licensing department/office that issues operator licenses for operating equipment covered by this standard is considered a government accredited crane/derrick operator testing organization if the criteria in paragraph (e)(2) of this section are met.

(2) *Licensing criteria.*

(i) The requirements for obtaining the license include an assessment, by written and practical tests, of the operator applicant regarding, at a minimum, the knowledge and skills listed in paragraphs (j)(1) and (2) of this section.

(ii) The testing meets industry recognized criteria for written testing materials, practical examinations, test administration, grading, facilities/equipment and personnel.

(iii) The government authority that oversees the licensing department/office, has determined that the requirements in paragraphs (e)(2)(i) and (ii) of this section have been met.

(iv) The licensing department/office has testing procedures for re-licensing designed to ensure that the operator continues to meet the technical knowledge and skills requirements in paragraphs (j)(1) and (2) of this section.

(3) A license issued by a government accredited crane/derrick operator testing organization that meets the requirements of this option:

(i) Meets the operator qualification requirements of this section for operation of equipment only within the jurisdiction of the government entity.

(ii) Is valid for the period of time stipulated by the licensing department/office, but no longer than 5 years.

(f) *Pre-qualification/certification training period.*

(1) An employee who is not qualified or certified under this section is permitted to operate equipment where the requirements of paragraph (f)(2) of this section are met.

(2) An employee who has not passed both the written and practical tests required under this section is permitted to operate equipment as part of his/her training where the following requirements are met:

(i) The employee ("trainee/apprentice") shall be provided with sufficient training prior to operating the equipment to enable the trainee to operate the equipment safely under limitations established by this section (including continuous supervision) and any additional limitations established by the employer.

(ii) The tasks performed by the trainee/apprentice while operating the equipment shall be within the trainee's ability.

(iii) *Supervisor.* While operating the equipment, the trainee/apprentice shall be continuously supervised by an individual ("operator's supervisor") who meets the following requirements:

(A) The operator's supervisor is an employee or agent of the trainee's/apprentice's employer.

(B) The operator's supervisor is either a certified operator under this section, or has passed the written portion of a certification test under one of the options in paragraphs (b) through (e) of this section, and is familiar with the proper use of the equipment's controls.

(C) While supervising the trainee/apprentice, the operator's supervisor performs no tasks that detract from the

supervisor's ability to supervise the trainee/apprentice.

(D) For equipment other than tower cranes: the operator's supervisor and the trainee/apprentice shall be in direct line of sight of each other. In addition, they shall communicate verbally or by hand signals. For tower cranes: the operator's supervisor and the trainee/apprentice shall be in direct communication with each other.

(iv) *Continuous supervision.* The trainee/apprentice shall be supervised by the operator's supervisor at all times, except for short breaks where the following are met:

(A) The break lasts no longer than 15 minutes and there is no more than one break per hour.

(B) Immediately prior to the break the operator's supervisor informs the trainee/apprentice of the specific tasks that the trainee/apprentice is to perform and limitations that he/she is to adhere to during the operator supervisor's break.

(C) The specific tasks that the trainee/apprentice will perform during the operator supervisor's break are within the trainee's/apprentice's abilities.

(v) The trainee/apprentice shall not operate the equipment in any of the following circumstances:

(A) If any part of the equipment, load line or load (including rigging and lifting accessories), if operated up to the equipment's maximum working radius in the work zone (see § 1926.1408(a)(1)), could get within 20 feet of a power line that is up to 350 kV, or within 50 feet of a power line that is over 350 kV.

(B) If the equipment is used to hoist personnel.

(C) In multiple-equipment lifts.

(D) If the equipment is used over a shaft, cofferdam, or in a tank farm.

(E) For multiple-lift rigging, except where the operator's supervisor determines that the trainee's/apprentice's skills are sufficient for this high-skill work.

(g) Under this section, a testing entity is permitted to provide training as well as testing services as long as the criteria of the applicable accrediting agency (in the option selected) for an organization providing both services are met.

(h) Written tests under this section are permitted to be administered verbally, with answers given verbally, where the operator candidate:

(1) Passes a written demonstration of literacy relevant to the work.

(2) Demonstrates the ability to use the type of written manufacturer procedures applicable to the class/type of equipment for which the candidate is seeking certification.

(i) [*Reserved.*]

(j) *Certification criteria.* Qualifications and certifications must be based, at a minimum, on the following:

(1) A determination through a written test that:

(i) The individual knows the information necessary for safe operation of the specific type of equipment the individual will operate, including the following:

(A) The controls and operational/performance characteristics.

(B) Use of, and the ability to calculate (manually or with a calculator), load/capacity information on a variety of configurations of the equipment.

(C) Procedures for preventing and responding to power line contact.

(D) Technical knowledge similar to the subject matter criteria listed in Appendix E of this subpart applicable to the specific type of equipment the individual will operate. Use of the Appendix E of this subpart criteria meets the requirements of this provision.

(E) Technical knowledge applicable to:

(*1*) The suitability of the supporting ground and surface to handle expected loads.

(*2*) Site hazards.

(*3*) Site access.

(F) This subpart, including applicable incorporated materials.

(ii) The individual is able to read and locate relevant information in the equipment manual and other materials containing information referred to in paragraph (j)(1)(i) of this section.

(2) A determination through a practical test that the individual has the skills necessary for safe operation of the equipment, including the following:

(i) Ability to recognize, from visual and audible observation, the items listed in § 1926.1412(d) (shift inspection).

(ii) Operational and maneuvering skills.

(iii) Application of load chart information.

(iv) Application of safe shut-down and securing procedures.

(k) *Phase-in.*

(1) As of the effective date of this subpart, until four years after the effective date of the subpart, the following requirements apply:

(i) Operators of equipment covered by this standard are required to be competent to operate the equipment safely.

(ii) Where an employee assigned to operate machinery does not have the required knowledge or ability to operate the equipment safely, the employee shall be provided with the necessary training prior to operating the equipment. The employer shall ensure that the operator is evaluated to confirm that he/she understands the information provided in the training.

(2) The effective date of paragraphs (a) through (j) and (m) of this section is [4 YEARS AFTER THE EFFECTIVE DATE OF THE FINAL RULE].

(l) [*Reserved.*]

(m) *Definitions.*

(1) "*Portable.*" Any employer of an operator with a certification that is portable under this section meets the requirements of paragraph (a) of this section with respect to that operator.

(2) "*Not portable.*" Where an operator has a qualification that is not portable under this section, the qualification meets the requirements of paragraph (a) of this section only where the operator is employed by (and operating the equipment for) the employer that issued the qualification.

§ 1926.1428 Signal person qualifications.

(a) The employer of the signal person shall ensure that each signal person meets the Qualification Requirements (paragraph (c) of this section) prior to giving any signals. This requirement shall be met by using either Option (1) or Option (2) (see paragraphs (a)(1) and (a)(2) of this section).

(1) *Option (1)—Third party qualified evaluator.* The signal person has documentation from a third party qualified evaluator showing that the signal person meets the Qualification Requirements (see paragraph (c) of this section).

(2) *Option (2)—Employer's qualified evaluator.* The employer has its qualified evaluator assess the individual and determine that the individual meets the Qualification Requirements (see paragraph (c) of this section) and provides documentation of that determination. An assessment by an employer's qualified evaluator under this option is not portable—other employers are not permitted to use it to meet the requirements of this section.

(3) The documentation for whichever option is used shall be available while the signal person is employed by the employer.

(b) If subsequent actions by the signal person indicate that the individual may not meet the Qualification Requirements (see paragraph (c) of this section), the employer must not allow the individual to continue working as a signal person until retraining is provided and a reassessment is made in accordance with paragraph (a) of this section that confirms that the individual meets the Qualification Requirements.

(c) *Qualification Requirements.* Each signal person must:

ASME B30.3-2004
(Revision of ASME B30.3-1996)

Construction Tower Cranes

Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

ASME B30.3-2004
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AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers
Three Park Avenue • New York, NY 10016

Date of Issuance: November 15, 2004

The next edition of this Standard is scheduled for publication in 2007. There will be no addenda issued to this edition.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. Interpretations are published on the ASME Web site under the Committee Pages at http://www.asme.org/codes/ as they are issued, and will also be published within the next edition of the Standard.

The American Society of Mechanical Engineers
Three Park Avenue, New York, NY 10016-5990

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FOREWORD

This American National Standard, Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings, has been developed under the procedures accredited by the American National Standards Institute (formerly the United States of America Standards Institute). This Standard had its beginning in December 1916 when an eight-page Code of Safety Standards for Cranes, prepared by an ASME Committee on the Protection of Industrial Workers, was presented to the annual meeting of the ASME.

Meetings and discussions regarding safety on cranes, derricks, and hoists were held from 1920 to 1925, involving the ASME Safety Code Correlating Committee, the Association of Iron and Steel Electrical Engineers, the American Museum of Safety, the American Engineering Standards Committee (later changed to American Standards Association and subsequently to the USA Standards Institute), Department of Labor—State of New Jersey, Department of Labor and Industry—State of Pennsylvania, and the Locomotive Crane Manufacturers Association. On June 11, 1925, the American Engineering Standards Committee approved the ASME Safety Code Correlating Committee's recommendation and authorized the project with the U.S. Department of the Navy, Bureau of Yards and Docks, and ASME as sponsors.

In March 1926, invitations were issued to 50 organizations to appoint representatives to a Sectional Committee. The call for organization of this Sectional Committee was sent out October 2, 1926, and the committee organized November 4, 1926, with 57 members representing 29 national organizations. The Safety Code for Cranes, Derricks, and Hoists, ASA B30.2-1943, was created from the eight-page document referred to in the first paragraph. This document was reaffirmed in 1952 and widely accepted as a safety standard.

Due to changes in design, advancement in techniques, and general interest of labor and industry in safety, the Sectional Committee, under the joint sponsorship of ASME and the Naval Facilities Engineering Command, U.S. Department of the Navy, was reorganized as an American National Standards Committee on January 31, 1962, with 39 members representing 27 national organizations.

The format of the previous code was changed so that separate volumes (each complete as to construction and installation; inspection, testing, and maintenance; and operation) would cover the different types of equipment included in the scope of B30.

In 1982, the Committee was reorganized as an Accredited Organization Committee, operating under procedures developed by ASME and accredited by the American National Standards Institute.

This Standard presents a coordinated set of rules that may serve as a guide to government and other regulatory bodies and municipal authorities responsible for the guarding and inspection of the equipment falling within its scope. The suggestions leading to accident prevention are given both as mandatory and advisory provisions; compliance with both types may be required by employers of their employees.

In case of practical difficulties, new developments, or unnecessary hardship, the administrative or regulatory authority may grant variances from the literal requirements or permit the use of other devices or methods, but only when it is clearly evident that an equivalent degree of protection is thereby secured. To secure uniform application and interpretation of this Standard, administrative or regulatory authorities are urged to consult the B30 Committee, in accordance with the format described in Section III, before rendering decisions on disputed points.

This volume of the Standard, which was approved by the B30 Committee and by ASME, was approved by ANSI and designated as an American National Standard on January 22, 2004.

Safety codes and standards are intended to enhance public safety. Revisions result from committee consideration of factors such as technological advances, new data, and changing environmental and industry needs. Revisions do not imply that previous editions were inadequate.

ASME B30 COMMITTEE
Safety Standards for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings

(The following is the roster of the Committee at the time of approval of this Standard.)

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SAFETY STANDARD FOR CABLEWAYS, CRANES, DERRICKS, HOISTS, HOOKS, JACKS, AND SLINGS

(04)

B30 SERIES INTRODUCTION

GENERAL

This Standard is one of a series of safety standards on various subjects which have been formulated under the general auspices of the American National Standards Institute. One purpose of the Standard is to serve as a guide to governmental authorities having jurisdiction over subjects within the scope of the Standard. It is expected, however, that the Standard will find a major application in industry, serving as a guide to manufacturers, purchasers, and users of the equipment.

For the convenience of the user, the Standard has been divided into separate volumes:

B30.1 Jacks
B30.2 Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)
B30.3 Construction Tower Cranes
B30.4 Portal, Tower, and Pedestal Cranes
B30.5 Mobile and Locomotive Cranes
B30.6 Derricks
B30.7 Base Mounted Drum Hoists
B30.8 Floating Cranes and Floating Derricks
B30.9 Slings
B30.10 Hooks
B30.11 Monorails and Underhung Cranes
B30.12 Handling Loads Suspended From Rotorcraft
B30.13 Storage/Retrieval (S/R) Machines and Associated Equipment
B30.14 Side Boom Tractors
B30.15 Mobile Hydraulic Cranes
Note: B30.15-1973 has been withdrawn. The revision of B30.15 is included in the latest edition of B30.5.
B30.16 Overhead Hoists (Underhung)
B30.17 Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Underhung Hoist)
B30.18 Stacker Cranes (Top or Under Running Bridge, Multiple Girder With Top or Under Running Trolley Hoist)
B30.19 Cableways
B30.20 Below-the-Hook Lifting Devices
B30.21 Manually Lever Operated Hoists
B30.22 Articulating Boom Cranes
B30.23 Personnel Lifting Systems
B30.24 Container Cranes[1]
B30.25 Scrap and Material Handlers
B30.26 Rigging Hardware[1]
B30.27 Material Placement of Systems[1]
B30.28 Balance-Lifting Units[1]

If adopted for governmental use, the references to other national codes and standards in the specific volumes may be changed to refer to the corresponding regulations of the governmental authorities.

The use of cableways, cranes, derricks, hoists, hooks, jacks, and slings is subject to certain hazards that cannot be met by mechanical means but only by the exercise of intelligence, care, and common sense. It is therefore essential to have personnel involved in the use and operation of equipment who are competent, careful, physically and mentally qualified, and trained in the safe operation of the equipment and the handling of the loads. Serious hazards are overloading, dropping or slipping of the load caused by improper hitching or slinging, obstructing the free passage of the load, and using equipment for a purpose for which it was not intended or designed.

The Standards Committee fully realizes the importance of proper design factors, minimum or maximum sizes, and other limiting dimensions of wire rope or chain and their fastenings, sheaves, sprockets, drums, and similar equipment covered by the Standard, all of which are closely connected with safety. Sizes, strengths, and similar criteria are dependent on many different factors, often varying with the installation and uses. These factors depend on the condition of the equipment or material; on the loads; on the acceleration or speed of the ropes, chains, sheaves, sprockets, or drums; on the type of attachments; on the number, size, and arrangement of sheaves or other parts; on environmental conditions causing corrosion or wear; and on many variables that must be considered in each individual case. The rules given in the Standard must be interpreted accordingly, and judgment used in determining their application.

Some of the provisions of this Standard require compliance with information found in manuals or other

[1] B30.24, B30.26, B30.27, and B30.28 are in the developmental stage.

documents supplied by the manufacturer with the equipment. This information includes recommendations, requirements, and instructions (e.g., "the reeving shall be checked for compliance with the recommendations of the manufacturer").

Compliance with the provisions should not preclude the possibility of consulting a qualified person. This is true particularly when: the equipment has been altered, repaired, or modified; the manuals or documents supplied by the manufacturer are no longer available; or the manufacturer or a successor is no longer in business and the manuals are no longer available. However, the purpose of consulting a qualified person shall not be to avoid contacting the manufacturer and using the information supplied by the manufacturer.

The Standards Committee will be glad to receive criticisms of this Standard's requirements and suggestions for its improvement, especially those based on actual experience in application of the rules.

Suggestions for changes to the Standard should be submitted to the Secretary of the B30 Committee, ASME, Three Park Avenue, New York, NY 10016, and should be in accordance with the following format:

(a) cite the specific paragraph designation of the pertinent volume;

(b) indicate the suggested change (addition, deletion, revision, etc.);

(c) briefly state the reason and/or evidence for the suggested change;

(d) submit suggested changes to more than one paragraph in the order that the paragraphs appear in the volume.

The B30 Committee will consider each suggested change in a timely manner in accordance with its procedures.

SECTION I: SCOPE

This Standard applies to the construction, installation, operation, inspection, and maintenance of jacks; power-operated cranes, monorails, and crane runways; power-operated and manually operated derricks and hoists; lifting devices, hooks, and slings; and cableways.

This Standard does not apply to track and automotive jacks, railway or automobile wrecking cranes, shipboard cranes, shipboard cargo-handling equipment, well-drilling derricks, skip hoists, mine hoists, truck body hoists, car or barge pullers, conveyors, excavating equipment, or equipment falling within the scope of the following Committees: A10, A17, A90, A92, A120, B20, B56, and B77.

SECTION II: PURPOSE

This Standard is designed to:

(a) guard against and minimize injury to workers, and otherwise provide for the protection of life, limb, and property by prescribing safety requirements;

(b) provide direction to owners, employers, supervisors, and others concerned with, or responsible for, its application; and

(c) guide governments and other regulatory bodies in the development, promulgation, and enforcement of appropriate safety directives.

SECTION III: INTERPRETATIONS

Upon request, the B30 Committee will render an interpretation of any requirement of the Standard. Interpretations can only be rendered in response to a written request sent to the Secretary of the B30 Committee, ASME, Three Park Avenue, New York, NY 10016.

The request for interpretation should be clear and unambiguous. It is further recommended that the inquirer submit his request utilizing the following format.

Subject: Cite the applicable paragraph number(s) and provide a concise description.

Edition: Cite the applicable edition of the pertinent volume for which the interpretation is being requested.

Question: Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for approval of a proprietary design or situation. The inquirer may also include any plans or drawings which are necessary to explain the question; however, they should not contain any proprietary names or information.

Requests that are not in this format will be rewritten in this format by the Committee prior to being answered, which could change the intent of the original request.

ASME procedures provide for reconsideration of any interpretation when or if additional information which might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME Committee or Subcommittee. ASME does not "approve," "certify," "rate," or "endorse" any item, construction, proprietary device, or activity.

SECTION IV: NEW AND EXISTING INSTALLATIONS

(a) Effective Date. The effective date of this volume for the purpose of defining new and existing installations shall be 1 year after its date of issuance.

(b) New Installations. Construction, installation, inspection, testing, maintenance, and operation of equipment manufactured and facilities constructed after the effective date of this volume shall conform with the mandatory requirements of this volume.

(c) *Existing Installations.* Inspection, testing, maintenance, and operation of equipment manufactured and facilities constructed prior to the effective date of this volume shall be done, as applicable, in accordance with the requirements of this volume.

It is not the intent of this volume to require retrofitting of existing equipment. However, when an item is being modified, its performance requirement shall be reviewed relative to the current volume. If the performance differs substantially, the need to meet the current requirement shall be evaluated by a qualified person selected by the owner (user). Recommended changes shall be made by the owner (user) within 1 year.

SECTION V: MANDATORY AND ADVISORY RULES

Mandatory rules of this volume are characterized by use of the word *shall*. If a provision is of an advisory nature, it is indicated by use of the word *should* and is a recommendation to be considered, the advisability of which depends on the facts in each situation.

SECTION VI: METRIC CONVERSIONS

This Standard contains SI (metric) units as well as U.S. Customary units. The values stated in customary units are to be regarded as the standard. The SI units are a direct (soft) conversion from the customary units.

ASME B30.3-2004
SUMMARY OF CHANGES

Following approval by the ASME B30 Committee and ASME, and after public review, ASME B30.3-2004 was approved by the American National Standards Institute on January 22, 2004.

ASME B30.3-2004 includes editorial changes, revisions, and corrections introduced in ASME B30.3a-1997, B30.3b-1998, and B30.3c-1999, as well as the following changes identified by a margin note, **(04)**.

Page	*Location*	*Change*
viii, x	B30 Series Introduction	General and Section VI revised
1–3, 6, 8	3-0.2.2	(1) Definitions of *base, tower crane; climbing; climbing frame; pitch diameter; service, heavy; service, light; service, normal;* and *trolley* revised (2) Definitions of *base, fixed* and *telescoping* deleted
11	3-1.1.1(e)	Revised
12	3-1.1.3	Revised in its entirety
	3-1.1.4(i)	Revised
13	3-1.1.6(c)	Revised
	3-1.1.6(d)	Revised
14	3-1.2.1(c)	Revised
16	3-1.5.1	Revised in its entirety
	3-1.5.2	Revised in its entirety
17	3-1.5.3(a)	Revised
	3-1.5.4(a)	Revised
18	Section 3-1.8	(1) Title revised (2) Subparagraphs 3-1.8(a), (b), (c), and (e) revised
19	Section 3-1.11	(1) Title revised (2) Revised in its entirety
	3-1.13(d)	Last sentence added
20	3-1.15.1(j)	Added
24	3-2.1.6	Added
25	3-2.3.3(a)	Revised

Chapter 3-3
Operation

SECTION 3-3.1: QUALIFICATIONS FOR AND CONDUCT OF OPERATORS AND OPERATING PRACTICES

3-3.1.1 Operators

(a) Cranes shall be operated only by the following qualified personnel:

(1) designated persons;

(2) trainees under the direct supervision of a designated person;

(3) maintenance and test personnel, when it is necessary in the performance of their duties;

(4) inspectors (crane).

(b) No one, other than personnel specified in para. 3-3.1.1(a), shall enter a crane cab with the exception of persons such as oilers, supervisors, and those specific persons authorized by supervisors whose duties require them to do so, and then only in the performance of their duties and with the knowledge of the operator or other appointed person.

3-3.1.2 Qualifications for Operators

(a) Operators shall be required by the employer to pass a practical operating examination unless able to furnish satisfactory evidence of qualifications and experience. Qualifications shall be limited to the specific type of equipment which will be operated.

(b) Operators and operator trainees shall meet the following physical qualifications:

(1) have vision of at least 20/30 Snellen in one eye, and 20/50 Snellen in the other, with or without corrective lenses;

(2) be able to distinguish colors, regardless of position, if color differentiation is required for operation;

(3) hearing, with or without hearing aid, must be adequate for the specific operation;

(4) have sufficient strength, endurance, agility, coordination, and speed of reaction to meet the demands of equipment operation.

(c) Evidence of physical defects, or emotional instability which could pose a hazard to the operator or others, or which in the opinion of the examiner could interfere with the operator's performance, may be sufficient cause for disqualification. In such cases, specialized clinical or medical judgments and tests may be required.

(d) Evidence that an operator is subject to seizures or loss of physical control shall be sufficient reason for disqualification. Specialized medical tests may be required to determine these conditions.

(e) Operators and operator trainees should have good depth perception, field of vision, reaction time, manual dexterity, coordination, and no tendencies to dizziness or similar characteristics.

3-3.1.3 Conduct of Operators (04)

(a) The operator shall not engage in any practice which might divert attention while actually engaged in operating the crane.

(b) When physically or mentally unfit, an operator shall not engage in the operation of the equipment.

(c) The operator shall respond to signals from the person who is directing the lift, or an appointed signalperson. When a signalperson is not required as part of the crane operation, the operator is then responsible for the lifts. However, the operator shall obey a stop signal at all times, no matter who gives it.

(d) Each operator shall be responsible for those operations under the operator's direct control. Whenever there is any doubt as to safety, the operator shall consult with the supervisor before handling the loads.

(e) Before leaving the crane unattended, the operator shall:

(1) land any load, bucket, lifting magnet, or other device;

(2) set trolley brakes and other locking devices and bring the hook to the highest position;

(3) disconnect power or disengage the master clutch, as applicable;

(4) place all controls in the *off* or *neutral* position;

(5) secure the crane against inadvertent travel;

(6) stop the internal combustion engine, when provided;

(7) leave the superstructure free to weathervane unless provisions for nonweathervaning have been specified by the manufacturer or by a qualified person;

(8) restrain the crane from travel with rail clamps, or other means provided, when a wind alarm is given or on leaving the crane overnight.

An exception to para. 3-3.1.3(e)(6) may exist when crane operation is frequently interrupted during a shift. Under these circumstances the crane may remain running while the operator remains on the crane superstructure.

(f) If there is a warning sign on the power disconnecting means or starting controls, the operator shall

not close the circuit or start the equipment until the warning sign has been removed by an appointed person.

(g) Before closing the power disconnecting means or starting the equipment, the operator shall see that all controls are in the *off* or *neutral* position and that all personnel are in the clear.

(h) If power fails during operation, the operator shall:

(1) set trolley, hoist, and travel brakes and locking devices, as applicable;

(2) move all clutch or other power controls to the *off* or *neutral* position;

(3) if practical, the suspended load should be landed under brake control.

(i) The operator shall be familiar with the equipment and its proper care. If adjustments or repairs are necessary, the operator shall report the condition promptly to the appointed person, and shall also notify the next operator.

(j) All controls shall be tested by the operator at the start of a new shift. If any controls do not operate properly, they shall be adjusted or repaired before operations are begun.

(k) Cranes shall not be operated when wind speeds exceed the maximum velocity recommended by the manufacturer.

(l) Prior to daily operation, operator aids shall be checked to determine if they are working per para. 3-2.1.6.

(m) Cranes shall not be raised (climbed) to a new operating level when wind speed at the top of the crane exceeds 20 mph (9 m/s) or as recommended by the manufacturer or a qualified person.

(n) The crane operator should be present during climbing operations. See paras. 3-1.1.5 and 3-1.1.6.

(o) Climbing operations shall not be commenced until all support provisions required at the new support level are in place and as specified by a qualified person.

(p) Operations undertaken during weather conditions that produce icing of the crane structure or reduced visibility should be performed at reduced function speeds and with signaling means appropriate to the situation.

(q) For night operations, lighting shall be adequate to illuminate the working areas while not interfering with the operator's vision.

SECTION 3-3.2: OPERATING PRACTICES

(04) ### 3-3.2.1 Handling the Load

(a) *Size of Load*

(1) No crane shall be loaded beyond the rated loads given in the rating chart except for test purposes as provided in paras. 3-1.1.6 and 3-2.2.2.

(2) The load to be lifted is to be within the rated load of the crane in its existing configuration.

(3) For lifts where the load weight is not accurately known, the person responsible for the lift shall ascertain that the weight of the load does not exceed the crane ratings at the radius at which the load is to be lifted.

(b) *Operator Aids*

(1) Indicating devices shall be checked daily before the crane is put in operation. See para. 3-2.1.6.

(2) Load indicator readings shall be used to guide crane operations within the specifications of the load rating chart, except when load weight is accurately known from another source.

(3) Boom angle or radius indicator readings shall be used to guide crane operations within the specifications of the load rating chart; however, measured operating radii shall always govern over indicated boom angles or radii.

(4) When a load, boom angle, or radius indicator, or boom luffing, trolley travel, crane travel, or two-block limiter is not functioning, the crane may be kept in service while awaiting repair provided all of the following conditions are adhered to. No operations shall be conducted if more than one of the indicating or limiting devices are not functioning.

(a) All crane operations are conducted under the direct supervision of a qualified person other than a signal person.

(b) Radio communications between the qualified person, the signal person(s), and the crane operator are established.

(c) Each individual lift, and the first of a series of identical repetitious lifts, are specifically approved by the qualified person, before the lift is made, with respect to load weight, operating radii, lift heights, and crane motions.

(5) When the wind velocity indicating device is not functioning, crane operations may continue if another crane on the site is equipped with a functioning wind velocity indicator or if a qualified person determines that ambient wind velocity is within permitted limits.

(6) When drum rotation indicators are not functioning, the crane may be kept in service while awaiting repair.

(c) *Attaching the Load*

(1) The hoist rope shall not be wrapped around the load.

(2) The load shall be attached to the hook by means of slings or other devices of adequate capacity.

(d) *Holding the Load*

(1) The operator shall not leave the controls while the load is suspended.

(2) No person should be permitted to stand or pass under a suspended load.

(3) If the load must remain suspended for any considerable length of time, the operator shall keep the

drum from rotating in the lowering direction by activating the drum holding device, if a separate nonautomatic device has been provided.

(4) As an exception to para. 3-3.2.1(d)(1), where a load is to be held suspended for a period of time exceeding normal lifting operations, the operator may leave the controls, provided that prior to that time, the appointed individual and operator shall establish the requirements for restraining the load, swing, travel, and trolleying functions, and provide barricades, or whatever other precautions may be necessary.

(e) Moving the Load

(1) The person directing the lift shall see that:

(a) proper slings or other lifting attachments are being used;

(b) the load is well secured and balanced in the sling or lifting device before it is lifted more than a few inches;

(c) the lift and swing path is clear of obstructions.

(2) Before starting to lift, the following conditions should be noted:

(a) hoist rope shall not be kinked;

(b) multiple part lines shall not be twisted around each other;

(c) the hook shall be brought over the load in such a manner as to minimize swinging;

(d) if there is a slack rope condition, it shall be determined that the rope is seated on the drum and in the sheaves, as the slack is removed;

(e) the effect of wind on the load and on the crane;

(f) the load is free to be lifted; it is neither caught on nor attached to other objects.

(3) During lifting, care shall be taken that:

(a) there is no sudden acceleration or deceleration of the moving load;

(b) the load does not contact any obstructions.

(4) Side loading of booms (jibs) shall be limited to freely suspended loads. Cranes should not be used for dragging loads.

(5) The operator should avoid carrying loads over people.

(6) The operator shall test the brakes each time a load approaching the rated load is handled by lifting it a few inches and applying the brakes.

(7) The load shall not be lowered below the point where less than two full wraps of rope remain on the drum.

(8) When swinging the boom (jib), trolleying a load, or traveling the crane, sudden starts and stops shall be avoided. Swing and travel speeds shall be such that the load does not swing out beyond the radius at which it can be controlled. A tag or restraint line shall be used when swinging of the load is hazardous.

(9) Consideration should be given to the effects of wind on loads with large sail area.

3-3.2.2 Personnel Lifting

This volume recognizes that construction tower cranes are designed and intended for handling materials and not personnel. Personnel are only permitted to ride in a personnel platform as described in para. 3-3.2.2(b) supported from the crane's hook. The crane shall not be used for other purposes while handling personnel.

(a) The following special procedures shall be followed when personnel are to be lifted.

(1) The person specifically responsible for the overall work function to be performed shall determine that there is no practical alternate way to perform the needed work or gain access to the area, and shall authorize its usage.

(2) For each personnel lifting procedure, the person responsible for the task shall attest to the need for the operation by issuing a statement describing the procedure and its time frame. The statement, after being approved by the authorizer, shall be retained at the jobsite.

(3) When used for lifting personnel, the crane shall be inspected daily in accordance with the requirements of paras. 3-2.1.3 and 3-2.4.2(a).

(4) The lifting and supporting shall be made under controlled conditions and under the direction of an appointed signalperson.

(5) A meeting attended by the crane operator, signalperson, person(s) to be lifted, and the persons responsible for the task to be performed shall be held daily to plan and review procedures to be followed, including procedures for entering and leaving the personnel platform and the points at which persons will enter and leave the personnel platform.

(6) The operator and signalperson shall conduct a test lift with the empty personnel platform or basket.

(7) Communication between the crane operator, signalperson, and person(s) being lifted shall be maintained.

(8) When hook supported personnel platforms are lifted, a two-block damage prevention feature shall be provided.

(9) The crane shall be operated so that lowering motion will be power-controlled lowering (no free-fall).

(10) When welding is done by personnel from the platform or basket, the electrode holders shall be protected from contact with metal components of the personnel platform or basket.

(11) Personnel being lifted or supported shall wear safety belts with lanyards attached to designated anchor point(s).

(12) The operator shall remain at the controls when the personnel platform is occupied.

(13) Movement of the personnel platform shall be done in a slow, controlled, cautious manner with no sudden movements of the crane or personnel platform.

The lifting or lowering speed shall not exceed 100 ft/min (0.51 m/s).

(14) The personnel being lifted or positioned shall remain in continuous sight or in communication with the operator or signalperson.

(15) The total weight of the lifted load (including personnel) shall not exceed 50% of the crane rating under the planned conditions of use.

(16) Suspended personnel platforms shall be used only for personnel, their tools, and sufficient materials to do their work. They shall not be used for transporting bulk materials.

(17) Personnel shall keep all parts of the body inside the suspended personnel platform during raising, lowering, and positioning to avoid pinch points. Personnel shall not stand on or work from the top rail, midrail, or toeboard of the suspended personnel platform.

(18) If the personnel platform cannot be landed, it should be tied to the structure before personnel get off or on.

(19) Personnel platforms should not be used in winds in excess of 15 mph (25 km/h), electric storms, snow, ice, sleet, or other adverse weather conditions which could affect the safety of personnel.

(20) After positioning of the personnel platform, all brakes and locks of the lift crane shall be set before personnel perform any work.

(b) A personnel platform which is designed and constructed in accordance with the following shall be used.

(1) The personnel platform shall be designed by a qualified person.

(2) The personnel platform shall be limited to a capacity of six persons.

(3) The personnel platform and attaching devices shall have a minimum design factor of 5.

(4) The personnel platform shall have a plate specifying the weight of the empty personnel platform and the maximum number of persons and weight for which the personnel platform is rated.

(5) The personnel platform shall have standard railing as defined in ANSI A1264.1.

(6) A grab rail shall be provided inside the suspended personnel platform to minimize hand exposure.

(7) The sides of the personnel platform shall be enclosed from floor to mid-rail.

(8) If access doors are installed, they shall open only to the interior of the personnel platform. Access doors shall be equipped with a device to restrain the door from inadvertent opening.

(9) The personnel platform shall be easily identifiable by high visibility color or marking.

(10) The personnel platform shall be attached by means such as, but not limited to, a bolt type shackle with nut and cotterpin, hook (latched or moused), or wedge and socket attachment. A wedge and socket attachment shall have a clip on the free end of the load line (see Fig. 8).

(11) The suspension system shall minimize inclination of the personnel platform due to the movement of personnel on the personnel platform.

(12) All rough edges shall be ground smooth.

(13) All welding procedures and welding operator qualifications shall be in accordance with ANSI/AWS D1.1 when welding is to be performed on load sustaining members. Where special steels or other materials are used, the manufacturer or a qualified person shall provide welding procedures.

(14) All welding shall be performed by a certified welder.

(c) Suspended Personnel Platform Testing and Inspection.

(1) Prior to use each working shift, the personnel platform and rigging shall be inspected.

(2) At each new jobsite, and at least annually, prior to hoisting personnel in the suspended personnel platform, the personnel platform, rigging, and hook block shall be proof tested to twice the personnel platform's rated capacity by holding it in a suspended position for 5 min with the test load suitably distributed on the personnel platform. After prooftesting, any deficiencies revealed by inspection by a qualified person shall be corrected and another proof test shall be conducted. Any modification to personnel platform or rigging shall require retesting of the personnel platform.

SECTION 3-3.3: SIGNALS

3-3.3.1 Standard Signals

Standard signals to the operator shall be in accordance with the standards prescribed in para. 3-3.3.2, unless voice communication equipment (telephone, radio, or equivalent) is utilized. Signals shall be discernible or audible at all times. No crane motion shall be made unless signals are clearly understood.

3-3.3.2 Hand Signals

Hand signals shall be in accordance with Fig. 10 and shall be posted at the work site.

3-3.3.3 Special Signals

For operations not covered by para. 3-3.3.2, or for special conditions that occur from time to time, additions to or modifications of the standard signals may be required. In such cases, these special signals shall be agreed upon in advance by the operator and the signalperson and should not be in conflict with standard signals.

3-3.3.4 Instructions to the Operator

If it is desired to give instructions to the operator, other than those provided by the established signal system, crane motions shall be stopped.

ASME B30.4-2003
(Revision of ASME B30.4-1996)

PORTAL, TOWER, AND PEDESTAL CRANES

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

The American Society of Mechanical Engineers

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PORTAL, TOWER, AND PEDESTAL CRANES

ASME B30.4-2003
(Revision of ASME B30.4-1996)

SAFETY STANDARD FOR CABLEWAYS, CRANES, DERRICKS, HOISTS, HOOKS, JACKS, AND SLINGS

Date of Issuance: June 16, 2003

The next edition of this Standard is scheduled for publication in 2008. There will be no addenda issued to this edition.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. Interpretations are published on the ASME Web site under the Committee Pages at http://www.asme.org/codes/ as they are issued, and will also be published within the next edition of the Standard.

The American Society of Mechanical Engineers
Three Park Avenue, New York, NY 10016

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FOREWORD

This American National Standard, Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings, has been developed under the procedures accredited by the American National Standards Institute (formerly the United States of America Standards Institute). This Standard had its beginning in December 1916 when an eight-page Code of Safety Standards for Cranes, prepared by an ASME Committee on the Protection of Industrial Workers, was presented to the annual meeting of the ASME.

Meetings and discussions regarding safety on cranes, derricks, and hoists were held from 1920 to 1925, involving the ASME Safety Code Correlating Committee, the Association of Iron and Steel Electrical Engineers, the American Museum of Safety, the American Engineering Standards Committee (later changed to American Standards Association and subsequently to the USA Standards Institute), Department of Labor — State of New Jersey, Department of Labor and Industry — State of Pennsylvania, and the Locomotive Crane Manufacturers Association. On June 11, 1925, the American Engineering Standards Committee approved the ASME Safety Code Correlating Committee's recommendation and authorized the project with the U.S. Department of the Navy, Bureau of Yards and Docks, and ASME as sponsors.

In March 1926, invitations were issued to 50 organizations to appoint representatives to a Sectional Committee. The call for organization of this Sectional Committee was sent out October 2, 1926, and the committee organized November 4, 1926, with 57 members representing 29 national organizations. The Safety Code for Cranes, Derricks, and Hoists, ASA B30.2-1943, was created from the eight-page document referred to in the first paragraph. This document was reaffirmed in 1952 and widely accepted as a safety standard.

Due to changes in design, advancement in techniques, and general interest of labor and industry in safety, the Sectional Committee, under the joint sponsorship of ASME and the Naval Facilities Engineering Command, U.S. Department of the Navy, was reorganized as an American National Standards Committee on January 31, 1962, with 39 members representing 27 national organizations.

The format of the previous code was changed so that separate standards (each complete as to construction and installation; inspection, testing, and maintenance; and operation) would cover the different types of equipment included in the scope of B30.

In 1982, the Committee was reorganized as an Accredited Organization Committee, operating under procedures developed by the ASME and accredited by the American National Standards Institute.

This Standard presents a coordinated set of rules that may serve as a guide to government and other regulatory bodies and municipal authorities responsible for the guarding and inspection of the equipment falling within its scope. The suggestions leading to accident prevention are given both as mandatory and advisory provisions; compliance with both types may be required by employers of their employees.

In case of practical difficulties, new developments, or unnecessary hardship, the administrative or regulatory authority may grant variances from the literal requirements or permit the use of other devices or methods, but only when it is clearly evident that an equivalent degree of protection is thereby secured. To secure uniform application and interpretation of this Standard, administrative or regulatory authorities are urged to consult the B30 Committee, in accordance with the format described in Section III, before rendering decisions on disputed points.

This volume of the Standard, which was approved by the B30 Standards Committee and by ASME, was approved by ANSI and designated as an American National Standard on February 19, 2003.

Safety codes and standards are intended to enhance public safety. Revisions result from committee consideration of factors such as technological advances, new data, and changing environmental and industry needs. Revisions do not imply that previous editions were inadequate.

ASME B30 STANDARDS COMMITTEE
Safety Standards for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings

(The following is the roster of the Committee at the time of approval of this Standard.)

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SAFETY STANDARD FOR CABLEWAYS, CRANES, DERRICKS, HOISTS, HOOKS, JACKS, AND SLINGS

B30 SERIES INTRODUCTION

(03)

GENERAL

This Standard is one of a series of safety standards on various subjects that have been formulated under the general auspices of the American National Standards Institute. One purpose of the Standard is to serve as a guide to governmental authorities having jurisdiction over subjects within the scope of the Standard. It is expected, however, that the Standard will find a major application in industry, serving as a guide to manufacturers, purchasers, and users of the equipment.

For the convenience of the user, the Standard has been divided into separate volumes.

B30.1 Jacks
B30.2 Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)
B30.3 Construction Tower Cranes
B30.4 Portal, Tower, and Pedestal Cranes
B30.5 Mobile and Locomotive Cranes
B30.6 Derricks
B30.7 Base Mounted Drum Hoists
B30.8 Floating Cranes and Floating Derricks
B30.9 Slings
B30.10 Hooks
B30.11 Monorails and Underhung Cranes
B30.12 Handling Loads Suspended From Rotorcraft
B30.13 Storage/Retrieval (S/R) Machines and Associated Equipment
B30.14 Side Boom Tractors
B30.15 Mobile Hydraulic Cranes
Note: B30.15-1973 has been withdrawn. The revision of B30.15 is included in the latest edition of B30.5.
B30.16 Overhead Hoists (Underhung)
B30.17 Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Underhung Hoist)
B30.18 Stacker Cranes (Top or Under Running Bridge, Multiple Girder With Top or Under Running Trolley Hoist)
B30.19 Cableways
B30.20 Below-the-Hook Lifting Devices
B30.21 Manually Lever Operated Hoists
B30.22 Articulating Boom Cranes
B30.23 Personnel Lifting Systems
B30.24 Container Cranes
B30.25 Scrap and Material Handlers
B30.26 Rigging Hardware[1]
B30.27 Material Placement Systems[1]
B30.28 Balance-Lifting Units[1]

If these standards are adopted for governmental use, the references to other national codes and standards in the specific volumes may be changed to refer to the corresponding regulations of the governmental authorities.

The use of cableways, cranes, derricks, hoists, hooks, jacks, and slings is subject to certain hazards that cannot be met by mechanical means but only by the exercise of intelligence, care, and common sense. It is therefore essential to have personnel involved in the use and operation of equipment who are competent, careful, physically and mentally qualified, and trained in the safe operation of the equipment and the handling of the loads. Serious hazards are overloading, dropping or slipping of the load caused by improper hitching or slinging, obstructing the free passage of the load, and using equipment for a purpose for which it was not intended or designed.

The Standards Committee fully realizes the importance of proper design factors, minimum or maximum sizes, and other limiting dimensions of wire rope or chain and their fastenings, sheaves, sprockets, drums, and similar equipment covered by the Standard, all of which are closely connected with safety. Sizes, strengths, and similar criteria depend on many different factors, often varying with the installation and uses. These factors depend on the condition of the equipment or material; the loads; the acceleration or speed of the ropes, chains, sheaves, sprockets, or drums; the type of attachments; the number, size, and arrangement of sheaves or other parts; environmental conditions causing corrosion or wear; and many variables that must be considered in each individual case. The rules given in the Standard must be interpreted accordingly, and judgment must be used in determining their application.

The Standards Committee will be glad to receive criticisms of this Standard's requirements and suggestions

[1] B30.26, B30.27, and B30.28 are in the developmental stage.

for its improvement, especially those based on actual experience in application of the rules.

Suggestions for changes to the Standard should be submitted to the Secretary of the B30 Committee, ASME, Three Park Avenue, New York, NY 10016-5990, and should be in accordance with the following format:

(a) Cite the specific paragraph designation of the pertinent volume.

(b) Indicate the suggested change (addition, deletion, revision, etc.).

(c) Briefly state the reason and/or evidence for the suggested change.

(d) Submit suggested changes to more than one paragraph in the order that the paragraphs appear in the volume.

The B30 Committee will consider each suggested change in a timely manner in accordance with its procedures.

(03) SECTION I: SCOPE

This Standard applies to the construction, installation, operation, inspection, maintenance, and safe use of lifting equipment used in construction and industrial settings. This includes, but is not limited to: articluating-boom, container, gantry, mobile, pedestal, portal, tower and stacker cranes; balance-lifting units; below-the-hook lifting devices; cableways; derricks; jacks; hoists; hooks; loads suspended from rotorcraft; material placement systems; monorails; rigging hardware; and scrap and material handlers.

This Standard does not apply to track and automotive jacks, railway or automobile wrecking cranes, shipboard cranes, shipboard cargo-handling equipment, well-drilling derricks, skip hoists, mine hoists, truck body hoists, car or barge pullers, conveyors, excavating equipment, or equipment falling within the scope of the following Committees: A10, A17, A90, A92, A120, B20, B56, and B77.

SECTION II: PURPOSE

This Standard is designed to

(a) guard against and minimize injury to workers, and otherwise provide for the protection of life, limb, and property by prescribing safety requirements

(b) provide direction to owners, employers, supervisors, and others concerned with, or responsible for, its application

(c) guide governments and other regulatory bodies in the development, promulgation, and enforcement of appropriate safety directives

SECTION III: INTERPRETATIONS

Upon request, the B30 Committee will render an interpretation of any requirement of the Standard. Interpretations can only be rendered in response to a written request sent to the Secretary of the B30 Committee, ASME, Three Park Avenue, New York, NY 10016-5990.

The request for interpretation should be clear and unambiguous. It is further recommended that the inquirer submit his request utilizing the following format.

Subject: Cite the applicable paragraph number(s) and provide a concise description.

Edition: Cite the applicable edition of the pertinent volume for which the interpretation is being requested.

Question: Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for approval of a proprietary design or situation. The inquirer may also include any plans or drawings that are necessary to explain the question; however, they should not contain any proprietary names or information.

Requests that are not in this format will be rewritten in this format by the Committee prior to being answered, which could change the intent of the original request.

ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME Committee or Subcommittee. ASME does not "approve," "certify," "rate," or "endorse" any item, construction, proprietary device, or activity.

SECTION IV: NEW AND EXISTING INSTALLATIONS

(a) Effective Date. The effective date of this volume for the purpose of defining new and existing installations shall be 1 year after its date of issuance.

(b) New Installations. Construction, installation, inspection, testing, maintenance, and operation of equipment manufactured and facilities constructed after the effective date of this volume shall conform to the mandatory requirements of this volume.

(c) Existing Installations. Inspection, testing, maintenance, and operation of equipment manufactured and facilities constructed prior to the effective date of this volume shall be done, as applicable, in accordance with the requirements of this volume.

It is not the intent of this volume to require retrofitting of existing equipment. However, when an item is being modified, its performance requirement shall be reviewed relative to the current volume. If the performance differs substantially, the need to meet the current requirement shall be evaluated by a qualified person selected by the

owner (user). Recommended changes shall be made by the owner (user) within 1 year.

SECTION V: MANDATORY AND ADVISORY RULES

Mandatory rules of this volume are characterized by use of the word *shall*. If a provision is of an advisory nature, it is indicated by use of the word *should* and is a recommendation to be considered, the advisability of which depends on the facts in each situation.

SECTION VI: METRIC CONVERSIONS

The values stated in U.S. Customary units are to be regarded as the standard.

(e) Ropes Not in Regular Use. All rope that has been idle for a period of 1 month or more due to shutdown or storage of the crane on which it is installed shall be inspected in accordance with para. 4-2.1.5 before it is placed in service. Inspections under para. 4-2.1.5(b) shall be for all types of deterioration and shall be performed by an appointed or authorized person.

(f) Inspection Records

(1) Frequent inspection — no records required.

(2) Periodic inspection — in order to establish data as a basis for judging the proper time for replacement, a dated report of rope condition shall be kept on file. This report shall cover points of deterioration listed in para. 4-2.4.2(b)(2). If the rope is replaced, only that fact need be recorded.

(g) A long range inspection program should be established to include records on examination of ropes removed from service to establish a relationship between visual observation and actual condition of the internal structure.

4-2.4.4 Rope Maintenance

(a) Rope should be stored in such a manner as to minimize damage or deterioration.

(b) Rope shall be unreeled or uncoiled in such a manner as to avoid kinking of or inducing a twist in the rope.

(c) Before cutting rope, seizings shall be placed on each side of the place where the rope is to be cut to prevent unlaying of the strands.

(d) During installation, care should be exercised to avoid dragging the rope in dirt or around objects that will scrape, nick, crush, or induce sharp bends in it.

(e) Rope should be maintained in a well-lubricated condition. Lubricant applied as part of a maintenance program shall be compatible with the original lubricant and to this end the rope manufacturer should be consulted; lubricant shall be of a type that does not hinder visual inspection. Those sections of rope that are located over sheaves or otherwise hidden during inspection and maintenance require special attention during lubrication. The object of rope lubrication is to reduce internal friction and to inhibit corrosion.

(f) When an operating rope shows greater wear at well-defined localized areas than on the remainder of the rope, rope life can be extended, in cases where a reduced rope length is adequate, by cutting off a section at the worn end and thus shifting the wear to different areas of the rope.

Chapter 4-3
Operation

SECTION 4-3.1: QUALIFICATIONS FOR AND CONDUCT OF OPERATORS AND OPERATING PRACTICES

4-3.1.1 Operators

(a) Cranes shall be operated only by the following qualified personnel:

(1) designated persons

(2) trainees under the direct supervision of a designated person

(3) maintenance and test personnel, when it is necessary in the performance of their duties

(4) inspectors (crane)

(b) No one, other than personnel specified in para. 4-3.1.1(a), shall enter a crane cab with the exception of persons such as oilers, supervisors, and those specific persons authorized by supervisors whose duties require them to do so, and then only in the performance of their duties and with the knowledge of the operator or other appointed person.

4-3.1.2 Qualification for Operators

(a) Operators shall be required by the employer to pass a practical operating examination. Examination shall be limited to the specific type of equipment that will be operated.

(b) Operators and operator trainees shall meet the following physical qualifications:

(1) have vision of at least 20/30 Snellen in one eye, and 20/50 in the other, with or without corrective lenses

(2) be able to distinguish colors, regardless of position, if color differentiation is required for operation

(3) hearing, with or without hearing aid, shall be adequate for the specific operation

(4) have sufficient strength, endurance, agility, coordination, and speed of reaction to meet the demands of equipment operation

(c) Evidence of physical defects, or emotional instability that could pose a hazard to the operator or others, or, which in the opinion of the examiner could interfere with the operator's performance, may be sufficient cause for disqualification. In such cases, specialized clinical or medical judgments and tests may be required.

(d) Evidence that an operator is subject to seizures or loss of physical control shall be sufficient reason for disqualification. Specialized medical tests may be required to determine these conditions.

(e) Operators and operator trainees should have good depth perception, field of vision, reaction time, manual dexterity, coordination, and no tendencies to dizziness or similar characteristics.

4-3.1.3 Conduct of Operators

(a) The operator shall not engage in any practice that might divert attention while actually engaged in operating the crane.

(b) When physically or mentally unfit, an operator shall not engage in the operation of the equipment.

(c) The operator shall respond to signals from the person who is directing the lift, or an appointed signalperson. When a signalperson is not required as part of the crane operation, the operator is then responsible for the lifts. However, the operator shall obey a stop signal at all times, no matter who gives it.

(d) Each operator shall be responsible for those operations under the operator's direct control. Whenever there is any doubt as to safety, the operator shall consult with the supervisor before handling the loads.

(e) Before leaving the cane unattended, the operator shall

(1) land any load, lifting magnet, or other device.

(2) set trolley brakes and other locking devices and bring the hook to the highest position.

(3) disconnect power or disengage the master clutch, as applicable.

(4) place all controls in the OFF or NEUTRAL positions.

(5) secure the crane against inadvertent travel.

(6) stop the internal combustion engine, when provided.

(7) leave the upper structure free to weathervane unless provisions for nonweathervaning have been specified by the manufacturer or by a qualified person.

(8) restrain the crane from travel with rail clamps, or other means provided, when a wind alarm is given or on leaving the crane overnight. An exception to para. 4-3.1.3(e)(6) may exist when crane operation is frequently interrupted during a shift. Under these circumstances, the crane may remain running while the operator remains on the crane superstructure.

(f) If there is a warning sign on the power disconnecting means or starting controls, the operator shall not close the circuit or start the equipment until the warning sign has been removed by an appointed person.

(g) Before closing the power disconnecting means or starting the equipment, the operator shall see that all controls are in the OFF or NEUTRAL position and that all personnel are in the clear.

(h) If power fails during operation, the operator shall

(1) set brakes and locking devices, as applicable

(2) move all clutch or other power controls to the OFF or NEUTRAL position

(3) if practical, the suspended load should be landed under brake control

(i) The operator shall be familiar with the equipment and its proper care. If adjustments or repairs are necessary, the operator shall report the condition promptly to the appointed person, and shall also notify the next operator.

(j) All controls shall be tested by the operator at the start of a new shift. If any controls do not operate properly, they shall be adjusted or repaired before operations are begun.

(k) Cranes shall not be operated when wind speeds exceed the maximum velocity recommended by the manufacturer.

(l) Operations undertaken during weather conditions that produce icing of the crane structure or reduced visibility should be performed at reduced function speeds and with signaling means appropriate to the situation.

(m) For night operations, lighting shall be adequate to illuminate the working areas while not interfering with the operator's vision.

SECTION 4-3.2: OPERATING PRACTICES

4-3.2.1 Handling the Load

(a) Size of Load

(1) No crane shall be loaded beyond the rated loads given in the rating chart except for test purposes as provided in paras. 4-1.1.3 and 4-2.2.2.

(2) The load to be lifted is to be within the rated load of the crane in its existing configuration.

(3) For lifts where the load weight is not accurately known, the person responsible for the lift shall ascertain that the weight of the load does not exceed the crane ratings at the radius at which the load is to be lifted.

(4) When rotation-resistant ropes are used with a design factor of less than 5 as permitted under para. 4-1.4.5(b), the special provisions that follow shall apply:

(a) For each such lifting assignment

(1) an appointed person shall direct each lift

(2) an appointed person shall ascertain that the rope is in satisfactory condition [paras. 4-2.4.2(a)(1)(a) through (e)] both before and after lifting, but more than one broken wire in any one lay shall be reason not to use the rope for such lifts

(3) operations shall be conducted in such manner and at such speeds as to minimize dynamic effects

(b) Each lift under these provisions shall be recorded in the crane inspection record, and such prior uses shall be considered before permitting another such lift.

(c) These provisions are not intended to permit duty cycle or repetitive lifts to be made under para 4-1.4.5(b) with design factors of less than 5.

(b) Attaching the Load

(1) The hoist rope shall not be wrapped around the load.

(2) The load shall be attached to the hook by means of slings or other devices of adequate capacity.

(c) Holding the Load

(1) The operator shall not leave the controls while the load is suspended.

(2) No person should be permitted to stand or pass under a suspended load.

(3) If the load must remain suspended for any considerable length of time, the operator shall keep the drum from rotating in the lowering direction by activating the drum holding device, if a separate nonautomatic device has been provided.

(4) As an exception to (c)(1) above, where a load is to be held suspended for a period of time exceeding normal lifting operations, the operator may leave the controls, provided that prior to that time, the appointed individual and operator shall establish the requirements for restraining the load, swing, and travel functions, and provide barricades, or whatever other precautions may be necessary.

(d) Moving the Load

(1) The person directing the lift shall see that

(a) proper slings or other lifting attachments are being used

(b) the load is well secured and balanced in the sling or lifting device before it is lifted more than a few inches

(c) the lift and swing path is clear of obstructions

(2) Before starting to lift, the following conditions should be noted

(a) hoist rope shall not be kinked

(b) multiple part lines shall not be twisted around each other

(c) the hook shall be brought over the load in such a manner as to minimize swinging

(d) if there is a slack rope condition, it shall be determined that the rope is seated on the drum and in the sheaves, as the slack is removed

(e) the effect of wind on the load and on the crane

(f) the load is free to be lifted; it is not caught on, nor attached to, other objects

(3) During lifting, care shall be taken that

(a) there is no sudden acceleration or deceleration of the moving load

(b) the load does not contact any obstructions

(4) Side loading of booms shall be limited to freely suspended loads. Cranes should not be used for dragging loads.

(5) The operator should avoid carrying loads over people.

(6) The operator shall test the brakes each time a load approaching the rated load is handled by lifting it a few inches and applying the brakes.

(7) The load shall not be lowered below the point where less than two full wraps of rope remain on the drum.

(8) When swinging the boom, derricking load, or traveling the crane, sudden starts and stops shall be avoided. Swing and travel speeds shall be such that the load does not swing out beyond the radius at which it can be controlled. A tag or restraint line shall be used when swinging of the load is hazardous.

(9) Consideration should be given to the effects of wind on loads with large sail area.

4-3.2.2 Personnel Lifting

This volume recognizes that portal, tower, and pedestal cranes are designed and intended for handling materials. They do not meet personnel lifting or elevator requirements. Therefore, no crane function shall be performed while a person is on the hook, load, manlift platform, boom, or other personnel lifting device attached to the crane load or boom, unless each of the specific, special, following requirements are met.

(a) The following special procedures shall be followed when personnel are to be lifted.

(1) The person specifically responsible for the overall work function to be performed shall determine that there is no practical alternate way to perform the needed work or gain access to the area and he shall authorize its usage. The person responsible for the task shall issue a statement describing the operation and its time frame. The statement, after being approved by the authorizer, shall be retained.

(2) For each instance of personnel lifting, the person responsible for the task shall determine that each of the following requirements in paras. (3) through (20) below has been met.

(3) When used for lifting personnel, the crane shall be inspected daily in accordance with the requirements of paras. 4-2.1.3 and 4-2.4.2(a).

(4) The lifting and supporting shall be made under controlled conditions and under the direction of an appointed signalperson.

(5) A planning meeting attended by the crane operator, signalperson, person(s) to be lifted and supported, and the supervisor responsible for the task shall be held to review procedures to be followed, including procedures for entering and leaving the personnel platform or basket, and to identify the location(s) persons will enter and leave.

(6) The operator and signalperson shall conduct a test lift with the empty platform or basket.

(7) Communication between the crane operator, signalperson, and person(s) being lifted shall be maintained.

(8) When hook supported platforms are lifted, a two-block damage prevention feature shall be provided on telescopic boom cranes and a warning device shall be provided on lattice boom cranes.

(9) The crane shall be operated so that lowering motion will be power-controlled lowering (no free fall).

(10) When welding is done by personnel from the platform or basket, the electrode holders shall be protected from contact with metal components of the platform or basket.

(11) Personnel being lifted or supported shall wear safety belts with lanyards attached to designated anchor point(s).

(12) The operator shall remain at the controls when the platform is occupied.

(13) Movement of the work platform carrying personnel shall be done in a slow, controlled, cautious manner with no sudden movements of the crane or work platform. The lifting or lowering speed shall not exceed 100 ft/min (0.51 m/s).

(14) The personnel being lifted or positioned shall remain in continuous sight or in communication with the operator or signalperson.

(15) The total weight of the lifted load (including personnel) shall not exceed 50% of the crane rating under the planned conditions of use.

(16) Suspended personnel platforms shall be used only for personnel, their tools, and sufficient materials to do their work. They shall not be used for transporting bulk materials.

(17) Personnel shall keep all parts of the body inside the suspended platform during raising, lowering and positioning to avoid pinch points. Personnel shall not stand on or work from the top rail, midrail, or toeboard of the suspended platform.

(18) If the platform cannot be landed, it should be tied to the structure before personnel get off or on.

(19) Work platforms should not be used in winds in excess of 15 mph (25 km/h), electric storms, snow, ice, sleet, or other adverse weather conditions that could affect the safety of personnel.

(20) After positioning of the work platform, all brakes and locks on the lift crane shall be set before personnel perform any work.

(b) A platform that is designed and constructed in accordance with the following shall be used.

(1) The platform shall be designed by a qualified person.

(2) The platform shall be limited to a capacity of 6 persons.

(3) The platform and attaching devices shall have a minimum design factor of 5.

(4) The platform shall have a plate specifying the weight of the empty platform and the maximum number of persons and weight for which the platform is rated.

(5) The platform shall have standard railing as defined in ANSI A1264.1.

(6) A grab rail shall be provided inside the suspended work platform to minimize hand exposure.

(7) The sides of the platform shall be enclosed from floor to midrail.

(8) If access doors are installed, they shall open only to the interior of the platform. Access doors shall be equipped with a device to restrain the door from inadvertent opening.

(9) The platform shall have overhead protection when there is an overhead hazard.

(10) The platform shall be easily identifiable by high visibility color or marking.

(11) The platform shall be attached by means such as, but not limited to, a shackle, hook (latched or moused), or wedge and socket attachment. A wedge and socket attachment shall have a clip on the free end of the load line (see Fig. 5).

(12) The suspension system shall minimize inclination of the platform due to the movement of personnel on the platform.

(13) All rough edges shall be ground smooth.

(14) All welds shall be inspected by a qualified person.

(15) All welding shall be performed by a certified welder.

SECTION 4-3.3: SIGNALS

4-3.3.1 Standard Signals

Standard signals to the operator shall be in accordance with the standards prescribed in para. 4.3.2, unless voice communication equipment (telephone, radio, or equivalent) is utilized. Signals shall be discernible or audible at all times. No crane motion shall be made unless signals are clearly understood.

4-3.3.2 Hand Signals

Hand signals shall be in accordance with Fig. 7 and shall be posted at the work site.

4-3.3.3 Special Signals

For operations not covered by para. 4-3.3.2, or for special conditions that occur from time to time, additions to or modifications of the standard signals may be required. In such cases, these special signals shall be agreed upon in advance by the operator and the signalperson and should not be in conflict with standard signals.

4-3.3.4 Instructions to the Operator

If it is desired to give instructions to the operator, other than those provided by the established signal system, crane motions shall be stopped.

SECTION 4-3.4: MISCELLANEOUS

4-3.4.1 Rail Clamps

Rail clamps, if used, should have slack between the point of attachment to the rail and the end fastened to the crane. Rail clamps shall not be used as a means of restraining tipping of a crane.

4-3.4.2 Operating Near Electric Power Lines

(a) Cranes shall be operated so that no part of the crane or load enters into the Danger Zone shown in Fig. 8.

(1) Exceptions

(a) The Danger Zone may be entered if the electrical distribution and transmission lines have been deenergized and visibly grounded at the point of work, or

(b) The Danger Zone may be entered if insulating barriers (not a part of nor attachment to the crane) have been erected to prevent physical contact with the lines.

(2) For lines rated 50 KV or below, minimum clearance between the lines and any part of the crane or load (including handling appendages) shall be 10 ft (3 m). For higher voltages, see Table 1.

(3) Caution shall be exercised when working near overhead lines, because they can move horizontally or vertically due to wind, moving the Danger Zone to new positions.

(4) A qualified signalperson shall be assigned to observe the clearance when the crane moves to within a boom's length of the Table 1 limits. The operator is not in the best position to judge distance between the power line and the crane or its protuberances.

(b) If cage-type boom guards, insulating links, or proximity warning devices are used on cranes, such devices shall not be a substitute for the requirements of para. 4-3.4.2(a), even if such devices are required by law or regulation. In view of the complex, invisible, and lethal nature of the electrical hazard involved, and to lessen the potential of false security, limitations of such devices, if used, shall be understood by operating personnel and tested in the manner and in intervals prescribed by the manufacturer of the device. Compliance with para. 4-3.4.2(a) is the recommended practice of this Standard in determining permissible proximity of the crane and its protuberances, including load and load lines to electrical power lines.

(c) Before the commencement of operations near electrical lines. The person responsible for the job shall notify the owners of the lines or their authorized representatives, providing them with all pertinent information and requesting their cooperation.

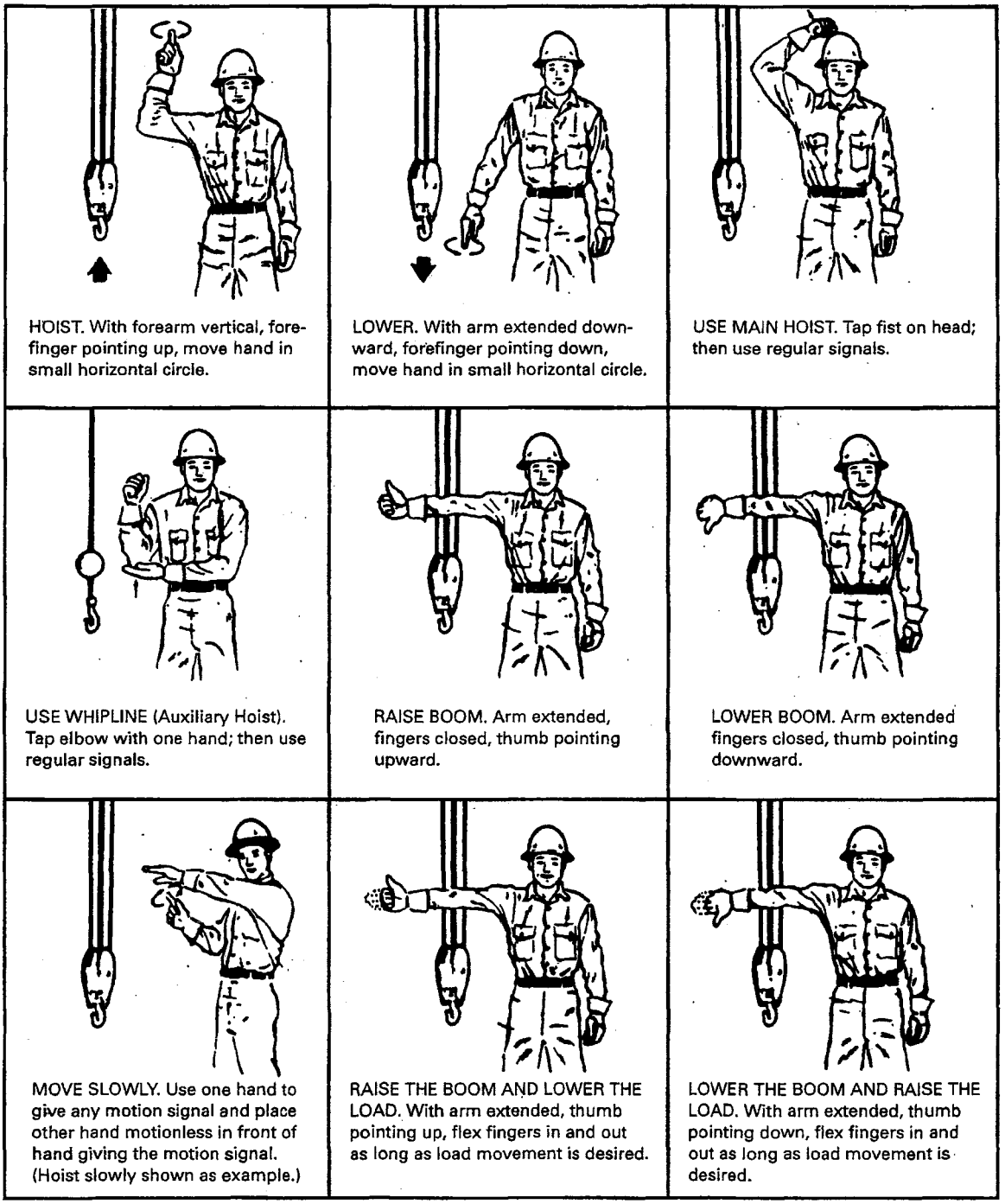

Fig. 7 Standard Hand Signals for Controlling Portal, Tower, and Pedestal Cranes

ASME B30.5-2007

(Revision of ASME B30.5-2004)

Mobile and Locomotive Cranes

Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings

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AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

Three Park Avenue • New York, NY 10016

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The next edition of this Standard is scheduled for publication in 2010. There will be no addenda issued to this edition.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. Interpretations are published on the ASME Web site under the Committee Pages at http://cstools.asme.org/ as they are issued, and will also be published within the next edition of the Standard.

The American Society of Mechanical Engineers
Three Park Avenue, New York, NY 10016-5990

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FOREWORD

This American National Standard, Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings, has been developed under the procedures accredited by the American National Standards Institute (formerly the United States of America Standards Institute). This Standard had its beginning in December 1916 when an eight-page Code of Safety Standards for Cranes, prepared by an ASME Committee on the Protection of Industrial Workers, was presented to the annual meeting of the ASME.

Meetings and discussions regarding safety on cranes, derricks, and hoists were held from 1920 to 1925, involving the ASME Safety Code Correlating Committee, the Association of Iron and Steel Electrical Engineers, the American Museum of Safety, the American Engineering Standards Committee (later changed to American Standards Association and subsequently to the USA Standards Institute), Department of Labor —State of New Jersey, Department of Labor and Industry — State of Pennsylvania, and the Locomotive Crane Manufacturers Association. On June 11, 1925, the American Engineering Standards Committee approved the ASME Safety Code Correlating Committee's recommendation and authorized the project with the U.S. Department of the Navy, Bureau of Yards and Docks, and ASME as sponsors.

In March 1926, invitations were issued to 50 organizations to appoint representatives to a Sectional Committee. The call for organization of this Sectional Committee was sent out October 2, 1926, and the committee organized November 4, 1926, with 57 members representing 29 national organizations. The Safety Code for Cranes, Derricks, and Hoists, ASA B30.2-1943, was created from the eight-page document referred to in the first paragraph. This document was reaffirmed in 1952 and widely accepted as a safety standard.

Due to changes in design, advancement in techniques, and general interest of labor and industry in safety, the Sectional Committee, under the joint sponsorship of ASME and the Naval Facilities Engineering Command, U.S. Department of the Navy, was reorganized as an American National Standards Committee on January 31, 1962, with 39 members representing 27 national organizations.

The format of the previous code was changed so that separate volumes (each complete as to construction and installation; inspection, testing, and maintenance; and operation) would cover the different types of equipment included in the scope of B30.

In 1982, the Committee was reorganized as an Accredited Organization Committee, operating under procedures developed by ASME and accredited by the American National Standards Institute.

This Standard presents a coordinated set of rules that may serve as a guide to government and other regulatory bodies and municipal authorities responsible for the guarding and inspection of the equipment falling within its scope. The suggestions leading to accident prevention are given both as mandatory and advisory provisions; compliance with both types may be required by employers of their employees.

In case of practical difficulties, new developments, or unnecessary hardship, the administrative or regulatory authority may grant variances from the literal requirements or permit the use of other devices or methods, but only when it is clearly evident that an equivalent degree of protection is thereby secured. To secure uniform application and interpretation of this Standard, administrative or regulatory authorities are urged to consult the B30 Committee, in accordance with the format described in Section III of the Introduction, before rendering decisions on disputed points.

Safety codes and standards are intended to enhance public safety. Revisions result from committee consideration of factors such as technological advances, new data, and changing environmental and industry needs. Revisions do not imply that previous editions were inadequate.

Suggestions for the improvement of this volume of the Standard are welcome. They should be addressed to The American Society of Mechanical Engineers; Secretary, B30 Main Committee; Three Park Avenue; New York, NY 10016-5990.

This volume of the Standard, which was approved by the B30 Committee and by ASME, was approved by ANSI and designated as an American National Standard on November 20, 2007.

ASME B30 COMMITTEE
Safety Standards for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings

(The following is the roster of the Committee at the time of approval of this Standard.)

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Chapter 5-3
Operation

(07) SECTION 5-3.1: QUALIFICATIONS AND RESPONSIBILITIES

5-3.1.1 Operators

(a) Cranes shall be operated only by the following personnel:

(07) *(1)* those who have met the requirements of paras. 5-3.1.2(a) through (c) and (f).

(2) those who have met the requirements of para. 5-3.1.2(d) and who are training for the type of crane being operated. While operating the crane, the trainee must be under the direct supervision of a designated, qualified operator.

(3) maintenance personnel who have completed all operator trainee qualification requirements. Operation by these persons shall be limited to those crane functions necessary to perform maintenance on the crane or to verify the performance of the crane after maintenance has been performed.

(4) inspectors who have completed all operator trainee qualification requirements. Operation by these persons shall be limited to those crane functions necessary to accomplish the inspection.

(b) Only the personnel specified in para. 5-3.1.1(a), oilers, supervisors, and those specific persons authorized by supervisors shall enter a crane cab. Persons shall only enter the cab when their duties require them to do so, and then only with the knowledge of the operator or other appointed persons.

5-3.1.2 Qualifications for Operators

Operators shall be required to successfully meet the qualifications for the specific type of crane (see Figs. 1 through 10) that they are operating.

(a) Operator and operator trainees shall meet the following physical qualifications unless it can be shown that failure to meet the qualifications will not affect the operation of the crane. In such cases, specialized clinical or medical judgments and tests may be required.

(1) vision of at least 20/30 Snellen in one eye and 20/50 in the other, with or without corrective lenses.

(2) ability to distinguish colors, regardless of position, if color differentiation is required.

(3) adequate hearing to meet operational demands, with or without hearing aid.

(4) sufficient strength, endurance, agility, coordination, and speed of reaction to meet the operation demands.

(5) normal depth perception, field of vision, reaction time, manual dexterity, coordination, and no tendencies to dizziness or similar undesirable characteristics.

(6) a negative result for a substance abuse test. The level of testing will be determined by the standard practice for the industry where the crane is employed and this test shall be confirmed by a recognized laboratory service.

(7) no evidence of having physical defects or emotional instability that could render a hazard to the operator or others, or that in the opinion of the examiner could interfere with the operator's performance. If evidence of this nature is found, it may be sufficient cause for disqualification.

(8) no evidence of being subject to seizures or loss of physical control; such evidence shall be sufficient reason for disqualification. Specialized medical tests may be required to determine these conditions.

(b) Operator requirements shall include, but not be limited to, the following:

(1) evidence of successfully passing a physical examination as defined in para. 5-3.1.2(a).

(2) satisfactory completion of a written examination covering operational characteristics, controls, and emergency control skills, such as response to fire, power line contact, loss of stability, or control malfunction, as well as characteristic and performance questions appropriate to the crane type for which qualification is being sought.

(3) demonstrated ability to read, write, comprehend, and use arithmetic and a load/capacity chart, in the language of the crane manufacturer's operation and maintenance instruction materials.

(4) satisfactory completion of a combination written and verbal test on load/capacity chart usage that covers a selection of the configurations (the crane may be equipped to handle) for the crane type for which qualification is being sought.

(5) satisfactory completion of an operation test (07) demonstrating proficiency in performing lifting, lowering, booming, telescoping, and swinging functions at various radii as well as shutdown. Testing shall also include proficiency in prestart and poststart inspection, securing procedures, and traveling by appropriate written, oral, or practical methods.

(6) demonstrated understanding of the applicable sections of the B30 Standard and federal, state, and local requirements.

(c) Operators who have successfully qualified for a specific crane type shall be required to be requalified if supervision deems it necessary. Requalification shall include, but not be limited to, the following:

(1) evidence of successfully passing a current physical examination as defined in para. 5-3.1.2(a)

(2) satisfactory completion of a written examination covering operational characteristics, controls, and emergency control skills, such as response to fire, power line contact, loss of stability, or control malfunction, as well as characteristic and performance stability questions appropriate to the crane type for which requalification is being sought

(3) demonstrated ability to read, write, comprehend, and use arithmetic and a load/capacity chart, in the language of the crane manufacturer's operation and maintenance instruction materials

(4) satisfactory completion of a combination written and verbal test on load/capacity chart usage that covers a selection of the configurations (the crane may be equipped to handle) for the crane type for which requalification is being sought

(5) satisfactory completion of an operation test demonstrating proficiency in handling the specific crane type for which requalification is being sought, including both prestart and poststart inspections, maneuvering skills, shutdown, and securing procedures

(6) demonstrated understanding of the applicable sections of the B30 Standard and federal, state, and local safety requirements

(d) Trainee qualification requirements shall include, but not be limited to, the following:

(1) evidence of successfully passing a current physical examination as defined in para. 5-3.1.2(a)

(2) satisfactory completion of a written examination covering safety, operational characteristics and limitations, and controls of the crane type for which qualification is being sought

(3) demonstrated ability to read, write, comprehend, and use arithmetic and a load/capacity chart, in the language of the crane manufacturer's operations and maintenance instruction materials

(4) satisfactory completion of a combination written and verbal test on load/capacity chart usage covering various crane configurations

(e) Trainee qualification, operator qualification, and operator requalification shall be performed by a designated person who, by experience and training, fulfills the requirements of a qualified person.

(f) Operator physical examinations shall be required every 3 years as defined in para. 5-3.1.2(a), or more frequently if supervision deems it necessary.

(07) **5-3.1.3 Responsibilities**

While the organizational structure of various projects may differ, the following roles are described here for purposes of delineating responsibilities. All responsibilities listed below shall be assigned in the work site organization. (A single individual may perform one or more of these roles.)

crane operator: directly controls the crane's functions.

crane owner: has custodial control of a crane by virtue of lease or ownership.

crane user: arranges the crane's presence on a worksite and controls its use there.

lift director: directly oversees the work being performed by a crane and the associated rigging crew.

site supervisor: exercises supervisory control over the work site on which a crane is being used and over the work that is being performed on that site.

5-3.1.3.1 Responsibilities of the Crane Owner and Crane User. In some situations the owner and the user may be the same entity and is therefore accountable for all of the following responsibilities. In other cases, the user may lease or rent a crane from the owner without supervisory, operational, maintenance, support personnel, or services from the owner. In these situations, paras. 5-3.1.3.1.1 and 5-3.1.3.1.2 shall apply:

5-3.1.3.1.1 The crane owner's responsibilities shall include the following:

(a) providing a crane that meets the requirements of Chapters 5-1 and 5-2 of the applicable volume as well as specific job requirements defined by the user

(b) providing a crane and all necessary components, specified by the manufacturer, that meets the user's requested configuration and capacity

(c) providing all applicable load/capacity chart(s) and diagrams

(d) providing additional technical information pertaining to the crane, necessary for crane operation, when requested by the crane user

(e) providing field assembly, disassembly, operation, maintenance information, and warning decals and placards installed as prescribed by the crane manufacturer

(f) establishing an inspection, testing, and maintenance program in accordance with Chapter 5-2 and informing the crane user of the requirements of this program

(g) using personnel that meet the requirements for a designated person as defined in para. 5-0.2.2 for the purposes of maintenance, repair, transport, assembly, and disassembly

(h) using personnel that meet the requirements for a qualified or designated person as defined in para. 5-0.2.2, for inspections as required in Section 5-2.1

5-3.1.3.1.2 The crane user's responsibilities shall include the following:

(a) complying with the requirements of this Volume, manufacturer's requirements, and those regulations applicable at the worksite

(b) using supervisors for crane activities that meet the requirements for a qualified person as defined in para. 5-0.2.2

(c) ensuring that the crane is in proper operating condition prior to initial use at the worksite by

(1) verifying that the crane owner has provided documentation that the crane meets the requirements of para. 5-2.1.5

(2) verifying that a frequent inspection has been performed as defined in para. 5-2.1.2

(d) verifying that the crane has the necessary lifting capacity to perform the proposed lifting operations in the planned configuration

(e) using crane operators that meet the requirements of paras. 5-3.1.1 and 5-3.1.2(f) and are qualified to perform the tasks that will be required with the crane to which they are assigned to operate

(f) ensuring the assigned operator(s) has been notified of adjustments or repairs that have not yet been completed, prior to commencing crane operations

(g) using personnel that meet the requirements for a qualified or designated person as defined in para. 5-0.2.2 for inspections as required in Section 5-2.1

(h) using personnel that meet the requirements for a designated person as defined in para. 5-0.2.2 for the purposes of maintenance, repair, transport, assembly, and disassembly

(i) ensuring that all personnel involved in maintenance, repair, transport, assembly, disassembly, and inspection are aware of their responsibilities, assigned duties, and the associated hazards

(j) ensuring that the inspection, testing, and maintenance programs specified by the crane owner are followed

5-3.1.3.2 Responsibilities of Site Supervisor and Lift Director. In some situations, the site supervisor and the lift director may be the same person.

5-3.1.3.2.1 The site supervisor's responsibilities shall include the following:

(a) ensuring that the crane meets the requirements of Chapter 5-2 prior to initial site usage.

(b) determining if additional regulations are applicable to crane operations.

(c) ensuring that a qualified person is designated as the lift director.

(d) ensuring that crane operations are coordinated with other jobsite activities that will be affected by or will affect lift operations.

(e) ensuring that the area for the crane is adequately prepared. The preparation includes, but is not limited to, the following:

(1) access roads for the crane and associated equipment

(2) sufficient room to assemble and disassemble the crane

(3) an operating area that is suitable for the crane with respect to levelness, surface conditions, support capability, proximity to power lines, excavations, slopes, underground utilities, subsurface construction, and obstructions to crane operation

(4) traffic control as necessary to restrict unauthorized access to the crane's working area

(f) ensuring that work involving the assembly and disassembly of a crane is supervised by a qualified person.

(g) ensuring that crane operators meet the requirements of para. 5-3.1.2.

(h) ensuring that conditions that may adversely affect crane operations are addressed. Such conditions include, but are not limited to, the following:

(1) poor soil conditions

(2) wind velocity or gusting winds

(3) heavy rain

(4) fog

(5) extreme cold

(6) artificial lighting

(i) allowing crane operation near electric power lines only when the requirements of para. 5-3.4.5 have been met.

(j) permitting special lifting operations only when equipment and procedures required by this Volume, the crane manufacturer, or a qualified person are employed. Such operations include, but are not limited to, the following:

(1) multiple crane lifts

(2) lifting personnel

(3) pick and carry operations

(k) ensuring that work performed by the rigging crew is supervised by a qualified person.

(l) ensuring that crane maintenance is performed by a designated person.

5-3.1.3.2.2 The lift director's responsibilities shall include the following:

(a) being present at the jobsite during lifting operations.

(b) stopping crane operations if alerted to an unsafe condition affecting those operations.

(c) ensuring that the preparation of the area needed to support crane operations has been completed before crane operations commence.

(d) ensuring necessary traffic controls are in place to restrict unauthorized access to the crane's work area.

(e) ensuring that personnel involved in crane operations understand their responsibilities, assigned duties, and the associated hazards.

(f) addressing safety concerns raised by the operator or other personnel and being responsible if he decides to overrule those concerns and directs crane operations to continue. (In all cases, the manufacturer's criteria for

safe operation and the requirements of this Volume shall be adhered to.)

(g) appointing the signalperson(s) and conveying that information to the crane operator.

(h) ensuring that signalperson(s) appointed meet the requirements of Section 5-3.3.

(i) allowing crane operation near electric power lines only when the requirements of para. 5-3.4.5 and any additional requirements determined by the site supervisor have been met.

(j) ensuring precautions are implemented when hazards associated with special lifting operations are present. Such operations include, but are not limited to, the following:

(1) multiple crane lifts

(2) lifting personnel

(3) pick and carry operations

(4) mobile cranes operating on barges

(k) ensuring that the applicable requirements of ASME B30.23 are met when lifting personnel.

(l) informing the crane operator of the weight of loads to be lifted, as well as the lifting, moving, and placing locations for these loads.

(m) obtaining the crane operator's verification that this weight does not exceed the crane's rated capacity.

(n) ensuring that a crane's load rigging is performed by designated personnel as defined in para. 5-0.2.2.

(o) ensuring that the load is properly rigged and balanced before it is lifted more than a few inches.

5-3.1.3.3 Responsibilities of Crane Operators. The operator shall be responsible for the following listed items. The operator shall not be responsible for hazards or conditions that are not under his direct control and that adversely affect the lift operations. Whenever the operator has doubt as to the safety of crane operations, the operator shall stop the crane's functions in a controlled manner. Lift operations shall resume only after safety concerns have been addressed or the continuation of crane operations is directed by the lift director.

5-3.1.3.3.1 The operator's responsibilities shall include the following:

(a) reviewing the requirements for the crane with the lift director before operations.

(b) knowing what types of site conditions could adversely affect the operation of the crane and consulting with the lift director concerning the possible presence of those conditions.

(c) understanding and applying the information contained in the crane manufacturer's operating manual.

(d) understanding the crane's functions and limitations as well as its particular operating characteristics.

(e) using the crane's load/capacity chart(s) and diagrams and applying all notes and warnings related to the charts to confirm the correct crane configuration to suit the load, site, and lift conditions.

(f) refusing to operate the crane when any portion of the load or crane would enter the prohibited zone of energized power lines except as defined in para. 5-3.4.5.4.

(g) performing a daily inspection as specified in paras. 5-2.1.2(a), (c), (d), (h), and 5-2.4.2(a)(1).

(h) promptly reporting the need for any adjustments or repairs to a designated person.

(i) following applicable lock out/tag out procedures.

(j) not operating the crane when physically or mentally unfit.

(k) ensuring that all controls are in the off or neutral position and that all personnel are in the clear before energizing the crane or starting the engine.

(l) not engaging in any practice that will divert his attention while actually operating the crane controls.

(m) testing the crane function controls that will be used and operating the crane only if those function controls respond properly.

(n) operating the crane's functions, under normal operating conditions, in a smooth and controlled manner.

(o) knowing and following the procedures specified by the manufacturer or approved by a qualified person, for assembly, disassembly, setting up, and reeving the crane.

(p) knowing how to travel the crane.

(q) observing each outrigger during extension, setting, and retraction or using a signalperson to observe each outrigger during extension, setting, or retraction.

(r) ensuring that the load and rigging weight(s) have been provided.

(s) calculating or determining the net capacity for all configurations that will be used and verifying, using the load/capacity chart(s), that the crane has sufficient net capacity for the proposed lift.

(t) considering all factors known that might affect the crane capacity and informing the lift director of the need to make appropriate adjustments.

(u) knowing the standard and special signals as specified in Section 5-3.3 and responding to such signals from the person who is directing the lift or an appointed signalperson. (When a signalperson is not required as part of the lift operation, the operator is then responsible for the movement of the crane. However, the operator shall obey a stop signal at all times, no matter who gives it.)

(v) understanding basic load rigging procedures. For responsibility of rigging the load and ensuring that the load is rigged properly see paras. 5-3.1.3.2.2(n) and (o).

(w) if power fails during operations

(1) setting all brakes and locking devices

(2) moving all clutches or other power controls to the off or neutral position

(3) landing any load suspended below the hook under brake control if practical

(x) before leaving the crane unattended

(1) landing any load suspended below the hook, unless the requirements of para. 5-3.2.1.4(d) are met.

(2) disengaging the master clutch.

(3) setting travel, swing, boom brakes, and other locking devices.

(4) putting controls in the off or neutral position.

(5) stopping the engine. An exception to this may exist when crane operation is frequently interrupted during a shift and the operator must leave the crane. Under these circumstances, the engine may remain running and paras. 5-3.1.3.3.1(x)(1) through (4) shall apply. The operator shall be situated where any entry to the crane can be observed.

(6) considering the recommendations of the manufacturer for securing the crane, when a local weather storm warning exists.

SECTION 5-3.2: OPERATING PRACTICES

5-3.2.1 Handling the Load

5-3.2.1.1 Size of Load

(a) No crane shall be loaded beyond the specifications of the load rating chart, except for test purposes as provided in Section 5-2.2.

(b) The load to be lifted shall be within the rated capacity of the crane in its existing configuration [refer to para. 5-1.1.1(d)].

(c) When loads that are not accurately known are to be lifted, the designated person responsible for supervising the lifting operations shall ascertain that the weight of the load does not exceed the crane ratings at the maximum radius at which the load is to be handled.

(d) When rotation-resistant ropes are used for load hoisting with an operating design factor less than 5, but in no case less than 3.5, the following special provisions shall apply:

(1) For each such lifting assignment

(a) an appointed person shall direct each lift

(b) a qualified person shall ascertain that the rope is in satisfactory condition [paras. 5-2.4.2(a)(1)(a) through (e)] both before and after lifting; more than one broken wire in any one lay shall be sufficient reason to consider not using the rope for such lifts

(c) operations shall be conducted in such a manner and at such speeds as to minimize dynamic effects

(2) Each lift under these provisions shall be recorded in the crane inspection record and such prior uses shall be considered before permitting another such lift.

(3) These provisions are not intended to permit duty cycle or repetitive lifts to be made with operating design factors less than 5.

5-3.2.1.2 Operational Aids

(a) In all cases, verified weights, measured radii, and manufacturer's load/capacity chart capacities and instructions shall take precedence over operational aids when handling a load. If it is necessary to temporarily override an operational aid to handle a rated capacity load within the limits established by the manufacturer's load capacity chart and instructions, the user shall comply with paras. 5-3.2.1.1(a) through (c).

(b) When operational aids are inoperative or malfunctioning, the crane and/or device manufacturer's recommendations for continued operation or shutdown of the crane shall be followed until the problems are corrected. Without such recommendations and any prohibitions from the manufacturer against further operation, the following requirements shall apply:

(1) Recalibration or repair of the operational aid shall be accomplished as soon as is reasonably possible, as determined by a qualified person.

(2) When a load indicator, rated capacity indicator, or rated capacity limiter is inoperative or malfunctioning, the designated person responsible for supervising the lifting operations shall establish procedures for determining load weights and for conducting the lifts in accordance with paras. 5-3.2.1.1(a) through (c).

(3) When a boom angle or radius indicator is inoperative or malfunctioning, radii or boom angle shall be determined by measurement.

(4) When an anti–two-block device, two-block damage prevention device, or two-block warning device is inoperative or malfunctioning, the designated person responsible for supervising the lifting operations shall establish procedures, such as assigning an additional signalperson, to furnish equivalent protection. This does not apply when lifting personnel. Personnel shall not be lifted when two-block devices are not functioning properly.

(5) When a boom length indicator is inoperative or malfunctioning, the designated person responsible for supervising the lifting operations shall establish procedures for conducting the lifts in accordance with paras. 5-3.2.2.1(a) through (c).

(6) When a level indicator is inoperative or malfunctioning, other means shall be used to level the crane within the level requirements specified by the manufacturer.

5-3.2.1.3 Attaching the Load

(a) The hoist rope shall not be wrapped around the load.

(b) The load shall be attached to the hook by means of slings or other devices of sufficient capacity.

5-3.2.1.4 Holding the Load

(a) The operator shall not leave the controls while the load is suspended, except as permitted in para. 5-3.2.1.4(d). (07)

(b) No person should be permitted to stand or pass under a suspended load.

(c) If the load hoist mechanism is not equipped with an automatic brake and the load must remain suspended for any considerable length of time, the operator shall hold the drum from rotating in the lowering direction by activating the device specified in para. 5-1.3.2(a)(4). The boom hoist brakes shall be set and the device specified in para. 5-1.3.1(c) shall be engaged.

(d) As an exception to para. 5-3.2.1.4(a), under those circumstances requiring a load to be held suspended for a period of time exceeding normal lifting operations, the operator may leave the controls provided that, prior to that time, the appointed individual and operator shall establish the requirements for restraining the boom hoist, telescoping, load, swing, and outrigger functions, and provide notices, barricades, or whatever other precautions may be necessary.

5-3.2.1.5 Moving the Load

(a) The person directing the lift shall see that

(1) the crane is level and, where necessary, blocked

(2) the load is well secured and balanced in the sling or lifting device before it is lifted more than a few inches

(3) the lift and swing path is clear of obstructions

(4) all persons are clear of the swing radius of the crane counterweight

(b) Before starting to lift, the following conditions should be noted:

(1) The hoist rope shall not be kinked.

(2) Multiple-part lines shall not be twisted around each other.

(3) The hook shall be brought over the load in such a manner as to minimize swinging.

(4) If there is a slack rope condition, it shall be determined that the rope is seated on the drum and in the sheaves as the slack is removed.

(5) The effect of ambient wind on the load and on crane stability.

(c) During lifting operations, care shall be taken that

(1) there is no sudden acceleration or deceleration of the moving load

(2) load, boom, or other parts of the machine do not contact any obstruction

(d) Side loading of booms shall be limited to freely suspended loads. Cranes shall not be used for dragging loads sideways.

(e) The operator should avoid carrying loads over people.

(f) On wheel-mounted cranes, no loads shall be lifted over the front area, except as specified by the crane manufacturer.

(g) The operator shall test the brakes each time a load approaching the rated load is handled by lifting it a few inches and applying the brakes.

(h) Any time outriggers are used, the outriggers shall be extended or deployed per the crane manufacturer's load/capacity chart specifications and set to remove the machine weight from the wheels, except for locomotive cranes. [For locomotive cranes, refer to para. 5-3.2.1.5(j).] When partially extended outriggers are used, the following requirements, when applicable, shall be met:

(1) Crane operation with partially extended outriggers shall only be undertaken if approved by the crane manufacturer.

(2) Outriggers shall be set at equal positions that correspond to the load/capacity charts supplied by the manufacturer for those positions. Only the load chart(s) corresponding to the outrigger positions shall be used for operation.

(3) When situations arise where outriggers must be set at unequal positions that correspond to the load/capacity charts supplied by the manufacturer (see Fig. 16), the load/capacity charts corresponding with the individual quadrants of operation shall be used. The manufacturer or qualified person shall be consulted to determine if any capacity reductions, special operating procedures, or limitations are required.

(a) The crane operator shall approve the setup of the crane. If a crane operator has a supervisor involved in crane setup, the operator and the supervisor shall discuss and agree upon any required limitations.

(b) A means shall be provided to limit crane movement or to warn the operator of proximity to prohibited operational ranges or areas.

(4) When situations arise that will not permit outriggers to be set at positions that correspond to the locations established by the manufacturer's load/capacity chart(s), the crane manufacturer shall be consulted to determine if any capacity reductions, special operating procedures, or limitations are required. If required information is not available from the manufacturer, a qualified person shall be consulted.

(i) Neither the load nor the boom shall be lowered below the point where less than two full wraps of rope remain on their respective drums.

(j) When lifting loads with locomotive cranes without using outriggers, the manufacturer's instructions shall be followed regarding truck wedges or screws. When using outriggers to handle loads, the manufacturer's instructions shall be followed.

(k) When two or more cranes are used to lift one load, one designated person shall be responsible for the operation. That person shall analyze the operation and instruct all personnel involved in the proper positioning, rigging of the load, and the movements to be made. Decisions such as the necessity to reduce crane ratings, load position, boom location, ground support, and speed of movement shall be in accordance with this analysis.

(l) While in transit, the following additional precautions shall be exercised:

(1) The boom should be carried in line with the direction of motion.

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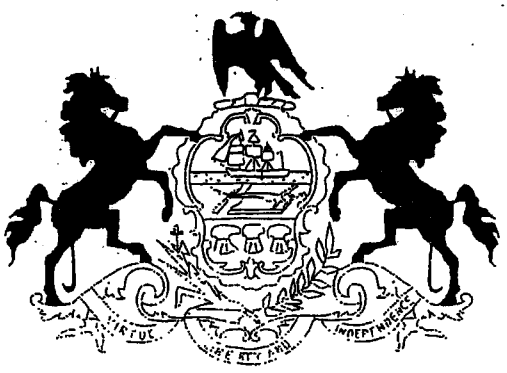

Sunrise Evaluation Report

This questionnaire is designed to obtain information, which will assist the Department of State in evaluating the need for regulation of an occupation or profession and in analyzing proposed legislation seeking to establish a new regulation under the Department of State, Bureau of Professional and Occupational Affairs. Please read each question carefully and provide complete responses to all questions. If you think a given question is not applicable, you must explain why. Once a complete evaluation form has been submitted to the Department of State, it will be treated as a public document pursuant to the Pennsylvania Open Records Law.

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ROBERT HEENAN
Business Manager

CHARLES PRISCOPO, Ass't Bus. Mgr.
FREDERICK W. BORGMANN, President
MIKE MAZZA, Vice President

AFFILIATED WITH THE AND BUILDING

AMERICAN FEDERATION OF LABOR TRADES DEPARTMENT

THOMAS P. DANESE, Recording Secretary
JAMES T. JONES, Treasurer
PAUL HEADLEY, Financial Secretary

1375 VIRGINIA DRIVE - SUITE 100, FORT WASHINGTON, PA 19034
(215) 542-7500
Fax: (215) 542-7557

September 2, 2004

Samuel Denisco
Deputy Director of Legislative Affairs
307 North Office Building
Harrisburg, PA 17102-0029

Dear Mr. Denisco,

Enclosed please find our proposal for Crane Operator Licenses in the State of Pennsylvania. Accidents involving cranes can be costly in terms of serious injury, property damage, lost time, and litigation. Safety for the general public, and construction workers in the crane industry is always of the utmost concern for all Pennsylvania employers. Construction cranes have continued to evolve into more portable, powerful and efficient pieces of equipment. They are used at almost every construction site. The greater complexity makes them increasingly less forgiving and heightens the level of operator training and skill necessary for safe operation.

Standardized assessment of the knowledge and skills required of crane operators can lead to accident reduction. Proper crane operator training and certification is important to help ensure cranes are operated in a manner that minimizes the potential for accidents that would result in serious injuries and/or fatalities. Automobiles and motorcycles are licensed, and their licenses can be suspended if the operator is a threat to himself or others. Why not license operators of cranes in Pennsylvania.

This bill would not conflict with the current safety provided by the construction crane standards. It will specifically address and incorporate the training requirements for crane operators, as outlined in ASME B30.5. NCCCO operator certification is already formally recognized by federal OSHA to demonstrate an acceptable level of operator training. This bill could simply require all crane operators to have NCCCO certification (or a recognized equivalent) as a prerequisite for the Pennsylvania crane license.

Thank you,

Robert T Heenan
Business Manager

The Department of State may oppose any legislation which proposes the regulation of any unregulated professional or occupational group or which proposes to expand the scope of practice of any regulated professional or occupational group until the Department has received and reviewed a completed original and ten (10) copies of his Sunrise Evaluation Report. Accordingly, **the proponent(s) of such a bill are advised to answer the following questions as thoroughly and completely as possible.** Please feel free to attach supplemental sheets of plan white typing paper if you are unable to provide complete responses in the spaces provided herein.

---

(1) Provide the name, address and telephone number and representative of organizations know to be advocating or opposing the legislation.

See Attachment #1

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(2) Fully describe the extent to which members of the general public are advocating or opposing the legislation.

To the best of our knowledge the public is not opposed. If the public were aware of the safety issues during crane activity in densly populated areas, they would certainly advocate our proposal.

---

(3) Provide the number of Pennsylvania practitioners in each organization, which advocates or opposes the legislation.

These organizations advocate the legislation: Maxim Crane, Manitowoc Crane Group, PECO Nuclear, St. Paul Ins. Co., PA DOT, IUOE Local 542, IUOE Local 66, Am-Quip Crane, Thackery Crane, Atlantic Crane Service, Excelon Corp., Associated Builders & Contractors, Greiner Industries, Stephenson Equipment Co. Century Steel Erectors, Master Builders Association of Western PA, Eckstine & Associates

(a) Explain whether the aggregate number of licenses in any given occupation or profession would be sufficient to ensure a reasonable cost to each individual licensee.

Yes. Currently there are 1,351 certified PA residents meething the criteria for the proposed license. We feel the individual license cost will be reasonable.

(b) Is the membership within the occupation or profession to be regulated generally united in support of a need for licensure?

Generally yes.

Attachment # 1

March 22, 2004

Senator Edwin B. Erickson
168 Capital Building
Senate Box 203026
Harrisburg, PA 17120

Manitowoc Crane Group

John M. Kennedy
Director Sales, Major Crane
Rental Accounts

Subject: Crane Operator Certification

Dear Senator Erickson,

I am writing in support of efforts to introduce legislation to require crane operator certification in Pennsylvania. The Manitowoc Crane Group is a leading worldwide supplier of construction cranes with products lines including boom trucks, rough terrain, truck mounted and all terrain hydraulic cranes, tower cranes, and lattice boom crawler and truck mounted cranes. Capacities range from 10 tons to over 1,400 tons. We have a major manufacturing facility located in Shady Grove, Pennsylvania where we employ approximately 900 employees.

As the leading supplier of construction cranes in the United States, Manitowoc has long been an active promoter of safe lifting practices. It is our belief that a standardized assessment of the skills and knowledge required of crane operators can lead to fewer accidents. We have already incorporated this requirement for our internal crane operators. Requiring crane operators to be licensed by an accredited certifying body will help ensure that cranes are operated in a manner that reduces the potential for accidents that could result in property damage, serious injuries and/or fatalities. The National Commission for the Certification of Crane Operators (NCCCO) is an accredited organization that has been recognized by OSHA. Manitowoc has and will continue to be a large supporter of this organization providing both financial and intellectual resources. I currently serve as Secretary Treasurer of NCCCO.

If I can be of any assistance as you work on this valuable legislation please do not hesitate to contact me at the number shown below.

Sincerely,
THE MANITOWOC CRANE GROUP

John M. Kennedy
Director Sales
Major Crane Rental Accounts

2401 S. 30th Street
Manitowoc, WI 54220

P.O. Box 70
Manitowoc, WI 54221-0070

Phone 920-683-8501

Fax 920-683-8411

MAXIM
Crane Works
508 C DiGiulian Blvd
Glen Burnie, MD 21061

3-12-04

The Honorable Mario J. Civera Jr.
House Representative District 164
Address??

Dear Sir,

I understand that you are in support of a bill that would require crane operators in the state of Pennsylvania to be licensed while operating certain type cranes. I am the Corporate Safety Director of the largest crane rental company in the U.S. and I would applaud your efforts and proactive approach to move such a bill into the Pennsylvania legislature. The destruction that can be unleashed on a construction project and the injuries and fatalities that occur to the employees and to the general public can be devastating. It's hard to imagine that we license barbers, home improvement contractors, and plumbers, to name a few, yet a piece of equipment that could stand hundreds of feet in the air and come crashing down creating tremendous damage and loss of life is not operated by an individual licensed to do so by minimum state standards but simply by an employers need to fill the seat for the day. At the risk of sounding as though the crane industry is made entirely of rebels I want to assure you that it is not, many of us take pride in what we do however, I can also assure you that in my 26 years in the business there are far too many companies that do not train and qualify their operators to perform their duties safely as professionals. The industry is in desperate need of a level playing field for training, documenting, and certifying operators to meet minimum standards.

Maxim Crane has 45 branch offices coast to coast and 3 of them are in PA. I can assure you the steps you are considering are in the right direction and you have our support in legislation that will promote a safer workplace for all employees and provide protection for the general public. Your constituents and our employees deserve no less.

If I can be of any assistance, provide information or testimony at a hearing if required, I would be more than happy to do so. I can be reached at 410-582-9106.

Respectfully,.

William Smith
Corporate Safety Director
Maxim Crane Works

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June 23, 2004

Tony Lusi, IUOE Local 542
Via Email
Jatc542@aol.com

Dear Tony:

I am writing in support of legislation in your state requiring crane operators to demonstrate their knowledge and skill before they are allowed to operate cranes. Before I state my reasons for supporting your legislation let me introduce myself. I am a former crane operator with 16 years experience as well as owning my own crane service in Colorado Springs, Colorado during the seventies. In addition to my operating experience I have a BS in Construction Management, 7 years experience as a construction executive and 10 years experience as a construction safety professional. I hold the following professional designations: CSP (Certified Safety Professional), CHST (Construction Safety and Health Technician), CCO (Certified Crane Operator, all specialties National Commission for the Certification of Crane Operators). Currently, I am employed by St. Paul Fire and Marine Insurance Company, a property and liability insurer, as a risk control specialist. During my career with St. Paul, I authored Professional Crane Operator, a 40 hour training program for mobile crane operators.

Since my graduation from Colorado State University in 1970 I have been continuously employed in the construction industry. During that time I have worked extensively with cranes and crane operators. Based upon this experience, it is my impression that very few crane operators have the minimum level of knowledge specified in the latest ASME B30.5 Standard for Mobile and Locomotive Cranes, which is an industry consensus standard and the most up to date document dealing with crane operator qualifications. Statistics have shown that the crane industry suffers from an excessive number of accidents. These accidents are almost always expensive in terms of personal injury and property damage. As a consequence, most insurers, including The St. Paul, now have a full-time safety professional dedicated to improving crane safety.

My duties with St. Paul require me to spend most of my time training crane operators in the safety aspects of their jobs. Based upon experience gained during these training sessions, as well as my 16 years experience as a crane operator, I am of the opinion that most crane operators are very good at pulling levers and making the crane perform. However, the sad and scary thing is that these same crane operators lack the knowledge to understand safety requirements established by crane manufacturers and government

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regulations, as well as the skill to calculate how much weight can be placed on the hook of a crane in a given situation.

Presently, most crane operators do not have to demonstrate any special knowledge or skill before they are allowed to operate a crane despite operating what is arguably the most dangerous piece of construction equipment on a jobsite. Further, a crane may injure a member of the general public as well as workers on a construction site.

I personally feel that it is inappropriate to allow people to operate a crane without demonstrating proper knowledge and skill. We require them to do this to drive a car as well as to drive the crane on a public road. I strongly support legislation in your state to require crane operators to demonstrate a minimum acceptable level of knowledge and skill prior to operating a crane. I also ask that you include in your legislation a recognition of crane operators certified by the National Commission for the Certification of Crane Operators as having fulfilled the knowledge, skill, and medical requirements contained on your legislation.

Thank you for your time and consideration. If you have any questions or comments for me please do not hesitate to call or write.

Sinerely,

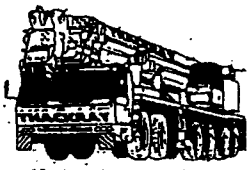
Dave Ritchie

Dave Ritchie, CSP, CHST, CCO
PO Box 1419
Bastrop, Texas, 78602
512-303-6277
dave.ritchie@stpaul.com

cc: Don Shelafo, Colorado Journeyman & Apprentice Training For Operating Engineers
Graham Brent, NCCCO

Thackray Crane Rental, Inc.

2071 Byberry Road • Philadelphia, Pennsylvania 19116
Phone (215) 464-1600 • Toll Free 1-800-34-CRANE • Fax (215) 464-2020



Hydraulic Crane Rental
Warehouse Storage

June 23, 2004

Senator Edwin B. Erickson
168 Capital Building
Senate Box 203026
Harrisburg, PA 17120

Dear Sir,

As the owner of a major crane rental company in Philadelphia, I am writing to applaud your efforts in working towards crane operator licensing in the state of Pennsylvania. This, in my opinion, will not only improve the safety of personnel on job sites, but will also help to lower insurance rates, which have skyrocketed in the past several years.

Thackray Crane Rental has already taken step towards improving safe operating of our cranes by requiring all of our operators to pass the NCCCO written exam and practical test. This helps to insure that our operators know the rules and requirements for safe crane operations.

If I can be of assistance in providing information to help get this legislation passed, I would be happy to do so. I can be reached at 215-464-1600.

Respectfully yours,

Robert B. Thackray
Thackray Crane Rental

PECO NUCLEAR

A Unit of PECO Energy

PECO Energy Company
1848 Lay Road
Delta, PA 17314-9032
717 456 7014

September 11, 1998

Robert Heenan, Business Manager
I.U.O.E. Local 542
Suite 100
1375 Virginia Drive
Fort Washington, Pa. 19034

Dear Bob:

As we discussed in our telephone conversation on Thursday, September 10, 1998, PECO Nuclear will be requesting crane operators for work in our nuclear facilities that have been certified by the National Commission for the Certification of Crane Operators. The current plan is to start requesting crane operators with this certification as of January, 1999.

This has been a topic of discussion at several Built-Rite meetings at Limerick and OLM meetings at PBAPS. It is my understanding from these discussions that you currently have a limited number of crane operators available with this certification. Please advise me if you will be able to supply certified crane operators in sufficient numbers to meet our future requirements which should be similar to the past two years outages at LGS and PBAPS.

I look forward to your response. Please call me at 717-456-3144 if you have any questions regarding this topic.

Sincerely,

Gary D. Morgan
Manager, Contract Services

GDM/lhd

cc: File

(GDM305)

ATLANTIC CRANE INSPECTION SERVICE
P.O. Box 747
Bensalem, PA 19020
Office: (215) 639-2579 Fax: (215) 639-2316

June 23, 2004

Rep. Mario J. Civera Jr.
105 Ryan Building
Harrisburg PA 17120

Dear Sir,

I am writing to give my opinion on the proposed bill requiring crane operators in Pennsylvania to be licensed. I am an independent Crane Inspector and crane operator with closet to 40 years of experience.

Over the past 25 years or so, Cranes have become more complex, with capacity that range from several tons to several hundred tons. The level of skill needed to operate cranes has increased; however, the amount of training that an operator receives has not kept pace. I feel that with the requirement of a license to operate a crane would increase the training for operators, in turn improving safety conditions through the industry.

If you have any questions that I could assist you with, please feel free to contact me.
I can be reached through my office at 215-639-2579 or on my cell at 215-275-6018

Respectfully,

William Hottenstein
President
Atlantic Crane Inspection Services

Morrow Equipment
COMPANY, L.L.C.

The American home of LIEBHERR

Tel 503 585 5721
Fax 503 363 1172

3218 Pringle Road SE
P O Box 3306
Salem, Oregon 97302-0306
USA

www.morrowequipment.com
info@morrow.com

January 28, 2004

Mr. Stephen Brown
Director, Construction Training
1125 17th Street, N.W.
Washington, D.C. 20036

Re: Certified Operators

Dear Stephen,

Morrow Equipment Company, L.L.C. is proud to be a sponsor of the National Commission for the Certification of Crane Operators as a financial contributor as well as panel member on the current Tower Crane Task Force.

Morrow believes that trained, certified operators are essential to workplace safety and to ensure that only qualified persons operate cranes. It is unfortunate that it has taken this long to implement a program, but the fact that it is moving forward rapidly, and is being adopted as law by several states, reinforces the consensus that safety will be improved.

Please feel free to give me a call at 503-585-5721 ext. 554 if you have any questions regarding Morrow Equipment Company, L.L.C's position regarding this matter.

Best regards,

Morrow Equipment Company, L.L.C.

Peter Juhnke
National Service Manager

(4) Document any threat to public health, safety or general well being that would result from the unregulated practice of the occupation or profession that is subject to proposed regulation.

See Attachment #2

(a) Indicate clearly how the proposed regulation will ameliorate those threats.

The crane industry and their affiliates are leading the way by advocating training and education to meet the minimum regulatory standards. The regulations address written and practical (hands on) testing.

(b) Provide evidence of "net" benefit when weighed against the following possible effects:

(i) Restriction upon the opportunity to enter a given occupation or profession,

The net benefit is that everyone who enters this profession will have a minimum level of skill and general knowledge. This benefit will also impact the safety for workers and the general public.

(ii) Restricted supply of practioners,

This will give the industry the best qualified and skilled people operating cranes. This will also impact the safety of workers and the general public.

(iii) Increased cost of services passed on to consumers.

We cannot forsee any cost at this time.

(5) Describe the functions performed by the occupation or profession which the legislation proposes to regulate, or whose scope of practice the legislation proposes to expand, including the extent to which practitioners of this occupation or profession work under supervision and the nature of that supervision, the degree of independent judgment which they are required to exercise, the level of skill and expertise required to exercise that judgment and the level of education and experience which they possess.

See Attachments #3 and #4

Attachment # 2

8/03

THE ASSOCIATED PRESS

The burned cab of a crane that struck an overhead power line at the JDM Materials plant in suburban Philadelphia.

Crane hits wire, kills 3 workers

By BILL BERGSTROM
THE ASSOCIATED PRESS

TELFORD – A man was electrocuted and two co-workers died trying to save him yesterday when a crane struck an overhead power line at a concrete plant in suburban Philadelphia.

As electricity coursed through the rig, two men rushed to assist its driver, who had been hurled from his cab. One began administering cardiopulmonary resuscitation, but the rescue attempt went horribly awry when the second worker touched the still-electrified crane, sending a deadly jolt through all three men, authorities said.

"He put his hand on his shoulder, and he steadied himself on the crane, and that's when they all got it," said Telford Borough police Chief Douglas Bickel.

Other rescuers, terrified that they too would be shocked and killed, had to stand by until the live wire was shut off by a utility, said George Strickland, general manager of the JDM Materials plant where the accident took place. While they waited, the crane became so hot with live power that it caught fire.

"It seemed like an eternity. I don't know how long it actually took," Strickland said.

The 9:15 a.m. accident left the crane a smoking ruin. Hours after the disaster, a 7,200-volt electrical line remained draped over its boom.

Authorities did not immediately release the names of the victims. Strickland said the three worked for a Bensalem company that had been hired to demolish an old structure at the plant.

Witnesses said the crane was backing up when it ran into the wires, Strickland said.

STATE IN BRIEF

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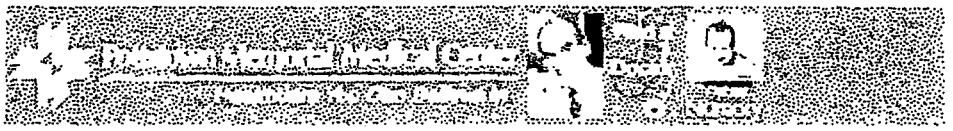
McGraw-Hill CONSTRUCTION

power & industrial

Deadly Crane Accident Kills Three

Three employees of Robert Forepaugh Inc., a Bensalem, Pa.-based demolition contractor, were killed Aug. 21 when a wheeled crane's boom became entangled in a 7,200-volt power line while demolishing a cement batch plant at a JDM Materials cement plant in Telford, Pa. The incident occurred when Robert Forepaugh, 68, backed the crane up an incline under the energized power line and the boom hit the wires. Forepaugh was thrown or fell from the truck cab. Two other workers, George H. Frederick, 41, and Daniel G. Evans, 29, went to his aid and were electrocuted when one came in contact with the crane. "One witness said they didn't realize the crane was energized and apparently thought Forepaugh had suffered a heart attack," says Douglas Bickel, Telford police chief. Forepaugh was in the process of cutting and pulling down the batch plant conveyor when the incident occurred. "The power lines were quite a distance from where they were working," says Bickel. The federal Occupational Safety and Health Administration is investigating the incident, according to an OSHA spokeswoman. But it is unclear what actions can be taken as it appears that the three victims were the only employees of the company.

http://www.enr.com/news/powerindus/archives/030901b.asp



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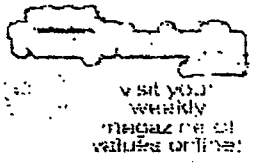


OSHA: Safety precautions weren't taken before fatal crane accident

Beth Cohen , Special to The Mercury 02/10/2004

TELFORD – The federal government has issued a final report stating certain equipment and employee safety precautions weren't taken before three workers were electrocuted in a crane accident in Telford last August.

The Department of Labor's Occupational Health and Safety Administration cited and imposed a potential $1,375 fine against JDM Materials Co. Inc. of Philadelphia and Huntingdon Valley, the company that hired the three contractors who died.

Meanwhile, David Kwass, a Philadelphia lawyer who represents the estates of the three men who were electrocuted – Robert Forepaugh, George Frederick and Daniel Evans – continues to investigate causes for the Aug. 21 accident at the JDM Materials Co. site at 451 E. Reliance Road.

Forepaugh owned and operated Robert Forepaugh Inc., a Bensalem demolition company hired to knock down an old JDM Materials concrete plant. Forepaugh was working on the site with his nephew, Frederick, and a family friend, Evans. Forepaugh died when the crane he was operating brushed overhead power lines. Frederick and Evans died while trying to help Forepaugh.

Kwass said Wednesday that his law firm typically takes the stance that more than one party usually is responsible for workplace accidents.

"All OSHA investigates is whether the employers ensure proper training and equipment safety for their employees," he said. "OSHA does not investigate the root causes of an accident."

Kwass said his firm is investigating whether JDM and PPL Electric Utilities, which owns the 7.2 kilovolt power lines on the work site, had any role in the accident.

"We haven't had a chance to review the report from OSHA yet," Kathy Frazier, a PPL Electric Utilities spokeswoman, said. She would not comment on any potential litigation.

Kwass said he worked closely with OSHA investigators during the preparation of the final report.

Kwass said his firm is investigating whether PPL and JDM had safety programs

U. S. Department of Labor - OSHA
U. S. Customs House, Room 242
2nd and Chestnut Streets

Philadelphia, PA 19106

Inspection Number: 307016386
Inspection Dates: 03/05/2004 - 03/19/2004
Issuance Date: 03/22/2004

Citation and Notification of Penalty

Company Name: Delaware Valley Crane Inc.
Inspection Site: Girard Point, Pier #1, Philadelphia, PA 19145

The alleged violations below have been grouped because they involve similar or related hazards that may increase the potential for injury resulting from an accident.

Citation 1 Item 1a Type of Violation: Serious

29 CFR 1926.550(a)(5): The employer did not designate a competent person to inspect all machinery and equipment prior to each use to make sure it was in safe operating condition:

a) Girard Point, Pier #1, Grove Hydraulic Crane, Model TM890, Serial #675000 - The crane was not inspected by a designated competent person prior to each use. The crane had safety deficiencies such as a non-operational Kruger LMI, unsecured floats, and unidentified control levers. Observed 03/05/04.

Date By Which Violation Must be Abated: Corrected During Inspection
Proposed Penalty: $ 600.00

Citation 1 Item 1b Type of Violation: Serious

29 CFR 1926.550(a)(16): Modifications or additions which affected the capacity or safe operation of the equipment were made without the manufacturer's written approval:

a) Girard Point, Pier #1, Grove Hydraulic Crane, Model TM890, Serial #675000 - The Kruger Mark III system was not functional. The cable that should have run up the boom and anchored to the boom head for the purpose of determining the actual boom length, was disconnected and tied back to the base section. The boom angle indicator was not operational. Observed 03/05/04.

Date By Which Violation Must be Abated: Corrected During Inspection

---

U. S. Department of Labor - OSHA
U. S. Customs House, Room 242
2nd and Chestnut Streets

Philadelphia, PA 19106

Inspection Number: 307016386
Inspection Dates: 03/05/2004 - 03/19/2004
Issuance Date: 03/22/2004

Citation and Notification of Penalty

Company Name: Delaware Valley Crane Inc.
Inspection Site: Girard Point, Pier #1, Philadelphia, PA 19145

Citation 1 Item 2 Type of Violation: Serious

29 CFR 1926.550(b)(2): Section 5-1.9.3(d) American National Standards Institute, B30.5-1968, Safety Code for Crawler, Locomotive and Truck Cranes as adopted by 29 CFR 1926.550(b)(2): Means were not provided for securely fastening outrigger floats to the outriggers when in use:

a) Girard Point, Pier #1, Grove Hydraulic Crane, Model TM890, Serial #675000 - The outrigger floats were not securely attached to the outrigger jacks. The float under the left front outrigger jack had missing attachment components and was not secured. The float under the 5th outrigger was not secured to the jack. The left rear and right rear floats had missing attachment components. Observed 03/05/04.

Date By Which Violation Must be Abated: Corrected During Inspection
Proposed Penalty: $ 600.00

James P. Harvey
For— PHYLLIS KYNER
Area Director

U.S. Department of Labor
Occupational Safety and Health Administration
U.S. Customs House - Room 242
2nd and Chestnut Streets
Philadelphia, PA 19106
Phone: (215)597-4955 FAX: (215)597-1956

INVOICE/
DEBT COLLECTION NOTICE

Company Name: Delaware Valley Crane Inc.
Inspection Site: Girard Point, Pier #1, Philadelphia, PA 19145
Issuance Date: 03/22/2004

Summary of Penalties for Inspection Number 307016386

Citation 1, Serious = $ 1200.00
TOTAL PROPOSED PENALTIES = $ 1200.00

To avoid additional charges, please remit payment promptly to this Area Office for the total amount of the uncontested penalties summarized above. Make your check or money order payable to: "DOL-OSHA". Please indicate OSHA's Inspection Number (indicated above) on the remittance.

OSHA does not agree to any restrictions or conditions or endorsements put on any check or money order for less than full amount due, and will cash the check or money order as if these restrictions, conditions, or endorsements do not exist.

Pursuant to the Debt Collection Act of 1982 (Public Law 97-365) and regulations of the U.S. Department of Labor (29 CFR Part 20), the Occupational Safety and Health Administration is required to assess interest, delinquent charges, and administrative costs for the collection of delinquent penalty debts for violations of the Occupational Safety and Health Act.

Interest. Interest charges will be assessed at an annual rate determined by the Secretary of the Treasury on all penalty debt amounts not paid within one month (30 calendar days) of the date on which the debt amount becomes due and payable (penalty due date). The current interest rate is 2%. Interest will accrue from the date on which the penalty amounts (as proposed or adjusted) become a final order of the Occupational Safety and Health Review Commission (that is, 15 working days from your receipt of the Citation and Notification of Penalty), unless you file a notice of contest. Interest charges will be waived if the full amount owed is paid within 30 calendar days of the final order.

U.S. Department of Labor
Occupational Safety and Health Administration
U.S. Customs House - Room 242
2nd and Chestnut Streets
Philadelphia, PA 19106
Phone: (215)597-4955 FAX: (215)597-1956

Citation and Notification of Penalty

To:
Delaware Valley Crane Inc.
and its successors
99 Leonard Ln.
Thorofare, NJ 08086-2151

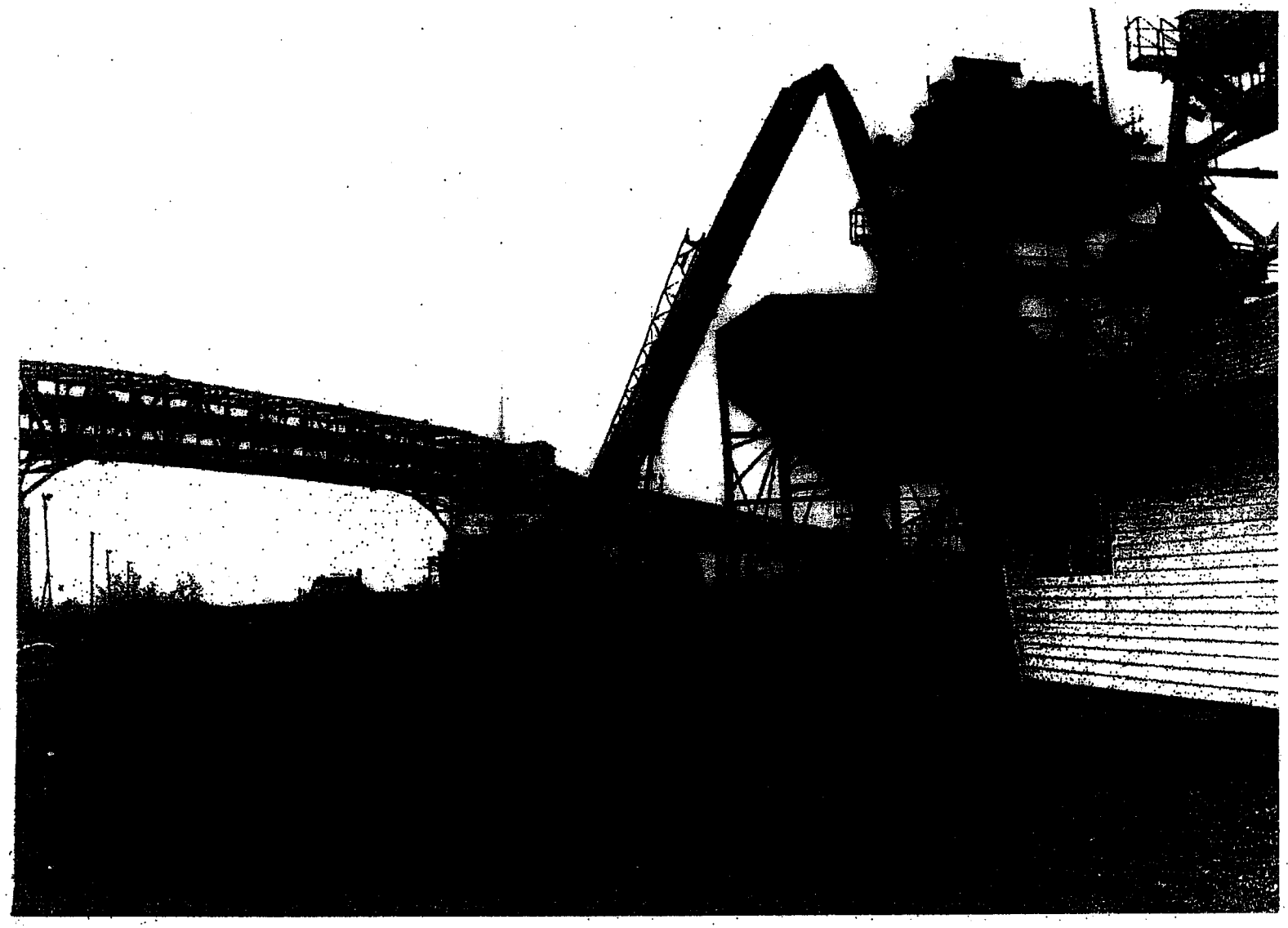
Inspection Site:
Girard Point, Pier #1
Philadelphia, PA 19145

Inspection Number: 307016386
Inspection Date(s): 03/05/2004-03/19/2004
Issuance Date: 03/22/2004

The violation(s) described in this Citation and Notification of Penalty is (are) alleged to have occurred on or about the day(s) the inspection was made unless otherwise indicated within the description given below.

This Citation and Notification of Penalty (this Citation) describes violations of the Occupational Safety and Health Act of 1970. The penalty(ies) listed herein is (are) based on these violations. You must abate the violations referred to in this Citation by the dates listed and pay the penalties proposed, unless within 15 working days (excluding weekends and Federal holidays) from your receipt of this Citation and Notification of Penalty you mail a notice of contest to the U.S. Department of Labor Area Office at the address shown above. Please refer to the enclosed booklet (OSHA 3000) which outlines your rights and responsibilities and which should be read in conjunction with this form. Issuance of this Citation does not constitute a finding that a violation of the Act has occurred unless there is a failure to contest as provided for in the Act or, if contested, unless this Citation is affirmed by the Review Commission or a court.

Posting - The law requires that a copy of this Citation and Notification of Penalty be posted immediately in a prominent place at or near the location of the violation(s) cited herein, or , if it is not practicable because of the nature of the employer's operations, where it will be readily observable by all affected employees. This Citation must remain posted until the violation(s) cited herein has (have) been abated, or for 3 working days (excluding weekends and Federal holidays), whichever is longer. **The penalty dollar amounts need not be posted and may be marked out or covered up prior to posting.**



2 workers still in critical condition

Equipment unloading blocks downs 25,000-volt power line

By JENNIFER MOOK
Eagle Staff Writer

PARKER TWP — Two men remained in critical condition at a Pittsburgh hospital today after being shocked on a power line Monday afternoon.

Richard Jones, 41, of Chicora and Scott Walker, 21, of Fenelton were working at a home under construction at 200 Rocks Road in Parker Township when the accident occurred, according to Bruin firefighters.

The firefighters said Jones was unloading concrete blocks at the site about 1:30 p.m. when the boom loader he was using to unload the blocks snapped a 25,000-volt power line. The line fell onto a pickup truck from which Walker was emerging.

Both men were burned. They were flown to Mercy Hospital.

Walker was more seriously injured, said Linda Ross, a hospital spokeswoman.

She said he suffered second-and third-degree burns over 47 percent of his body. Jones also suffered second- and third-degree burns.

Both men underwent "debriding" surgery Monday night, a procedure by which burns are cleaned of damaged tissue.

Walker was to undergo another cleaning surgery today and might possibly have repair surgery Wednesday, Ross said.

The accident disrupted electric service for many residents in northern Butler County.

Mary Lynn Sacco, a spokeswoman for Allegheny Power, said 900 homes in Petrolia, Bruin, North Washington and Parker lost power for an hour.

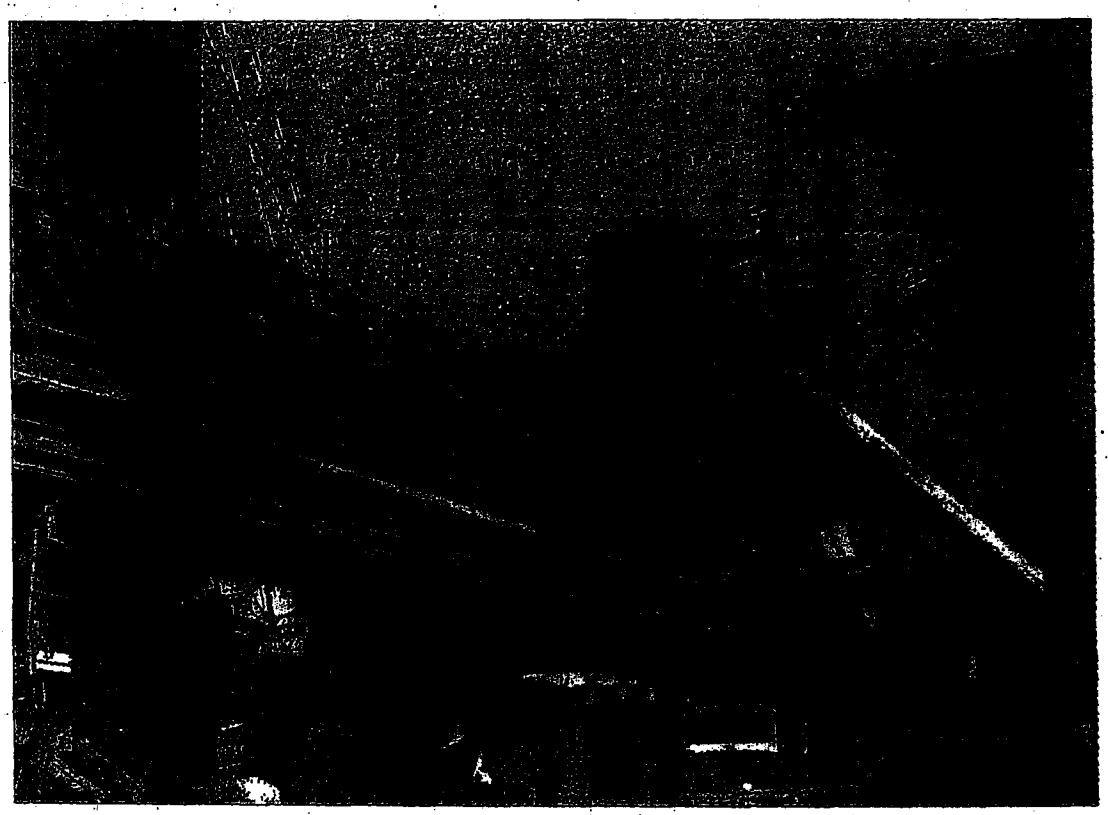
This is the second time this year a worker was either injured or killed because of working near power lines.

Two weeks ago, David Palmer, 47, of Franklin, Venango County, was electrocuted when a crane carrying steel beams touched an overhead line while Palmer was handling a beam.

He was working at a construction site of Hunter's Truck Sales in Eau Claire.

Eagle Staff Writer Michael S. Trego contributed to this report.

NATIONAL



Don Simmons/Toledo Blade

CRANE COLLAPSE

An injured worker is brought to the ground after a construction crane collapsed yesterday onto an Interstate 280 bridge over the Maumee River in Toledo, Ohio, crushing several vehicles and killing three people. At least two others were injured, Fire Capt. Robert Krause said. Investigators were trying to determine whether the injured were workers or people driving across the bridge. The bridge had remained open to traffic while crews constructed a new section alongside it, Krause said. "There's massive damage," he said.

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transportation

Worker Killed At Woodrow Wilson Bridge Project

A crane operator working on an overpass in Maryland near the new Woodrow Wilson bridge across the Potomac River was electrocuted Aug. 23 when the crane's boom fell and hit a power line, says a spokesman for the project.

Robert Farrell, 44, an operator for heavy-highway contractor G.A. & F.C.Wagman Inc., York, Pa., was working on a new overpass across the Capital Beltway in Oxon Hill, Md., near the site of the new Wilson span. Project spokesman John Undeland says Farrell had finished using the crane to move some construction equipment and had put the boom in the "up" position. After Farrell got out of the cab, the boom started to come down, Undeland says. Farrell tried to stop the boom but it hit the power wires, and he was electrocuted, according to Undeland and Eric Menzer, a spokesman for Wagman. Officials said attempts to revive Farrell on the site were not successful.

Officials said the cause of the accident hasn't been determined. Maryland's Occupational Safety and Health Administration, State Highway Administration, federal OSHA and the Prince George's County Police Dept. and Wagman are investigating the accident. Menzer says there is no confirmed chronology yet of what happened. He also said he was unable to discuss specifics of what happened until the investigation is complete.

Menzer says the project was shut down the rest of the day of the accident, which was a Friday, and reopened on Aug. 26. He says the project also will be closed early on the 26th and all of the following day so other workers can attend Farrell's funeral. Menzer says Farrell, of Norfolk, Va., had been with Wagman since 1998.

Undeland says this is the only fatality on the $2.4-billion project and that there had not been any previous major injuries since the job began. Besides the bridge itself, the project includes major Beltway interchange improvements in Maryland and Virginia approaching the new span.

Menzer says the last fatality at G.A. & F.C. Wagman occurred several years ago.

He also says, "We certainly have a significant emphasis on safety within the company." In addition, he says the project had a full safety plan with weekly safety meetings and daily "safety huddles."

http://www.enr.com/news/transportation/archives/020826a.asp

Subj: **PA Crane Accidents**
Date: 3/3/2004 4:03:32 PM Eastern Standard Time
From: Bray.Barbara@dol.gov
To: jatc542@aol.com
File: **PACraneA** (976945 bytes) DL Time (49333 bps): < 5 minutes
Sent from the Internet (Details)

3/3

Mr. Lusi,

The accident investigation database does not allow us to search by state, so I searched by each office that did investigations in PA: Allentown, Erie, Harrisburg, Philadelphia, Pittsburgh, and Wilkes-Barre. The total, from 1972 to the present, is 106 accident investigations.

The attached file shows you the searches.

You can also search by Region (not included in this attachment), and the total for Region 3 from 1972 to the present is 398. Region 3 includes the states of PA, DE, MD, VA, WV, and the District of Columbia.

Feel free to call if you have any questions.

Barb Bray

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Accident Investigation Search

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944403 | 3008546

Query: crane

Text ○ Description ○ Abstract ◉ Desc/Abs ○ Keyword

SIC [ ] 2,3,4-Digit SIC ☐ Fatality Only

Sort ◉ Event Date ○ Reporting ID ☐ Reviewed

Limits: 9999 Display 9999 Process Submit

Office: Philadelphia Reset

Event Date: 1972-07-01 2010-12-31

Insp Nr: [ ] Fed & State

Keyword List: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

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Accident Search Results - crane

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Search Options				
SIC	Date Range		RID	Limits
	1972-07-01	2010-12-31	0317000	9999/9999

Get Detail | Mail | Reset

#11 -- Found 27 -- Processed 27 -- Selected 27 -- Displayed 27

	Summary Nr	Event Date	Report ID	Fat	SIC	Event Description	
☐ 1	202004248	09/05/2002	0317000	X	7361	Death By Fall	
☐ 2	202003844	06/09/2000	0317000	X	1796	Fall Through Roof Opening	
☐ 3	202004255	06/02/1999	0317000		3312	Foot Crushed By Crane Magnet	
☐ 4	202003232	07/06/1998	0317000	X	1795	35 Feet Fall From Bucket	
☐ 5	202003109	03/14/1997	0317000	X	1795	Employee Killed in Fall While Dismantling Crane	E
☐ 6	202003026	10/07/1996	0317000	X	1629	Employee Killed When Struck By Flying Rail	E
☐ 7	014243075	06/17/1996	0317000	X	1623	Employee Decapitated When Truck Crane Overturns	E
☐ 8	014244891	10/29/1993	0317000	X	1629	Employee Killed When Crushed By Crane	E
☐ 9	014314694	11/01/1992	0317000	X	3743	Employee Crushed to Death Between Drive Shaft and Structure	E
☐ 10	014314793	04/16/1992	0317000		1711	Employees Hospitalized After Exposure to Acid Vapor	E
☐ 11	014243455	02/22/1991	0317000	X	4449	Employee Killed By Boom of Falling Crane	E
☐ 12	014245955	02/22/1991	0317000	X	4449	Employee Killed When Struck By Boom of Tipping Crane	E
☐ 13	014243778	10/04/1990	0317000	X	4491	Employee Killed When Crushed By Load of Scrap Metal	E
☐ 14	014243711	07/16/1990	0317000	X	3312	Employee Killed When Crushed in Wire Ropes of Overhead Crane	E
☐ 15	014321178	12/18/1989	0317000	X	1771	Employee Killed When Crushed By Falling Beam	E
☐ 16	014314561	07/19/1989	0317000	X	4911	Electric Shock - Contact With Overhead Line Thru Boom	X
☐							

17	014314462	02/16/1989	0317000	X	4491	Employee Killed By Falling Crane Boom	E
18	014243422	10/02/1988	0317000	X	3312	Employee Killed When Buried in Ore Bin	E
19	014321293	05/19/1988	0317000	X	1541	One Employee Killed By Falling Crane Boom	E
20	014244529	03/31/1988	0317000	X	3462	Electrician Killed in Fall From Ladder	E
21	014320329	01/16/1988	0317000	X	7699	Employee Killed When He Fell Through Opening in Floor	X
22	014314546	10/21/1987	0317000	X	1795	Construction Worker Killed in Fall From Work Platform	X
23	014321012	06/18/1986	0317000	X	1799	Employee Killed in Fall As Crane Overturns	E
24	014320808	08/12/1985	0317000	X	1771	Construction Employee Killed in Fall From Open-Sided Floor	X
25	014320782	06/03/1985	0317000	X	5051	Electric Shock and Fall - Contact With Energized Parts	X
26	014320725	04/11/1985	0317000	X	1611	Electric Shock - Contact With Overhead Line Thru Boom	X
27	014320345	07/16/1984	0317000	X	1794	Employee Killed When Struck By Falling Crane Component	E

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944403 | 3008546

Query: crane

Text ○ Description ○ Abstract ◉ Desc/Abs ○ Keyword

SIC [ ] 2,3,4-Digit SIC ☐ Fatality Only

Sort ◉ Event Date ○ Reporting ID ☐ Reviewed

Limits: 9999 Display: 9999 Process: Submit

Office: Pittsburgh Reset

Event Date: 1972-07-01 2010-12-31

Insp Nr: [ ] Fed & State

Keyword List: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

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Accident Search Results - crane

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Search Options				
SIC	Date Range		RID	Limits
	1972-07-01	2010-12-31	0317500	9999/9999

Get Detail | All | Reset

#12 -- Found 36 -- Processed 36 -- Selected 36 -- Displayed 36

	Summary Nr	Event Date	Report ID	Fat	SIC	Event Description	
☐ 1	200540789	07/10/2002	0317500	X	3441	Employee Crushed Between Two I-Beams	
☐ 2	200540722	02/26/2002	0317500	X	3441	Crushed By	
☐ 3	200540334	10/29/1998	0317500	X	5051	Struck By Steel Beam	
☐ 4	014242226	01/26/1998	0317500	X	1791	Electric Shock - Contact With Overhead Line Thru Load Line	X
☐ 5	200540102	03/17/1997	0317500	X	5093	Employee Killed When Struck By Falling Crane Boom	E
☐ 6	014242093	01/20/1997	0317500	X	1542	Electric Shock - Contact With Overhead Line Thru Boom	X
☐ 7	200540086	12/01/1996	0317500	X	1796	Employee Killed in Fall From Crane Runway	E
☐ 8	014242051	11/01/1996	0317500	X	1791	Employee Killed in Fall From Structural Steel	E
☐ 9	014324149	01/18/1996	0317500	X	5032	Employee Killed When Crushed By Boom of Falling Crane	E
☐ 10	014323828	04/03/1995	0317500	X	4213	Employee Killed By Falling Heavy Box	E
☐ 11	014322416	05/02/1994	0317500	X	3441	Employee Dies When Struck By Falling Steel	E
☐ 12	014322317	11/11/1993	0317500	X	3542	Employee Killed When Struck By Crane Boom	E
☐ 13	014322242	08/25/1993	0317500	X	3321	Employee Dies When Struck By Chain Sling	E
☐ 14	014321962	09/16/1992	0317500	X	5051	One Employee Killed, One Hurt When Run Over By Crane	E
☐ 15	014321913	07/21/1992	0317500	X	4231	Employee Killed in Fall to Barge Bottom	E
☐ 16	014321749	12/18/1991	0317500	X	3312	Employee Struck and Killed By Steel Mold	E
☐	014323703	09/12/1991	0317500	X	1761	Electric Shock - Contact With Overhead Line Thru Load Line	X

17							
18	014322077	07/15/1991	0317500	X	3441	Employee Killed When Struck By Falling Crane Hook	E
19	014325492	04/15/1991	0317500	X	1771	Operator Killed When Thrown From Overturning Crane	E
20	014323752	03/21/1991	0317500	X	3446	Employee Killed When Struck By Falling Metal Grate	E
21	014322051	02/08/1991	0317500	X	3547	Employee Killed When Struck By Crane Spreader Bar	E
22	014322093	10/26/1990	0317500	X	1791	Employee Killed When Crushed By Boom	E
23	000919779	08/16/1990	0317500	X	1751	Employee Killed When Struck By Falling Planks	E
24	014468912	08/18/1988	0317500	X	3312	Employee Killed When Crushed Between Crane and Column	E
25	014469183	04/15/1988	0317500	X	3441	Employee Killed When Struck on Head By Falling Motor	E
26	014470157	10/20/1987	0317500		3312	Employee Injured When Struck By Falling Steel Plate	E
27	014246920	08/04/1987	0317500	X	1795	Employee Killed When Struck By Falling Crane Boom	E
28	014468847	12/16/1986	0317500	X	1622	Electric Shock - Contact With Overhead Line Thru Crane	X
29	014470124	11/23/1986	0317500	X	3312	Employee Killed When Struck By Steel Block	E
30	014470058	09/24/1986	0317500	X	3743	Two Employees Killed When Struck By Falling Steel Billets	E
31	014325351	11/27/1985	0317500	X	3599	Employee Killed When Crushed By Falling Prefabricated Device	E
32	014469993	08/16/1985	0317500	X	5051	Employee Dies 9 Months After Being Pinned By Crane Cab	E
33	014469571	12/12/1984	0317500		1796	Two Construction Employees Working in A Cage Injured in Fall	X
34	014469407	06/07/1984	0317500	X	1611	Employee Killed When Struck By Collapsing Crane Boom	E
35	014469282	04/23/1984	0317500	X	7389	Employee Struck and Killed By Flying Scrap Metal	E
36	014246995	01/31/1978	0317500	X	3321	Employee Fell Through An Opening in A Crane Walkway	X

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944403 | 3008546

Query: crane

Text ○ Description ○ Abstract ◉ Desc/Abs ○ Keyword

SIC [ ] 2,3,4-Digit SIC ☐ Fatality Only

Sort ◉ Event Date ○ Reporting ID ☐ Reviewed

Limits 9999 Display 9999 Process Submit Reset

Office: Harrisburg

Event Date: 1972-07-01 2010-12-31

Insp Nr: Fed & State

Keyword List: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

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Search Options				
SIC	Date Range		RID	Limits
	1972-07-01	2010-12-31	0316700	9999/9999

Get Details All Reset

#9 -- Found 21 -- Processed 21 -- Selected 21 -- Displayed 21

	Summary Nr	Event Date	Report ID	Fat	SIC	Event Description	
☐ 1	200570562	01/16/2003	0316700	X	1541	Crushed Between Top Rail of Lift and Roof Truss	
☐ 2	200570547	11/11/2002	0316700	X	1791	Steel Column Slipped From Sling and Fell on Employee	
☐ 3	200570372	02/23/2001	0316700	X	3312	Struck By Steel Beam	
☐ 4	014318778	09/05/2000	0316700	X	3711	Employee Killed When Head Crushed By Gantry Crane	E
☐ 5	200570323	05/30/2000	0316700	X	3341	Fall From Roof	
☐ 6	200570075	12/12/1996	0316700	X	1795	Employee Killed When Struck By Falling Piece of Crane	E
☐ 7	014320055	02/14/1996	0316700	X	3312	Employee Dies of Embolism Days After Being Struck By Rail	E
☐ 8	014320030	12/16/1994	0316700	X	3443	Crane Operator Struck in Head, Killed By Falling Tank Dike	E
☐ 9	014319941	10/28/1994	0316700	X	3441	Employee Killed When Caught Between Scissor Lift Components	E
☐ 10	014319883	10/13/1994	0316700	X	1521	Electric Shock - Contact With Overhead Line Thru Load Line	X
☐ 11	014319834	03/02/1994	0316700	X	3536	Electric Shock - Direct Contact With Energized Parts	X
☐ 12	014320113	02/20/1992	0316700	X	1611	Electric Shock - Contact With Overhead Line Thru Load Line	X
☐ 13	014187660	08/01/1990	0316700	X	3532	Employee Killed When Struck By Falling Steel Beam	E
☐ 14	014232938	04/11/1988	0316700	X	1796	Employee Killed When Crushed Between Crane and Truck	E
☐ 15	014187066	08/03/1987	0316700	X	7359	Employee Killed When Run Over By Gradall Excavator	E
☐ 16	014186928	12/29/1986	0316700	X	3441	Employee Killed When Struck By Falling Beam	E

☐ 17	014470207	11/03/1986	0316700	X	1791	Employee Killed When Struck By Falling Steel Beam	E
☐ 18	014470694	03/19/1986	0316700	X	3441	Employee Dies After Being Struck By Falling Spreader Bar	E
☐ 19	014470579	05/24/1985	0316700	X	2439	Electric Shock - Contact With Overhead Line Thru Crane Boom	X
☐ 20	014470371	10/15/1984	0316700	X	1791	Employee Riding Crane Hook Ball Fell	X
☐ 21	014470306	08/09/1984	0316700	X	1629	Crane Toppled Off Bridge Throwing Employee Into A Stream	X

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Query: crane

Text ○ Description ○ Abstract ◉ Desc/Abs ○ Keyword

SIC [ ] 2,3,4-Digit SIC ☐ Fatality Only

Sort ◉ Event Date ○ Reporting ID ☐ Reviewed

Limits [9999] Display [9999] Process Submit

Office [Allentown] Reset

Event Date [1972-07-01] [2010-12-31]

Insp Nr [ ] [Fed & State]

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Accident Search Results - crane

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Search Options				
SIC	Date Range		RID	Limits
	1972-07-01	2010-12-31	0317900	9999/9999

Get Detail | All | Reset

#4 -- Found 13 -- Processed 13 -- Selected 13 -- Displayed 13

	Summary Nr	Event Date	Report ID	Fat	SIC	Event Description	
☐ 1	201320512	08/21/2003	0317900	X	1795	Crane Boom Contacts 7200 Vac Wire, 3 Employees Electrocuted	
☐ 2	201320462	01/03/2003	0317900	X	3312	Struck By Crane	
☐ 3	201320306	11/09/2000	0317900	X	5093	Therman Burn	
☐ 4	014258610	09/10/1999	0317900	X	1771	Electric Shock - Contact With Overhead Line Thru Boom	X
☐ 5	014258487	09/15/1998	0317900	X	3312	Employee Crushed and Killed By Overhead Crane	E
☐ 6	014258461	09/04/1998	0317900		1791	Electric Shock - Contact With Overhead Line Thru Boom	X
☐ 7	170340046	07/16/1996	0317900	X	1795	Electric Shock - Contact With Overhead Line Thru Ladder	X
☐ 8	170340707	02/09/1996	0317900	X	5051	Employee Killed When Crushed By Steel Coil on Crane Trolley	E
☐ 9	170340632	07/26/1993	0317900		7389	Contact With Overhead Line Thru Boom	X
☐ 10	170340426	06/03/1992	0317900	X	3312	Employee Killed When Struck By Shaft Being Moved With Crane	E
☐ 11	014258107	01/22/1991	0317900		1771	No Employees Injured When Crane Collapsed	E
☐ 12	014257919	11/27/1989	0317900	X	1791	Fall From Elevation/Wall Opening	
☐ 13	014543813	05/17/1989	0317900	X	1622	Crushed By	

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Accident Investigation Search

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See also instructions. for entering search parameters.

All accident records are subject to a review process to ensure accuracy. Non-reviewed data is unavailable for public internet access.

Warning: Please read important information regarding interpreting search results before using.

944403 | 3008546

Query: crane

Text: ○ Description ○ Abstract ● Desc/Abs ○ Keyword

SIC: [ ] 2,3,4-Digit SIC ☐ Fatality Only

Sort: ● Event Date ○ Reporting ID ☐ Reviewed

Limits: 9999 Display 9999 Process Submit

Office: Erie Reset

Event Date: 1972-07-01 2010-12-31

Insp Nr: [ ] Fed & State

Keyword List: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

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Search Options				
SIC	Date Range		RID	Limits
	1972-07-01	2010-12-31	0336000	9999/9999

Get Detail | All | Reset — #8 -- Found 3 -- Processed 3 -- Selected 3 -- Displayed 3

	Summary Nr	Event Date	Report ID	Fat	SIC	Event Description
☐ 1	200380392	12/03/2001	0336000	X	3743	Fall From Elevation
☐ 2	200380145	06/24/1999	0336000	X	1791	Fall From 20 Foot Poured Concrete Wall
☐ 3	014244024	09/28/1995	0336000	X	1795	Employees Killed When Lift Is Knocked to Ground

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944403 | 3008546

Query: crane

Text ○ Description ○ Abstract ◉ Desc/Abs ○ Keyword

SIC [ ] 2,3,4-Digit SIC ☐ Fatality Only

Sort ◉ Event Date ○ Reporting ID ☐ Reviewed

Limits: 9999 Display 9999 Process [Submit]

Office: Wilkes Barre [Reset]

Event Date: 1972-07-01 2010-12-31

Insp Nr: Fed & State

Keyword List: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

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Search Options				
SIC	Date Range		RID	Limits
	1972-07-01	2010-12-31	0317700	9999/9999

Get Detail | All | Reset

#13 – Found 6 – Processed 6 – Selected 6 – Displayed 6

	Summary Nr	Event Date	Report ID	Fat	SIC	Event Description	
☐ 1	201370087	12/11/1997	0317700	X	3272	Electrocution	
☐ 2	201370111	10/30/1997	0317700	X	1796	Fall When Grain Elevator Collapsed	
☐ 3	014330732	11/11/1989	0317700	X	1794	Employee Crushed By Back Hoe	
☐ 4	014543458	11/23/1987	0317700	X	1629	Electric Shock - Contact With Overhead Line Thru Crane	X
☐ 5	014543342	06/11/1986	0317700	X	1622	Employee Killed in Fall From Bridge Deck	E
☐ 6	014543300	12/14/1985	0317700	X	5051	Large Metal Plates Fell on Employee	X

Occupational Safety & Health Administration
200 Constitution Avenue, NW
Washington, DC 20210

For Immediate Release, Oct. 2, 1997
Contact: Jane Seegal, CPWR, 202-962-8493
(after hours) 202-328-9536
Dr. Anthony Suruda, 801-581-3841

Study Finds Electrocution and Crane Disassembly Errors The Leading Causes of Crane-Related Deaths in Construction; OSHA Had Not Inspected Before Most of the Deaths

WASHINGTON — Robert A. Georgine today announced publication of a study of work-related deaths involving cranes, which shows that electrocutions and injuries during crane assembly or dismantling are the leading causes of death from injuries involving construction cranes. The study found also that there had been no previous inspection by state or federal OSHA at worksites where two-thirds of the deaths studied occurred.

"Once again, we see that training and enforcement are key to improved safety and health for workers in our industry," said Georgine, president of the Building and Construction Trades Department (BCTD), AFL-CIO. "We can save more than 45 lives a year by focusing our attention on these crane-related problems."

The report, *Crane-Related Deaths in the U.S. Construction Industry, 1984-94* , was produced by Anthony Suruda, Marlene Egger, and Diane Liu of the Rocky Mountain Center for Occupational and Environmental Health, University of Utah.

The U.S. Occupational Safety and Health Administration provided the researchers with reports from its Integrated Management Information System. The cases covered 50 states and the District of Columbia for the 11 years 1984 to 1994. The authors selected OSHA investigation reports coded for "hoisting apparatus" and records of investigations in the construction industry

(Standard Industrial Classifications 1500 to 1799) that contained the following words: crane, boom, jib, rigging, load, lift, and aerial. The total number of cases identified — 502 deaths in 479 incidents — does not reflect all work-related deaths. Data were not available for California, Michigan, and Washington state for 1984-89. In addition, OSHA may not have heard about and investigated some deaths.

There were two limitations to the survey. Details provided in each report varied in thoroughness. And, without information on the number of hours worked with cranes, death rates could not be calculated.

Electrocutions through power-line contact caused 39% (198) of the deaths and crane assembly or dismantling caused 12% (58), most of which (48) were during the removal of boom pins from lattice-boom cranes.

The finding that assembly/dismantling causes 12% of crane-related deaths is surprising. Previous studies, such as one in Ontario, Canada, had reported such deaths were 4% of the total. Most of the deaths in this category occurred when a worker was underneath a boom, knocking lower supporting boom pins out, and the boom fell on the worker. At least one manufacturer has proposed the use of conically shaped boom pins that can be inserted only from inside the lattice and thus can be removed without standing under the boom.

Among other findings, the study reported also that only 13% (65) of the deaths analyzed occurred to crane operators.

The authors recommend:

- Training modules and certification for crane operators.
- Training modules for construction site managers and for workers involved in crane assembly, disassembly, and maintenance.
- Crane inspection programs
- Designing retaining pins for lattice-boom cranes so the pins cannot be removed by a worker standing under a boom
- Enforcement of existing regulations, such as the requirement to maintain a separation between equipment and high-voltage power lines of 10 to 45 feet, depending on the voltage.
- An increase in the frequency of OSHA inspections of construction sites that use cranes.

The Center to Protect Workers' Rights (CPWR) supported the research, using funding from the National Institute for Occupational Safety and Health. CPWR is the research arm of the Building and Construction Trades Department. The Building and Construction Trades Department consists of 15 international unions.

Copies of the report are available for $5 postpaid from
The Center to Protect Workers' Rights, Fifth floor,
111 Massachusetts Ave. NW,
Washington, D.C. 20001,
202-962-8490.

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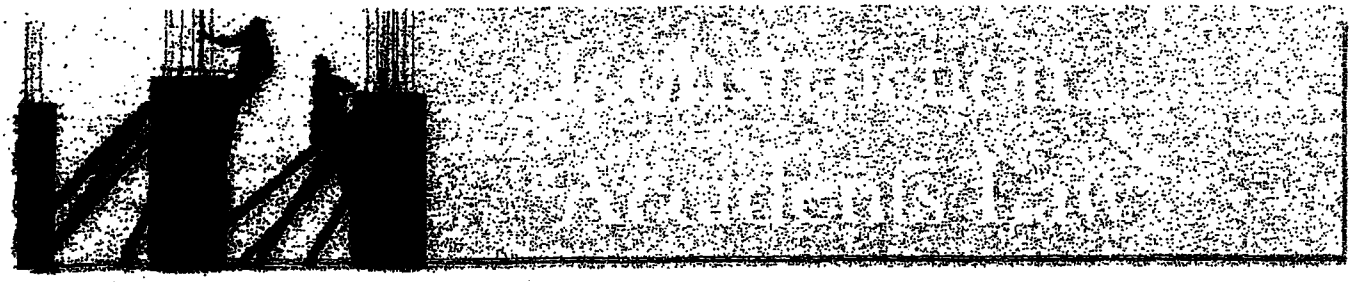

If you are a victim of a crane accident contact a lawyer in confidence here.

Crane accidents result in many serious and fatal injuries each year. According to data kept by Occupational Safety and Health Administration (OSHA), crane accidents claim 50 lives in the United States each year. Approximately 500 construction workers died in crane accidents between 1984 and 1994, according to a study of Occupational Safety and Health Administration (OSHA).

The crane coming into contact with a power line is the most common cause of fatal accidents- roughly 40% of all fatalities are attributable to electrocution. The other major causes of crane accidents include assembly and dismantling the crane (about 12 percent), boom buckling (8 percent), rigging failure (7 percent) and upset and crane overturning (7 percent).

Related Accidents and Injuries.

There are approximately 125,000 cranes in operation today in the construction industry as well as an additional 80,000-100,000 in general and maritime industries. According to the Bureau of Labor Statistics' Census of Fatal Occupational Injuries, 79 fatal occupational injuries were related to cranes, derricks, hoists, and hoisting accessories in 1993. About 250,000 crane operators and a large number of other workers and the general public are at risk of serious and often fatal injury due to accidents involving cranes, derricks, hoists, and hoisting accessories.

Many of these accidents could have been prevented and were caused by poor safety procedures and negligence.

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Contact a lawyer here.

ACCIDENTS INVOLVING CRANES CLAIM 502 LIVES

More than 500 U.S. construction workers died on the job from 1984 to 1994 as the result of accidents involving cranes.

That figure was among the preliminary results of a yet-to-be-released research paper, "A Study of Fatal Injuries in the Construction Industry Involving Cranes," funded by the Center to Protect Workers' Rights and compiled by the University of Utah's Anthony J. Suruda, M.D.

Based on Occupational Safety and Health Administration records for that time period, the report found 480 separate incidents involving cranes and 502 deaths.

Electrocution as the result of power line contact was the leading cause of death, with 198 lives claimed; 58 deaths occurred during crane assembly or dismantling.

Of the 502 fatalities, 65 were crane operators; the rest mostly were other workers on the job. Crane operators were most likely to be killed when the crane was upset or overturned. Twenty-three crane operators died in such accidents, followed by 17 operator deaths as the result of power line contact.

Suruda still is researching whether or not OSHA cited the employers for safety violations in these incidents. Once completed, he said the report should have many uses, including targeting certain aspects of crane operations in union training programs.

Types of fatalities involving cranes in the U.S. construction

Industry--Identified from OSHA Investigations in 1984-94

	Victim Status			
Class of Incident	Crane Operator	Other Worker	Un-known	Total
Overloading	8	14	0	22(4%)
Side Pull	0	0	0	0(0%)
Outrigger failure	0	0	0	0(0%)
Hoist Limitation	1	6	0	7(1%)
Two-blocking	1	10	0	11(2%)
Killer hooks	0	3	0	3(1%)
Boom bucking	6	34	1	41(8%)
Upset/overturn	23	12	2	37(7%)
Unintentional turning	0	0	0	0(0%)
Oversteer/crabbing	0	0	0	0(0%)
Control confusion	0	1	0	1(<1%)
Access/egress	2	0	0	2(<1%)
Power line contact	17	179	2	198(39%)
Assembly/dismantling	2	51	5	58(12%)
Rigging failure	3	33	0	36(7%)
Struck by a moving load	1	21	0	22(4%)
Related to manlifts	0	21	0	21(4%)
Working with swing radius of cab	0	17	0	17(3%)

Other	1	22	1	23(5%)
Unknown/insufficient info.	0	2	0	2(<1%)
Total	65(13%)	426(85%)	11(2%)	502(100%)

The Center to Protect Workers' Rights

Crane-Related Deaths in the U.S. Construction Industry, 1984-94

Anthony Suruda, M.D., M.P.H.
Marlene Egger, Ph.D.
Diane Liu, M.Stat.

Rocky Mountain Center for Occupational and Environmental Health
Department of Family and Preventive Medicine
University of Utah School of Medicine

October 1997

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Suite 509 • Washington, D.C.
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There are engineering controls for prevention of crane accidents. Anti two-blocking devices, outrigger extension sensing systems, overload sensors, and limit switches can eliminate or reduce certain failure modes (Jarasunas 1987). Warning devices and limit switches increase safety by providing more information to the operator and reducing the need for guesswork. However, it is unlikely that engineering controls will make crane operation a simple matter.

Dugan (1972) conducted a survey of members of the International Union of Operating Engineers (IUOE) Local 3, which compared their work injury rates with the frequency of safety training, attitudes about risk, and whether routine jobsite safety meetings were held. Safety training, job safety meetings, and attitudes about risk taking were all felt to be related to the risk of injury in construction.

The present pilot study has investigated whether OSHA reports could be used to furnish additional information on fatal work-related injuries involving cranes and to identify opportunities for prevention by increased worker safety training or other means.

Methods

Data Source

A comparison of sources of data on work-related deaths in the U.S. construction industry indicates that OSHA investigation data provide the most detailed information about workplace deaths (National Institute for Occupational Safety and Health 1993). (table 1).

Table 1. Reported work-related deaths in the U.S. construction industry, various sources, 1980-89

Source of death reports	*Deaths per year*	*Population covered*
Death certificates 1980-89	1,143	50 states and District of Columbia
BLS Annual Survey, 1988	850	50 states and District of Columbia
OSHA 1985-89	699	47 states and District of Columbia[a]
BLS-Census of Fatal Occupational Injuries, 1992-95[b]	1,012	50 states and District of Columbia

a. California, Michigan, and Washington state are excluded.

b. Unpublished data.

Source: For death certificates, National Institute for Occupational Safety and Health 1993; for BLS Annual Survey, Bureau of Labor Statistics 1990; for OSHA 1984-89, U.S. Occupational Safety and Health Administration 1990

The OSHA Office of Management Data Systems provided the authors with data from OSHA reports in the OSHA Integrated Management Information System.

Results

For the 11 years 1984-94, 502 deaths occurred in 479 incidents involving cranes in the construction industry. There were 227 deaths (45%) in SIC 16, heavy construction, 202 deaths (40%) in SIC 17, special trade construction, and 73 deaths (15%) in SIC 15, general construction.

Electrocution by power-line contact was the most common type of incident, with 198 deaths (39%) reported. Other major categories were assembly/dismantling, boom buckling, crane upset/overturn, and rigging failure (table 3).

Crane operators accounted for only 65 (13%) of all deaths from all causes involving cranes (table 4). The distribution of deaths of crane operators by Standard Industrial Classification was similar to that of other deaths involving cranes. The greatest number occurred in SIC 16, followed by SIC 17 and SIC 15. More crane operators were killed in incidents involving upset/overturn or power-line contact than in other types of incidents, such as crane overloading (table 5). For workers who were not crane operators, deaths from power-line contact represented the largest category with 179 (42%) of the deaths in this group of workers.

Of the 58 deaths during assembly or dismantling, 54 deaths (93%) involved lattice-boom cranes, such as truck cranes and crawler cranes (table 6). Few (7%) involved tower cranes. Of the 54 deaths involving lattice-boom cranes, 48 occurred when a worker underneath the boom was knocking the boom pins out while the boom was held by the pendant line. When the lower supporting pins were removed, the boom fell onto the worker.

The most deaths from crane upset or overturn (table 7) involved cranes tipping while moving under load.

There were 36 deaths resulting from improper rigging or rigging failure that allowed a load to fall on a worker while being hoisted by a crane (table 8). There were 17 deaths in which the load slipped from the rigging, 14 deaths in which the rigging broke and allowed the load to fall, and 5 deaths in which the load broke into pieces while being lifted and fell.

There were 22 deaths in 20 incidents involving overloaded cranes (table 9). An overloaded crane overturned in 11 of the deaths. The year of manufacture of the cranes was not available from the OSHA reports. Therefore, it was not possible to determine if crane age was a contributing factor to the incidents.

Workers fatally injured by electrocution were somewhat younger than workers fatally injured by other means (table 10).

OSHA had conducted a previous inspection of the employer in 169 (34%) of the deaths (table 11)

Because data from California, Michigan, and Washington state were missing for 6 of the 11 years in this study, the number of crane-related deaths in the construction industry in 1984-94 probably exceeds the 502 reported here. The total number of such deaths might be higher also because OSHA might have not been aware of some and, thus, not investigated them.

In conclusion, OSHA reports appear to represent a useful means for identifying causes of fatal injury related to the use of cranes in construction in the United States. Because construction cranes operate under varying conditions at multiple worksites, safe operation relies heavily on the skill of people responsible for planning and operation of cranes (Shapiro and Shapiro 1988). Based on the findings reported here, useful preventive measures for fatal injuries related to cranes would be:

- Training modules and certification for crane operators.
- Training modules for construction site managers and for workers involved in crane assembly, disassembly, and maintenance
- Crane inspection programs
- Retaining pins for lattice-boom cranes designed so that the pins cannot be removed by a worker standing under a boom
- Enforcement of existing regulations, such as the requirement to maintain a separation between equipment and high-voltage power lines of 10 to 45 feet, depending on the voltage
- An increase in the frequency of OSHA inspections of construction sites that use cranes.

Table 2. Crane-related deaths from injury, U.S. construction, 1984-94, by Standard Industrial Classification

SIC		*Number of deaths*
	General construction (73 deaths, 15% of the total)	
152	General building contractors - residential	14
154	General building contractors - nonresidential	59
	Heavy construction (227 deaths, 45%)	
1611	Highway and street construction, except elevated highway	39
1622	Bridge, tunnel, and elevated highway	77
1623	Water, sewer, pipeline, and communications and power line	55
1629	Heavy construction, not elsewhere classified	56
	Special trade construction (202 deaths, 40%)	
171	Plumbing, heating, and air conditioning	6
172	Painting and paper hanging	3
173	Electrical work	13
174	Masonry, stonework, and tile setting	4
175	Carpentry and floor work	9
176	Roofing and sheet metal work	14
177	Concrete work	18
178	Water well drilling	2
1791	Structural steel erection (ironwork)	64
1793	Glass and glazing work	1
1794	Excavation work	12
1795	Wrecking and demolition Work	14
1796	Installation or erection of building equipment, not elsewhere classified	11
1799	Special trade contractors, not elsewhere classified	31
Total		502

Note: This listing includes only crane-related deaths investigated by state or federal OSHA. Data for 1984-89 were available from federal OSHA for 47 states, excluding California, Michigan, and Washington; data for 1990-94 covered all 50 states and District of Columbia. (Deaths for the District of Columbia are included in the Maryland total. California data cover 1990-94 and some deaths in 1987-89 during suspension of the CALOSHA program.)

Source: Data from OSHA Integrated Management Information System.

Table 5. Types of deaths from injury involving cranes, by victim's occupation, U.S. construction, 1984-94

	Victim's occupation			
Class of Incident	*Crane operator*	*Other worker*	*Unknown*	*Total*
Power-line contact	17	179	2	198 (39%)
Assembly/dismantling	2	51	5	58 (12%)
Boom buckling	6	34	1	41 (8%)
Upset/overturn	23	12	2	37 (7%)
Rigging failure	3	33	0	36 (7%)
Other	1	22	1	24 (5%)
Overloading	8	14	0	22 (4%)
Struck by a moving load	1	21	0	22 (4%)
Related to manlifts	0	21	0	21 (4%)
Working with swing radius of cab	0	17	0	17 (3%)
Two-blocking	1	10	0	11 (2%)
Hoist limitation	1	6	0	7 (1%)
Killer hooks	0	3	0	3 (1%)
Access/egress	2	0	0	2 (<1%)
Control confusion	0	1	0	1 (<1%)
Side pull	0	0	0	0 (0%)
Outrigger failure	0	0	0	0 (0%)
Unintentional turning	0	0	0	0 (0%)
Oversteer/crabbing	0	0	0	0 (0%)
Unknown/insufficient info.	0	2	0	2 (<1%)
Total	65 (13%)	426 (85%)	11 (2%)	502 (100%)

Note: This listing includes only crane-related deaths investigated by state or federal OSHA. Data for 1984-89 were available from federal OSHA for 47 states, excluding California, Michigan, and Washington; data for 1990-94 covered all 50 states and District of Columbia. (Deaths for the District of Columbia are included in the Maryland total. California data cover 1990-94 and some deaths in 1987-89 during suspension of the CALOSHA program.)

Source: Data from OSHA Integrated Management Information System.

Table 8. Death from injury because of improper rigging or crane-rigging failure. U.S. construction. 1984-94 (Load falling on worker)

Circumstances of death(s)	*Number of deaths*
Load slipped from sling or webbing	11
Load slipped from "C" clamp	3
Load struck object during lift and was dislodged from rigging (no tag lines)	3
Rigging broke during lift	14
Load broke during lift	5
Total	36

Note: Tables on this page include only crane-related deaths investigated by state or federal OSHA. Data for 1984-89 were available from federal OSHA for 47 states, excluding California, Michigan, and Washington; data for 1990-94 covered all 50 states and District of Columbia. (Deaths for the District of Columbia are included in the Maryland total. California data cover 1990-94 and some deaths in 1987-89 during suspension of the CALOSHA program.)

Source: Data from OSHA Integrated Management Information System.

Table 9. Deaths from injury involving overloaded cranes. U.S. construction, 1984-94

Circumstances	*Number of deaths*
Overloaded crane overturned	11
Boom collapse of overloaded crane	8
Other	3
Total	22

Source: Data from OSHA Integrated Management Information System.

Table 12. Total crane-related deaths from injury, including electrocution, U.S. construction, 1984-94

Year of injury	*Total deaths*	*Electrocutions*
1984	42	15
1985	61	20
1986	56	27
1987	44	22
1988	30	15
1989	37	12
1990	70	22
1991	50	18
1992	44	16
1993	34	14
1994	34	17
Total	502	198

Note: This table includes only crane-related deaths investigated by state or federal OSHA. Data for 1984-89 were available from federal OSHA for 47 states, excluding California, Michigan, and Washington; data for 1990-94 covered all 50 states and District of Columbia. (Deaths for the District of Columbia are included in the Maryland total. California data cover 1990-94 and some deaths in 1987-89 during suspension of the CALOSHA program.)

Source: Data from OSHA Integrated Management Information System.

Attachment # 3

Attachment #3

The functions performed by the Crane Operator are quite extensive. They are responsible for all operations of the crane and also for the safe movement and placing of loads. The scope of practice should not expand. Supervision is responsible for lay out of lift plan and coordination of lifts. Crane operators must use common sense and exercise independent judgment with every lift they make. The level of skill and expertise required are laid out in OSHA regulations and ASME standards. We have attached a copy of these standards. Exhaustive analysis by scores of subject matter experts working for the NCCCO (National Crane Operators Certification Program) has developed the attached job task list, which has been validated through two independent industry surveys.

See attachment #4

Attachment # 4

CHAPTER 5-3
Operation

Section 5-3.1 Qualifications for and Conduct of Operators and Operating Practices

5-3.1.1 Operators

(a) Cranes shall be operated only by the following personnel:

(1) persons who have met the requirements of paras. 5-3.1.2(a), (b), and (c);

(2) persons who have met the requirements of para. 5-3.1.2(d) and who are training for the type of crane being operated. While operating, the trainee must be under the direct supervision of a designated, qualified operator;

(3) maintenance personnel who have completed all operator trainee qualification requirements. Operation by these persons shall be limited to those crane functions necessary to perform maintenance on the crane or to verify the performance of the crane after maintenance has been performed; and

(4) inspectors who have completed all operator trainee qualification requirements. Operation by these persons shall be limited to those crane functions necessary to accomplish the inspection.

(b) Only the personnel specified in (a) above, oilers, supervisors, and those specific persons authorized by supervisors, shall enter a crane cab. Persons shall only enter the cab when their duties require them to do so, and then, only with the knowledge of the operator or other appointed persons.

5-3.1.2 Qualifications for Operators. Operators shall be required to successfully meet the qualifications for the specific type crane (see Figs. 1 through 10) that they are operating.

(a) Operator and operator trainees shall meet the following physical qualifications unless it can be shown that failure to meet the qualifications will not affect the operation of the crane. In such cases, specialized clinical or medical judgments and tests may be required.

(1) vision of at least 20/30 Snellen in one eye and 20/50 in the other, with or without corrective lenses;

(2) ability to distinguish colors, regardless of position, if color differentiation is required;

(3) adequate hearing, to meet operational demands, with or without hearing aid;

(4) sufficient strength, endurance, agility, coordination, and speed of reaction to meet the operation demands;

(5) operators and operator trainees shall have normal depth perception, field of vision, reaction time, manual dexterity, coordination, and no tendencies to dizziness or similar undesirable characteristics;

(6) each operator or operator trainee shall successfully pass with a negative result a substance abuse test. The level of testing will be determined by the standard practice for the industry where the crane is employed and this test shall be confirmed by a recognized laboratory service;

(7) no evidence of physical defects or emotional instability that could render a hazard to the operator or others, or that in the opinion of the examiner could interfere with the operator's performance. If evidence of this nature is found, it may be sufficient cause for disqualification; and

(8) evidence that an operator is subject to seizures or loss of physical control shall be sufficient reason for disqualification. Specialized medical tests may be required to determine these conditions.

(b) Operator requirements shall include, but not be limited to, the following:

(1) evidence of successfully passing a physical examination as defined in para. 5-3.1.2(a);

(2) satisfactory completion of a written examination covering operational characteristics, controls, and emergency control skills such as response to: fire, power line contact, loss of stability, or control malfunction, as well as characteristic and performance questions appropriate to the crane type for which qualification is sought;

(3) operators shall demonstrate their ability to read, write, comprehend, and exhibit arithmetic skills and load/capacity chart usage, in the language of the crane manufacturer's operation and maintenance instruction materials;

(4) satisfactory completion of a combination written and verbal test on load/capacity chart usage that covers a selection of the configurations (the crane may be equipped to handle) for the type crane for which qualification is being sought;

(5) completing an operation test demonstrating proficiency in handling the specific type crane, including both pre-start and post-start inspection, maneuvering skills, shutdown, and securing procedures; and

(6) operators shall demonstrate understanding of the applicable sections of the B30 Standard and federal, state, and local requirements.

(c) Operators who have successfully qualified for a specific type crane shall be required to be requalified if supervision deems it necessary. Requalification shall include, but not be limited to, the following:

(1) evidence of successfully passing a current physical examination as defined in para. 5-3.1.2(a);

(2) satisfactory completion of a written examination covering operational characteristics, controls, and emergency control skills such as response to: fire, power line contact, loss of stability or control malfunctions, as well as characteristic performance stability questions appropriate to the crane type for which they are being requalified;

(3) operators shall demonstrate their ability to read, write, comprehend, and exhibit arithmetic skills and load/capacity chart usage, in the language of the crane manufacturer's operation and maintenance instruction materials;

(4) satisfactory completion of a combination written and verbal test on load/capacity chart usage that covers a selection of the configurations (the crane may be equipped to handle) for the type of crane for which the operator is being requalified;

(5) completing an operations test demonstrating proficiency in handling the specific type crane on which they are being requalified, including both pre-start and post-start inspections, maneuvering skills, shutdown, and securing procedures; and

(6) operators shall demonstrate understanding of the applicable sections of the B30 Standard and federal, state, and local safety requirements.

(d) Trainee qualification requirements shall include, but not be limited to, the following:

(1) evidence of successfully passing a physical examination as defined in para. 5-3.1.2(a);

(2) satisfactory completion of a written examination covering safety, operational characteristics and limitations, and controls of the type crane for which they are being qualified;

(3) operator trainees shall demonstrate their ability to read, write, comprehend, and exhibit arithmetic skills and load/capacity chart usage, in the language of the crane manufacturer's operations and maintenance instruction materials; and

(4) satisfactory completion of a combination written and verbal test on load/capacity chart usage covering various crane configurations.

(e) Trainee qualification, operator qualification, and operator requalification shall be performed by a designated person who, by experience and training, etc., fulfills the requirements of a qualified person.

(f) Operator physical examinations shall be required every three years as defined in para. 5-3.1.2(a), or more frequently if supervision deems it necessary.

5-3.1.3 Conduct of Operators

(a) The operator shall not engage in any practice that will divert his attention while actually engaged in operating the crane.

(b) When physically or mentally unfit, an operator shall not engage in the operation of equipment.

(c) The operator shall respond to signals from the person who is directing the lift or an appointed signal person. When a signal person or a crane follower is not required as part of the crane operation, the operator is then responsible for the lifts. However, the operator shall obey a stop signal at all times, no matter who gives it.

(d) Each operator shall be held responsible for those operations under the operator's direct control. Whenever there is any doubt as to safety, the operator shall consult with the supervisor before handling the loads.

(e) Before leaving the crane unattended, the operator shall:

(1) land any load, bucket, lifting magnet, or other device;

(2) disengage the master clutch;

(3) set travel, swing, boom brakes, and other locking devices;

(4) put controls in the off or neutral position;

(5) secure the crane against accidental travel; and

(6) stop the engine.

(7) An exception to (6) above may exist when crane operation is frequently interrupted during a shift and the operator must leave the crane. Under these circumstances, the engine may remain running and the following conditions [including those in paras. (e)(1) through (e)(5) above] shall apply:

(a) the operator shall be situated where unauthorized entry of the crane can be observed; and

(b) the crane shall be located within an area protected from unauthorized entry.

(8) When a local weather storm warning exists, consideration shall be given to the recommendations of the manufacturer for securing the crane.

(f) If there is a warning sign on the switch or engine starting controls, the operator shall not close the switch or start the engine until the warning sign has been removed by an appointed person.

(g) Before closing the switch or starting the engine, the operator shall see that all controls are in the off or neutral position and that all personnel are in the clear.

(h) If power fails during operations, the operator shall:

(1) set all brakes and locking devices;

(2) move all clutches or other power controls to the off or neutral position; and

(3) if practical, land the suspended load under brake control.

(i) The operator shall be familiar with the equipment and its proper care. If adjustments or repairs are necessary, the operator shall promptly report this to the appointed person, and shall also notify the next operator.

(j) All controls shall be tested by the operator at the start of a new shift. If any controls fail to operate properly, they shall be adjusted or repaired before operations are begun.

(k) The manufacturer's boom assembly and disassembly procedures should be followed. Any deviation from the manufacturer's procedure shall require blocking of the boom or boom sections to prevent inadvertent dropping of the boom.

(l) When removing pins or bolts from a boom, workers should stay out from under the boom.

(m) Each outrigger shall be visible to the operator or to a signal person during extension or setting.

Section 5-3.2 Operating Practices

(a) **5-3.2.1 Handling the Load**

5-3.2.1.1 Size of Load

(a) No crane shall be loaded beyond the specifications of the load rating chart, except for test purposes as provided in Section 5-2.2.

(b) The load to be lifted shall be within the rated capacity of the crane in its existing configuration [refer to 5-1.1.1(d)].

(c) When loads that are not accurately known are to be lifted, the designated person responsible for the job lift shall ascertain that the weight of the load does not exceed the crane ratings at the maximum radius at which the load is to be handled.

(d) When rotation resistant ropes are used with an operating design factor less than 5, but in no case less than 3.5, the special provisions that follow shall apply:

(1) For each such lifting assignment:

(a) An appointed person shall direct each lift.

(b) A qualified person shall ascertain that the rope is in satisfactory condition [paras. 5-2.4.2(a)(1)(a) through (e)] both before and after lifting; but more than one broken wire in any one lay shall be sufficient reason to consider not using the rope for such lifts.

(c) Operations shall be conducted in such a manner and at such speeds as to minimize dynamic effects.

(2) Each lift under these provisions shall be recorded in the crane inspection record and such prior uses shall be considered before permitting another such lift.

(3) These provisions are not intended to permit duty cycle or repetitive lifts to be made with operating design factors less than 5.

5-3.2.1.2 Operational Aids

(a) The use of operational aids shall not replace the requirement for complying with sections 5-3.2.1.1(a), (b), and (c). Verified weights and measured radii shall take precedence over indicator readings.

(b) When operational aids are inoperative or malfunctioning, the crane and/or device manufacturer's recommendations for continued use or shutdown of the crane shall be followed. Absent such recommendations, the following requirements shall apply.

(1) Recalibration or repair of the operational aid shall be accomplished as soon as is reasonably possible, as determined by a qualified person.

(2) When a load indicator, rated capacity indicator, or rated capacity limiter is inoperative or malfunctioning, the designated person responsible for supervising the lifting operations shall establish procedures for determining load weights and for conducting the lifts in accordance with 5-3.2.1.1(a), (b), and (c).

(3) When a boom angle or radius indicator is inoperative or malfunctioning, radii or boom angle shall be determined by measurement.

(4) When an anti-two-block device, two-block damage prevention or two-block warning device is inoperative or malfunctioning, the designated person responsible for supervising the lifting operations shall establish procedures such as, assigning an additional signal person, to furnish equivalent protection. This does not apply when lifting personnel. Personnel shall

not be lifted when two-block devices are not functioning properly.

(5) When a boom length indicator is inoperative or malfunctioning, the designated person responsible for supervising the lifting operations shall establish procedures for conducting the lifts in accordance with 5-3.2.2.1(a), (b), and (c).

(6) When a level indicator is inoperative or malfunctioning, other means shall be used to level the crane within the level requirements specified by the manufacturer.

5-3.2.1.3 Attaching the Load

(a) The hoist rope shall not be wrapped around the load.

(b) The load shall be attached to the hook by means of slings or other devices of sufficient capacity.

5-3.2.1.4 Holding the Load

(a) The operator shall not leave the controls while the load is suspended.

(b) No person should be permitted to stand or pass under a suspended load.

(c) If the load hoist mechanism is not equipped with an automatic brake and the load must remain suspended for any considerable length of time, the operator shall hold the drum from rotating in the lowering direction by activating the device specified in para. 5-1.3.2(a)(4). The boom hoist brakes shall be set and the device specified in para. 5-1.3.1(c) shall be engaged.

(d) As an exception to (a) above, under those circumstances where a load is to be held suspended for a period of time exceeding normal lifting operations, the operator may leave the controls provided that, prior to that time, the appointed individual and operator shall establish the requirements for restraining the boom hoist, telescoping, load, swing, and outrigger functions, and provide notices, barricades, or whatever other precautions may be necessary.

5-3.2.1.5 Moving the Load

(a) The person directing the lift shall see that:

(1) the crane is level and, where necessary, blocked;

(2) the load is well secured and balanced in the sling or lifting device before it is lifted more than a few inches;

(3) the lift and swing path is clear of obstructions; and

(4) all persons are clear of the swing radius of the crane counterweight.

(b) Before starting to lift, the following conditions should be noted.

(1) The hoist rope shall not be kinked.

(2) Multiple-part lines shall not be twisted around each other.

(3) The hook shall be brought over the load in such a manner as to minimize swinging.

(4) If there is a slack rope condition, it shall be determined that the rope is seated on the drum and in the sheaves as the slack is removed.

(5) The effect of ambient wind on the load and on crane stability.

(c) During lifting operations, care shall be taken that:

(1) there is no sudden acceleration or deceleration of the moving load; and

(2) load, boom, or other parts of the machine do not contact any obstruction.

(d) Side loading of booms shall be limited to freely suspended loads. Cranes shall not be used for dragging loads sideways.

(e) The operator should avoid carrying loads over people.

(f) On wheel-mounted cranes, no loads shall be lifted over the front area, except as specified by the crane manufacturer.

(g) The operator shall test the brakes each time a load approaching the rated load is handled by lifting it a few inches and applying the brakes.

(h) When the load to be handled and the operating radius require the use of outriggers or at any time when outriggers are used, the outriggers shall be fully extended or deployed per load rating chart specifications and set to remove the machine weight from wheels, except for locomotive cranes. [For locomotive cranes, refer to (j) below.] When outrigger floats are used, they shall be attached to the outriggers. Blocking under outrigger floats, when required, shall meet the following requirements.

(1) Sufficient strength to prevent crushing, bending, or shear failure.

(2) Such thickness, width, and length as to completely support the float, transmit the load to the supporting surface, and prevent shifting, toppling, or excessive settlement under load.

(3) Use of blocking only under the outer bearing surface of the extended outrigger beam.

(i) Neither the load nor the boom shall be lowered below the point where less than two full wraps of rope remain on their respective drums.

(j) When lifting loads with locomotive cranes without using outriggers, the manufacturer's instructions shall be followed regarding truck wedges or screws.

When utilizing outriggers to handle loads, the manufacturer's instructions shall be followed.

(k) When two or more cranes are used to lift one load, one designated person shall be responsible for the operation. That person shall analyze the operation and instruct all personnel involved in the proper positioning, rigging of the load, and the movements to be made. Decisions such as the necessity to reduce crane ratings, load position, boom location, ground support, and speed of movement shall be in accordance with this determination.

(l) While in transit the following additional precautions shall be exercised.

(1) The boom should be carried in line with the direction of motion.

(2) The superstructure shall be secured against rotation (or the boom placed in a boom rack mounted on the carrier), except when negotiating turns when there is an operator in the cab or the boom is supported on a dolly.

(3) The empty hook shall be lashed or otherwise restrained so that it cannot swing freely.

(m) Before traveling a crane with a load, it shall be determined that this practice is not prohibited by the manufacturer. If not, a designated person shall be responsible for the operation. Decisions such as the necessity to reduce crane ratings, load position, boom location, ground support, travel route, and speed of movement shall be in accordance with that person's determination. Specified tire pressure shall be maintained. The boom should be carried in line with the direction of travel. Sudden starts and stops should be avoided. Tag or restraint lines should be used to control swinging of the load.

(n) A crane with or without a load shall not be traveled with the boom so high that it may bounce back over the cab.

(o) When rotating the crane, sudden starts and stops shall be avoided. Rotational speed shall be such that

Written Exam Outline (Core Examination)

The Core examination portion of the CCO written certification program tests the following knowledge areas relating to the operation of cranes:

Domain 1: Site
(Approximately 24% of the test)

Domain 2: Operations
(Approximately 23% of the test)

Domain 3: Technical Knowledge
(Approximately 28% of the test)

Domain 4: Manufacturers' Load Charts
(Approximately 25% of the test)

DOMAIN 1: SITE

(Approximately 24% of the test)

1. Know that the suitability of the supporting surface to handle the expected loads of the operation must be assessed. Elements of concern include but are not limited to:
   (a) weakness below the surface such as voids, tanks and loose fill;
   (b) weakness on the surface such as retaining walls, slopes, excavations and depressions.
2. Know the proper use of mats, blocking or cribbing and outriggers or crawlers as they affect the suitability of supporting surfaces to handle the expected loads of the operation.
3. Know site hazards and restrictions, such as electric power lines and piping.
4. Know how to identify and evaluate site access and usability.
5. Know how to review planned operations and requirements with site supervision (i.e., signal person), to include determination of working height, boom length, load radius and travel clearance.
6. Know how to determine if there is adequate room for extension of crawlers or outriggers/stabilizers and counterweights.

DOMAIN 2: OPERATIONS

(Approximately 23% of the test)

1. Know which federal regulations and industry standards affect safe operation of the crane, including ASME/ANSI B30.5.
2. Know how to inspect the crane for unsafe conditions, complete required records, and communicate the unsafe conditions to the proper authority.
3. Know how to pick, carry, swing and place the load smoothly and safely on rubber tires and on outriggers/stabilizers or crawlers (where applicable).
4. Know how to communicate at the site with management, the crew and the signal person.
5. Know proper procedures and methods of reeving all wire ropes and methods of reeving multiple-part lines and selecting the proper load block and/or ball.
6. Know standard hand signals as specified in ASME/ANSI B30.5.
7. Know how to react to changes in conditions that affect the safe operation of the crane.
8. Know how to shut down and secure the crane properly when leaving it unattended.
9. Know the manufacturer's specifications for operating in various weather conditions, and understand how environmental conditions affect the safe operation of the crane.
10. Know how to properly level the crane.
11. Know how to verify the weight of the load and rigging prior to initiation of the lift.
12. Know how to determine where the load is to be picked up and placed and how to verify the radii.
13. Know basic load rigging procedures.
14. Know how to perform daily maintenance and inspection.
15. Know how to use the following operator aids:
    (a) LMI and rated load indicator
    (b) wind indicator
    (c) anti-two block device
    (d) boom angle indicator
    (e) load indicating device
    (f) boom length indicators
    (g) drum rotation indicators

11. Know how to use operational assist devices which include:
    (a) anti-two lock devices
    (b) load moment indicators and rated load indicators
    (c) outrigger position indicators
    (d) mechanical levels
    (e) boom angle indicators
    (f) load indicating devices
    (g) boom stops and boom hoist disconnects
    (h) radius indicators
    (i) drum rotation indicators
    (j) boom length indicators
12. Know how to calculate net capacity for every possible configuration of crane using the manufacturer's load chart.
13. Know how to use manufacturer approved attachments and their effect on the crane.
14. Know how to obtain dimensions, weight and center of gravity of the load.
15. Know the effects of dynamic loading from:
    (a) wind
    (b) stopping and starting
    (c) impact loading
    (d) moving with the load
16. Know the difference between duty-cycle and lifting operations.
17. Know the effect of side loading.
18. Know the principles of backward stability.
19. Know the effects of thermal expansion and contraction in hydraulic cylinders.

DOMAIN 4: MANUFACTURERS' LOAD CHARTS

(Approximately 25% of the test)

1. Know the terminology necessary to use load charts.
2. Know how to ensure that the load chart is the appropriate chart for the machine in its particular application.
3. Know how to use load charts. This includes knowing:
    (a) the operational limitations of load charts and footnotes
    (b) how to relate the chart to the configuration of the crane, crawlers, or outriggers extended or retracted, jib erected or offset, and various counterweight configurations
    (c) the difference between structural capacity and capacity limited by stability
    (d) what is included in load chart capacity
    (e) the range diagram and its relationship to the load chart
    (f) the work area chart and its relationship to the load chart
    (g) where to find and how to use the "parts-of-line" information
4. Know how to use the load chart together with the load indicators and/or load moment devices.

13. Know emergency response procedures for:
    (a) fire control
    (b) electric power line contact
    (c) loss of stability
    (d) control malfunction
    (e) two-blocking
    (f) overload
    (g) carrier or travel malfunction

DOMAIN 3: TECHNICAL KNOWLEDGE

(Approximately 28% of the test)

1. Know the functions and limitations of the crane and attachments.
2. Know basic crane terms.
3. Know the basics of machine power flow systems:
    (a) mechanical
    (b) electrical
    (c) pneumatic
    (d) hydraulic
    (e) combination
4. Know how the boom hoist and load hoist(s) are driven and engaged to the power source.
5. Know the requirements of standard and optional controls.
6. Know the requirements of pre-operation inspection and maintenance.
7. Know how to use operational assist devices which include:
    (a) anti-two block
    (b) load moment indicators and rated load indicators
    (c) outrigger position indicators
    (d) mechanical levels
    (e) boom angle indicators
    (f) load indicating devices
    (g) boom stops and boom hoist disconnect
    (h) radius indicators
    (i) drum rotation indicators
    (j) boom length indicators
8. Know how to calculate net capacity for every possible configuration of the crane using the manufacturer's load chart.
9. Know how to use manufacturer approved attachments and their effect on the crane.
10. Know the function and safe use of crawler position (extended or retracted), outriggers, and/or stabilizers.
11. Know how to assemble and disassemble boom sections, extensions and jib configurations.
12. Know the effects of thermal expansion and contraction in hydraulic cylinders (where applicable).

DOMAIN 4: MANUFACTURERS' LOAD CHARTS

(Approximately 26% of the test)

1. Know the terminology necessary to use load charts.
2. Know how to use load charts. This includes knowing:
    (a) the operational limitations of load charts and footnotes
    (b) how to relate the chart to the configuration of the crane, crawlers or outriggers extended or retracted, jib erected or offset, and various counterweight configurations
    (c) the difference between structural capacity and capacity limited by stability
    (d) what is included in load chart capacity
    (e) the range diagram and its relationship to the load chart
    (f) the work area chart and its relationship to the load chart
    (g) where to find and how to use the "parts-of-line" information

Practical Exam Outline

The following is an outline of the practical testing procedure, as provided to candidates at the time of testing.

CANDIDATE INFORMATION AND INSTRUCTIONS

The following sections describe the specific tasks you will be performing when taking the practical examination. It is important that you understand these instructions. If there is anything you do not understand, please request clarification from the Examiner.

TASKS

The Four Tasks are:

- Task 1: Place Overhaul Ball in Stop Circle
- Task 2: Follow Hand Signals
- Task 3: Place Overhaul Ball in Barrels
- Task 4: Negotiate Zigzag Corridor With Test Weight

There is also a Pre-Test Briefing, a Pre-Test Familiarization Period, and a Pre-Task Familiarization Period (prior to the zigzag task) with a load. You will be required to complete all phases of the test in sequence.

You must report to the test site at the scheduled time. You are required to bring personal protective equipment to wear during the test including as a minimum: hard hat, work boots, and suitable work clothing.

The Test Site Coordinator is responsible for setting the testing schedule. If you are familiar with the operation of the test crane, you may elect to test first to allow other candidates time to review the operator's manuals and load charts. Otherwise, selection shall be by random drawing or by assignment of the Test Site Coordinator.

During the practical examination, you are under the direction of the Examiner and must follow the Examiner's directions at all times.

Once you have completed all of the tests you are taking, you must leave the testing area. Only personnel involved in the administration of the test are allowed in the test area.

TIME LIMITS

For Task 1, Task 3 and Task 4 an "optimum" time limit has been set. If the task is completed within this time period, you receive no time penalty.

Once you exceed this time limit, you will lose points on a gradual basis. If you take twice as long as the optimum time, you will have lost all the points allotted to that particular task. The "optimum" time for each task is stated as part of the task descriptions.

PRE-TEST BRIEFING

While you are waiting to take your test you will have sufficient time to read this description of the tasks to be performed and review the operator's manuals and load charts for the crane(s) you will operate. In addition, you will be informed of the make and model of the crane, the boom length and the weight of the test load. You will also watch a short video showing all the tasks you will be required to perform during the examination.

Note that:

- The crane's LMI system (if the crane is so equipped) has been correctly programmed and will not interfere with the proper operation of the crane.
- The crane has been set up and leveled. A spirit level is available if you wish to verify level.
- None of the target points or barrels has been placed at a radius that exceeds the crane's rated capacity.
- On telescopic boom cranes, the boom length has been pre-set. You will **NOT** be permitted to telescope at any time.
- All hand signals used throughout the test will be in accordance with ASME B30.5.

UNSAFE ACT

If at any time during the Pre-Test Familiarization Period or during the test, you commit an "unsafe" act, you will be disqualified from continuing with the test. An "unsafe" act includes the following:

- Dropping the ball or Test Weight (on ground, in barrel, etc.);
- Two blocking of the crane;
- Uncontrolled or reckless operation;

- **Failure to respond to a "Stop" signal;**
- **Any action that in the judgment of the Examiner could endanger personnel or equipment at the test site.**

The Examiner has the authority to stop the test at any time for reasons of safety or if the Examiner determines the candidate is attempting to circumvent any task. Please ask the Examiner or proctor if you have questions.

If you are disqualified due to an unsafe act, your case will be reviewed by IAI and CCO, and you will be notified as to your eligibility for rescheduling your practical test.

CANDIDATE ID AND SIGNATURE

Prior to entering the cab, the Examiner will ask you for a government issued photo identification such as a driver's license.

The Examiner will ask if you have read the Candidate Information and Instructions and will answer any questions you may have. He will review with you the weather conditions and ask you to sign indicating you understand the instructions for the test, and agree with the Examiner's assessment of the weather conditions.

WEATHER CONDITIONS/EQUIPMENT PROBLEMS

The Examiner will use an anemometer to check the wind speed and record weather conditions on your score sheet.

The Examiner has the responsibility to determine if weather conditions/equipment problems are such that a test needs to be suspended. If the test is interrupted due to weather conditions/equipment problems, the procedure for restarting will be as follows:

- You will resume the test at the beginning of the task you were performing at the time of the interruption, except for Task 4, when you will go back to the beginning of either Task 4a or 4b, as appropriate.
- You will also be entitled to a Pre-Test or Pre- Task Familiarization period before resuming the test.
- If you resume the test on a different machine, you will have the option of starting the entire test over from the beginning.
- If the testing is delayed to a different day, the test must be restarted from the beginning.

PRE-TEST FAMILIARIZATION PERIOD

- You will be allowed 15 minutes to familiarize yourself with the crane and to examine anything on the crane which you feel is necessary to operate it comfortably.
- You will be allowed to "get the feel" of the controls and run the crane through its functions with the exclusion of telescoping. The brakes and other devices have been set according to the crane manufacturer's recommendations.
- You may not interfere with the test course, lift the Test Weight, or "shadow" the zigzag corridor or the barrels.
- You must finish the Pre-test Familiarization Period with the ball under control in the Start Circle within the 15 minute period.
- The Examiner will notify you when there are 10, 5 and 1 minute(s) remaining.
- If you are ready in less than 15 minutes, you may indicate this to the Examiner.
- If, at the end of the Pre-Test Familiarization Period, you feel you are not ready to take the examination, you should notify the Examiner. You will have, in effect, disqualified yourself from taking the examination at this time, and you will be required to sign to that effect on the Candidate Score Sheet.

TASK 1: PLACE BALL IN STOP CIRCLE

Optimum Time — 1 minute and 30 seconds.

- At the Examiner's indication to start (at which point timing will begin) raise the ball and chain at least 10 ft. off the ground to clear all obstacles and personnel.
- Bring it from its starting position in the Start Circle to the Stop Circle.
- Once the ball reaches the Stop Circle place it there such that the chain suspended from the hook makes contact with the ground inside the circle and remains there.
- The Examiner will give you a stop signal once the ball and chain are under control.

- At the Examiner's direction to start (at which point timing will begin), lift the Test Weight into the air and swing, boom up or down, hoist up or down as you judge necessary to guide the load through the zigzag corridor without touching the ground with the Test Weight, or raising the Test Weight so high that the chain leaves the ground, or touching or knocking over any part of the PVC barrier. Points will be deducted for the following:
  - — Knocking ball off pole
  - — Moving pole base off line
  - — Knocking pole over
  - — Chain leaving ground
  - — Load touching ground
- Timing will stop when you have placed the Test Weight on the ground in the Stop Circle and the Examiner has given you a stop signal. Task is not complete until the load is placed completely within the outside perimeter of the circle and the Examiner has given you a stop signal. If the Examiner does not give you a stop signal, this will indicate the weight is not within the circle and the task continues to be timed.
- At this time the Examiner will reconstruct the corridor as necessary.
- At the direction of the Examiner, at which point timing will begin, lift the Test Weight from the Stop Circle and travel through the corridor in reverse fashion.
- Timing will stop when you have placed the Test Weight on the ground in the Test Weight circle and the Examiner has given you a stop signal. Task is not complete until the load is placed completely within the outside perimeter of the circle and the Examiner has given you a stop signal. If the Examiner does not give you a stop signal, this will indicate the weight is not within the circle and the task continues to be timed.
- The Proctor will then detach the Test Weight from the overhaul ball hook.
- At the Examiner's direction, swing the hook to the Start Circle and allow the Examiner to attach the chain in readiness for the next candidate. Remain in the cab until the Examiner gives you a clear indication that you may leave the cab. Set the swing brake and lock before leaving the cab.

POST TEST PROCEDURES

Once you have completed the practical examination:

- The Examiner will record your performance.
- The Examiner is not permitted to review your score sheet or discuss your performance on the test.
- Exam results will be mailed to you within approximately twelve (12) working days of International Assessment Institute's receipt of the score sheet.
- For tests on any other cranes you have made formal application to test on, return to the candidate briefing area.
- If you have completed all of your tests, you must leave the test site.

(6) Identify any current statutory or case law, which limits what practitioners of this occupation or profession are permitted to do or how they are permitted to hold themselves out to the public.

We are unaware of any current statutory or case law in Pennsylvania.

(a) Whether current legal remedies offer inadequate protection to the public and, if so, explain.

Current legal remedies are not adequate enough to control crane accidents or catastrophic results.

(b) Explain any extent to which the public can control its own exposure to harm or risk of harm.

They should obey construction site warning signs. In some cases they have little control because crane booms and attached loads encompass large areas. People driving cars, working in buildings and walking down the sidewalk have little control of their exposure.

(c) Identify any public or private resource groups, organizations or information centers that may be able to inform the public about potential threats or risks associated with the unregulated practice of a given occupation or profession.

OSHA has a public website that gives some information.

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(7) Explain the extent to which the functions which the legislation proposes to authorize for practitioners of this occupation or profession differ from similar functions performed by practitioners of other occupations or professions.

We do not know of any other license in our Commonwealth that is similar. Crane Operator licensing is drastically different from any other state license.

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(8) Identify the client group with which practitioners of this occupation or profession deal or would deal and the degree to which these clients have the knowledge and the opportunity to evaluate the qualifications of practitioners of this occupation or profession.

Employers. I cannot personally comment on the degree of knowledge each has on this topic. O.S.H.A. regulates employers to have competent people employed to assess skill and qualification of employees.

(b) the crane shall be located within an area protected from unauthorized entry.

(8) When a local weather storm warning exists, consideration shall be given to the recommendations of the manufacturer for securing the crane.

(f) If there is a warning sign on the switch or engine starting controls, the operator shall not close the switch or start the engine until the warning sign has been removed by an appointed person.

(g) Before closing the switch or starting the engine, the operator shall see that all controls are in the off or neutral position and that all personnel are in the clear.

(h) If power fails during operations, the operator shall:

(1) set all brakes and locking devices;

(2) move all clutches or other power controls to the off or neutral position; and

(3) if practical, land the suspended load under brake control.

(i) The operator shall be familiar with the equipment and its proper care. If adjustments or repairs are necessary, the operator shall promptly report this to the appointed person, and shall also notify the next operator.

(j) All controls shall be tested by the operator at the start of a new shift. If any controls fail to operate properly, they shall be adjusted or repaired before operations are begun.

(k) The manufacturer's boom assembly and disassembly procedures should be followed. Any deviation from the manufacturer's procedure shall require blocking of the boom or boom sections to prevent inadvertent dropping of the boom.

(l) When removing pins or bolts from a boom, workers should stay out from under the boom.

(m) Each outrigger shall be visible to the operator or to a signal person during extension or setting.

Section 5-3.2 Operating Practices

(a) **5-3.2.1 Handling the Load**

5-3.2.1.1 Size of Load

(a) No crane shall be loaded beyond the specifications of the load rating chart, except for test purposes as provided in Section 5-2.2.

(b) The load to be lifted shall be within the rated capacity of the crane in its existing configuration [refer to 5-1.1.1(d)].

(c) When loads that are not accurately known are to be lifted, the designated person responsible for the job lift shall ascertain that the weight of the load does not exceed the crane ratings at the maximum radius at which the load is to be handled.

(d) When rotation resistant ropes are used with an operating design factor less than 5, but in no case less than 3.5, the special provisions that follow shall apply:

(1) For each such lifting assignment:

(a) An appointed person shall direct each lift.

(b) A qualified person shall ascertain that the rope is in satisfactory condition [paras. 5-2.4.2(a)(1)(a) through (e)] both before and after lifting; but more than one broken wire in any one lay shall be sufficient reason to consider not using the rope for such lifts.

(c) Operations shall be conducted in such a manner and at such speeds as to minimize dynamic effects.

(2) Each lift under these provisions shall be recorded in the crane inspection record and such prior uses shall be considered before permitting another such lift.

(3) These provisions are not intended to permit duty cycle or repetitive lifts to be made with operating design factors less than 5.

5-3.2.1.2 Operational Aids

(a) The use of operational aids shall not replace the requirement for complying with sections 5-3.2.1.1(a), (b), and (c). Verified weights and measured radii shall take precedence over indicator readings.

(b) When operational aids are inoperative or malfunctioning, the crane and/or device manufacturer's recommendations for continued use or shutdown of the crane shall be followed. Absent such recommendations, the following requirements shall apply.

(1) Recalibration or repair of the operational aid shall be accomplished as soon as is reasonably possible, as determined by a qualified person.

(2) When a load indicator, rated capacity indicator, or rated capacity limiter is inoperative or malfunctioning, the designated person responsible for supervising the lifting operations shall establish procedures for determining load weights and for conducting the lifts in accordance with 5-3.2.1.1(a), (b), and (c).

(3) When a boom angle or radius indicator is inoperative or malfunctioning, radii or boom angle shall be determined by measurement.

(4) When an anti-two-block device, two-block damage prevention or two-block warning device is inoperative or malfunctioning, the designated person responsible for supervising the lifting operations shall establish procedures such as, assigning an additional signal person, to furnish equivalent protection. This does not apply when lifting personnel. Personnel shall

(4) satisfactory completion of a combination written and verbal test on load/capacity chart usage that covers a selection of the configurations (the crane may be equipped to handle) for the type crane for which qualification is being sought;

(5) completing an operation test demonstrating proficiency in handling the specific type crane, including both pre-start and post-start inspection, maneuvering skills, shutdown, and securing procedures; and

(6) operators shall demonstrate understanding of the applicable sections of the B30 Standard and federal, state, and local requirements.

(c) Operators who have successfully qualified for a specific type crane shall be required to be requalified if supervision deems it necessary. Requalification shall include, but not be limited to, the following:

(1) evidence of successfully passing a current physical examination as defined in para. 5-3.1.2(a);

(2) satisfactory completion of a written examination covering operational characteristics, controls, and emergency control skills such as response to: fire, power line contact, loss of stability or control malfunctions, as well as characteristic performance stability questions appropriate to the crane type for which they are being requalified;

(3) operators shall demonstrate their ability to read, write, comprehend, and exhibit arithmetic skills and load/capacity chart usage, in the language of the crane manufacturer's operation and maintenance instruction materials;

(4) satisfactory completion of a combination written and verbal test on load/capacity chart usage that covers a selection of the configurations (the crane may be equipped to handle) for the type of crane for which the operator is being requalified;

(5) completing an operations test demonstrating proficiency in handling the specific type crane on which they are being requalified, including both pre-start and post-start inspections, maneuvering skills, shutdown, and securing procedures; and

(6) operators shall demonstrate understanding of the applicable sections of the B30 Standard and federal, state, and local safety requirements.

(d) Trainee qualification requirements shall include, but not be limited to, the following:

(1) evidence of successfully passing a physical examination as defined in para. 5-3.1.2(a);

(2) satisfactory completion of a written examination covering safety, operational characteristics and limitations, and controls of the type crane for which they are being qualified;

(3) operator trainees shall demonstrate their ability to read, write, comprehend, and exhibit arithmetic skills and load/capacity chart usage, in the language of the crane manufacturer's operations and maintenance instruction materials; and

(4) satisfactory completion of a combination written and verbal test on load/capacity chart usage covering various crane configurations.

(e) Trainee qualification, operator qualification, and operator requalification shall be performed by a designated person who, by experience and training, etc., fulfills the requirements of a qualified person.

(f) Operator physical examinations shall be required every three years as defined in para. 5-3.1.2(a), or more frequently if supervision deems it necessary.

5-3.1.3 Conduct of Operators

(a) The operator shall not engage in any practice that will divert his attention while actually engaged in operating the crane.

(b) When physically or mentally unfit, an operator shall not engage in the operation of equipment.

(c) The operator shall respond to signals from the person who is directing the lift or an appointed signal person. When a signal person or a crane follower is not required as part of the crane operation, the operator is then responsible for the lifts. However, the operator shall obey a stop signal at all times, no matter who gives it.

(d) Each operator shall be held responsible for those operations under the operator's direct control. Whenever there is any doubt as to safety, the operator shall consult with the supervisor before handling the loads.

(e) Before leaving the crane unattended, the operator shall:

(1) land any load, bucket, lifting magnet, or other device;

(2) disengage the master clutch;

(3) set travel, swing, boom brakes, and other locking devices;

(4) put controls in the off or neutral position;

(5) secure the crane against accidental travel; and

(6) stop the engine.

(7) An exception to (6) above may exist when crane operation is frequently interrupted during a shift and the operator must leave the crane. Under these circumstances, the engine may remain running and the following conditions [including those in paras. (e)(1) through (e)(5) above] shall apply:

(a) the operator shall be situated where unauthorized entry of the crane can be observed; and

(9) Provide a description and examples of the typical work settings of practitioners of this occupation or profession.

Oil Refineries, Construction Sites, Highway Projects, Chemical Plants, Nuclear Plants, Building Office Towers, Water & Sewage Plants, Pipeline Projects, Airport Construction. Cranes are used in almost every industry.

(10) Describe the public's need for the services of the practitioners of this occupation or profession or for the expanded scope of practice of practitioners of this occupation of profession.

Cranes are used to hoist material in most industries in our Commonwealth.

(11) Does the legislation propose to license, certify, register or otherwise regulate this occupation or profession?

This legislation proposes to license.

(12)Would persons who are not so licensed, certified, registered or otherwise regulated be prohibited from performing the functions which practitioners of this occupation or profession would be permitted to perform or from holding themselves out to the public in the manner in which practitioners of this occupation or profession so licensed, certified, registered or otherwise regulated would be permitted to hold themselves out.

Yes, they would be prohibited.

(13) Describe the impact of the legislation on the supply of practitioners of this occupation or profession, including the degree to which existing practitioners would be precluded from practice.

It should not preclude any practitioners. A minimal impact because some employers have been preparing their employees for over five years without legislation. A well thought out phase in period should be used.

(14) Explain the effect of the legislation on the cost of the goods or services provided by practitioners of this occupation or profession.

The cost will be minimal if any.

(15) Identify the physical, emotional or financial harm to clients because of inappropriate, erroneous or incompetent service by practitioners of this occupation or profession.

Catastrophic physical damage could be a result from improperly trained employees. Examples are overloading the crane to structural failure and material improperly attached to the cranes load hook. These examples can lead to death for workers and the public. Clients are responsible for their employees qualifications and under these circumstances they employer could absorb financial responsibility.

(16) Would/do clients have direct access to practitioners of this occupation or profession.

Employers in this industry have crane operators as employees.

(17) Would the proposed legislation have the effect of making practitioners of this occupation or profession eligible for third party insurance payments or government grants for which they are currently ineligible?

Not to our knowledge.

(18) Fully identify the minimum education, expertise and examination requirements proposed in the legislation, including a comparison of those minimum requirements to the minimum requirements in other states, the adequacy of those minimum requirements and the rationale for any exemptions or waivers from those minimum requirements.

See Attachment #5

Attachment # 5

Certification Policies

ELIGIBILITY

Requirements for certification include the following:

- Be at least 18 years of age
- Meet Medical Requirements
- Comply with CCO's Substance Abuse Policy
- Pass Written Examinations (Core and one Specialty)
- Pass Practical Examination(s)

Candidates must pass the Practical exam within twelve months of passing the written examination.

PHYSICAL EVALUATION

Candidates must submit one of the following:

- CCO Physical Examination Form
- A current DOT (Department of Transportation) Medical Examiner's Certificate

Certified crane operators must continue to meet ASME B30.5 physical requirements throughout their certification period. The CCO certification card is valid only with a current medical certificate that meets the requirements of ASME B30.5.

CCO WRITTEN EXAMINATIONS

The written examination program consists of a Core examination in crane operation, as well as four crane Specialty examinations. The Core examination has 90 multiple-choice questions. Candidates are allowed 90 minutes to complete the Core examination.

All Specialty examinations consist of 26 multiple-choice questions. Candidates are allowed 55 minutes to complete each Specialty examination.

All candidates are required to take the Core examination regardless of the Specialty(s) in which they wish to be certified.

CCO Specialty Examinations:

- Lattice Boom Crawler Cranes
- Lattice Boom Truck Cranes
- Large Telescopic Boom Cranes (greater than 17.5 Tons)
- Small Telescopic Boom Cranes (less than 17.5 Tons)

Candidates must register for the Core and at least one of the Specialty examinations. Certification requires competency in both the Core and one or more Specialty categories. Candidates meeting the eligibility requirements and passing the written examination are eligible to take the Practical Examination.

CCO PRACTICAL EXAMINATIONS

The CCO Practical Examination demonstrating crane operation proficiency is available in three (3) crane types:

- Lattice Boom Cranes
- Large Telescopic Boom Cranes (greater than 17.5 Tons)
- Small Telescopic Boom Cranes (less than 17.5 Tons)

A candidate must pass both the written Core and at least one Specialty examination as well as the corresponding Practical Exam in order to be certified for a 5 year period.

CCO CERTIFICATION TIMEFRAMES

- Candidates have 12 months from the time they pass the first written test (Core or Specialty) in which to pass the next written examination (Core or Specialty).
- Candidates have 12 months from the time they pass both the Core and Specialty in which to pass the Practical exam.
- Candidates who subsequently pass any additional Specialty written exams have 12 months in which to pass the corresponding Practical exam.
- If a certified candidate subsequently becomes certified in additional Specialties, the five-year certification period for the additional Specialties begins at the same time as he/she was originally certified, i.e. all Specialties expire on the same date regardless of when in the five-year certification period the candidate passed them.
- Candidates who passed both the Core and a Specialty written exam(s) in 1999 had a three-year certification. If they passed the Practical Exam in one or more Specialties before December 31, 2000, the 3-year certification was extended to a 5-year certification in all specialties.

STANDARDS PRESENTATION
TO
CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4

Amend Section 5006 to read as follows:

§ 5006. Crane and Hoisting Equipment Operators–Qualifications.

(a) Only employees authorized by the employer and trained~~, or known to be qualified,~~ in the safe operation of cranes or hoisting apparatus shall be permitted to operate such equipment.

(b) Trainees may be authorized to operate cranes or hoisting apparatus provided they are under the supervision of a qualified operator.

EXCEPTION: Mobile and tower cranes regulated by Section 5006.1.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4

Amend Article 98 of the General Industry Safety Orders to add a new Section 5006.1 to read as follows:

§ 5006.1. Mobile Crane and Tower Crane--Operator Qualifications and Certification.

(a) Qualifications. The employer shall only permit operators who have a valid certificate of competency (certificate) issued in accordance with this section by an Accredited Certifying Entity for the type of crane to be used to operate a crane covered by this section. Certificates shall be issued to operators who:

(1) Pass a physical examination conducted by a physician which at a minimum shall include the examination criteria specified in the American Society of Mechanical Engineers (ASME) B30.5-2000 standard, Chapter 5-3.1.2(a)(1-5, 7, 8) or the U.S. Department of Transportation (US DOT) physical examination requirements contained in 49 CFR Sections 391.41 through 391.49.

(2) Pass a substance abuse test. The level of testing shall be consistent with the standard practice for the industry where the crane is in use and this test shall be conducted by a recognized laboratory service;

(3) Pass a written examination developed, validated, and administered in accordance with the Standards for Educational and Psychological Testing (Copyright 1999) published jointly by the Joint Committee of the American Educational Research Association, the American Psychological Association, and the National Council in Measurement in Education. The exam shall test knowledge and skills identified as necessary for safe crane operations and shall, at a minimum, include the following:

(A) operational characteristics and controls, including characteristic and performance questions appropriate to the crane type for which qualification is sought;

(B) emergency control skills, such as a response to fire, power line contact, loss of stability, or control malfunction;

(C) a demonstration of basic arithmetic skills necessary for crane operation and the ability to read and comprehend the crane manufacturer's operation and maintenance instruction materials, including load capacity information (load charts) for the crane for which certification is sought;

(D) knowledge of chapters 5-0 through 5-3 of The American Society of Mechanical Engineers (ASME) B30.5-2000 and B30.5a-2002 Addenda to the standard for mobile and locomotive cranes or chapters 4-0 through 4-3 of the ASME B30.4-1996 standard for portal, tower, and pedestal cranes or Chapter 3-3 of the ASME B 30.3-1996 standard for Construction Tower Cranes, depending on the type of crane(s) the operator intends to operate.

(4) Pass a "hands-on" examination to demonstrate proficiency in operating the specific type of crane, which at a minimum shall include pre-start and post-start inspection, maneuvering skills, shutdown, and securing procedures.

PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4

(b) Certification. Certificates shall be valid for a maximum of five (5) years. An Accredited Certifying Entity shall issue the certificate of competency to operators who successfully demonstrate the qualifications set forth in (a)(1)-(4) of this section.

(c) Accredited Certifying Entity. A certifying entity is any organization whose certification program is accredited by the National Commission for Certifying Agencies (NCCA).

(d) Re-certification. Crane operators shall re-certify every five (5) years and shall be required to meet all of the qualifications set forth in subsection (a). Operators with at least one-thousand (1,000) hours of documented experience operating the specific type of crane for which re-certification is sought as covered by this section during the immediately preceding certification period and who meet the physical examination, substance abuse, and written examination requirements set forth in subsections (a)(1), (a)(2) and (a)(3) of this section shall not be required to take the "hands-on" examination specified in subsection (a)(4) to re-certify.

(e) Trainees may be authorized to operate mobile or tower cranes provided they are under the direct supervision of an operator possessing a valid certificate of competency for the type of crane operated by the trainee.

The term direct supervision means the supervising operator is in the immediate area of the trainee and within visual sighting distance and able to effectively communicate with the trainee. When performing direct supervision, the supervising operator shall have no other duties other than to observe the operation of the crane by the trainee.

(f) Effective Date. The requirements of Section 5006.1 shall become effective on June 1, 2005.

EXCEPTIONS TO SECTION 5006.1:

(1) Mobile cranes having a boom length of less than 25 feet or a maximum rated load capacity of less than 15,000 pounds.

(2) Operators of electric line trucks as defined in Section 2700 of the Electrical Safety Orders, and regulated by Section 2940.7 of the High Voltage Electrical Safety Orders.

(3) Marine terminal operations regulated by Article 14 of these Orders.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

IMPORTANT NOTICE

New Crane Licensing Requirements to Take Effect in New Jersey on April 1, 2004

Starting April 1, 2004 the licensing of certain crane operators will be in effect. The law establishes a seven-member "Crane Operators License Advisory Board" under the jurisdiction of the Department of Labor. The board consists of seven members who are residents of the State and shall include the Commissioner of Labor or his designee, serving ex-officio, as chairperson representing the Department of Labor, one heavy highway, utility or transportation construction contractor representative, one building contractor representative, and four licensed crane operators who have been actively engaged in crane operations in this State for at least five years immediately preceding their appointment. The board shall establish standards for practice, certification qualifications and education programs.

The following requirements must be met to be eligible for a license:

1. The person must be at least 18 years of age
2. Have at least 1,000 hours of crane-related experience.
3. Maintain a current medical examiner's certification card.
4. Received certification from the National Commission for the Certification of Crane Operators or any other organization found by the board to offer an equivalent testing and certification program meeting the requirements of the American Society of Mechanical Engineers ASME B30.5 and the accreditation requirements of the National Commission for Certifying Agencies.

A crane operator's license shall be valid only in conjunction with a current certification and only in the specialty or specialties for which the crane operator is certified. The specialties are lattice boom crawler crane, lattice boom truck crane, telescopic boom cranes with a capacity of more than 17.5 tons and telescopic boom cranes with a capacity of less than 17.5 tons.

The license provided under the law applies to persons operating cranes that are power-operated hoisting machines used in construction, demolition or

excavation work that have a power-operated winch, load line, and boom moving laterally by the rotation of the machine on a carrier and have a manufacturer-rated capacity of ten tons or more. The license does not apply to the operation of forklifts, digger derrick trucks, aircraft, bucket trucks, knuckle booms, trolley booms or any vehicles or machines not having a power-operated winch and load line.

Licenses are issued for five years and may be renewed when the applicant provides proof of re-certification. The law stipulates that no person shall engage in the operation of a crane, offer himself for employment as a crane operator or otherwise act, attempt to act, present or represent himself as a crane operator unless licensed. Crane operators holding long boom licenses issued by the State are not required to become licensed under this law until their current license expires. All other operators will need to be licensed by April 1, 2004.

For additional information or questions regarding this new law, please contact the Association Headquarters at 609-393-3353.

On September 4th 2003 Governor McGreevey signed the Licensing of Crane Operators Act, N.J.S.A. 45:26-1 et seq., into law. The Licensing of Crane Operators Act (see enclosed copy) requires that anyone who operates a crane in New Jersey as defined in the law must be licensed by the New Jersey Department of Labor. This law will take effect and be enforced on April 1st 2004.

In accordance with the provisions of this law any person who has to be licensed to operate a crane must:

1. Apply to the Department of Labor and be issued a Crane Operators License by the Office of Safety Compliance (see application copy enclosed). A crane operator must be certified in one of the following four specialties:...

a) Lattice Boom Truck Crane
b) Lattice Boom Crawler Crane
c) Small Telescopic Boom Crane (less than 17.5 tons)
d) Large Telescopic Boom Crane (more than 17.5 tons)

The Act does not apply to cranes with manufacturers' rated lifting capacity of less than 10 tons. Also not covered are Forklifts, Digger Derrick Trucks, Aircraft Bucket Trucks, Knuckle Booms, Trolley Booms or any vehicles or machines not having a power operated winch or load line.

2. Submit a check or money order for the appropriate fee made payable to the Commissioner of Labor for a Crane Operators License, which will be valid for up to a five-year period.

3. Be certified by the National Commission for the Certification of Crane Operators, or any other crane operator certification program found by the Crane Operators Advisory Board to offer an equivalent testing and certification program which meets the requirements of the American Society of Mechanical Engineers B30.5 and the accreditation requirements of the National Commission of Certifying Agencies.

4. Have a current medical certificate that meets the requirements of American Society of Mechanical Engineers B30.5-3.1.2 (a) (see excerpt enclosed).

Note: All three of these documents must be carried by the licensed crane operator whenever performing crane operation and be made available for review by a State Safety Inspector upon request. Anyone who is found not to be in possession of the proper credentials as described above will not be allowed to operate a crane.

The State Crane Operator's License will be valid for a five-year period with the exception that anyone currently holding a Long Boom Crane Operators License will not be required to apply for a Crane Operators License until their Long Boom Crane Operators License expires.

Also, in order to stagger the expiration dates of the Crane Operators Licenses so that the influx of permit applications does not occur all at once, the Commissioner, in consultation with the interested parties, has mandated all Crane Operator's Licenses that are issued or renewed after April 1st 2004 shall become void on the expiration date of the National Certification. (See item 3 above.)

The fees for a Crane Operator License have been established as follows:

Annual Fee	$ 50.00
Five-Year Fee	$250.00

If a person currently has the National Commission for the Certification of Crane Operators (NCCCO) certification, they must submit a payment of fifty dollars a year, on a year for year basis, for each year or portion of a year remaining on the NCCCO Certification card.

Please contact the New Jersey Department of Labor, Office of Safety Compliance, for assistance in calculating the fee as well as for all other questions.

New Jersey Department of Labor
Office of Safety Compliance
1 John Fitch Plaza
Trenton, NJ 08625
Phone: 609-292-2096 777-0217
Fax: 609-777-4589

If you have any questions regarding the NCCCO certification program please write or call:

National Commission for the
Certification of Crane Operators
2750 Prosperity Avenue
Suite 505
Fairfax, VA 22031-4312
Phone: 703-560-2391
Fax: 703-560-2392
E-Mail: info@nccco.org

International Assessment Institute
Attention: CCO Testing
600 Cleveland Street
Suite 900
Clearwater, Florida 33755
Phone: 727-449-8525
Fax: 727-461-2740

Note: The International Assessment Institute assists the NCCCO with the development and administration of its written and practical exams.

42CSR24
Title 42
Legislative Rule
West Virginia Division of Labor
Series 25

Crane Operator Certification Act
Practical Examination

al.

is legislative rule governs the practical examination of crane operators
ance with W.Va. Code §21-3D-1 et seq, and W.Va. Code §29A-3-1 et

W.Va. Code §21-3D-3(1).

e. April 26, 2001

Date. May 1, 2001

cation and Enforcement.

n. This legislative rule applies to the West Virginia Division of Labor
sons, materials and transactions governed or otherwise defined under
f the Crane Operator Certification Act, W.Va. Code §21-3D-1 et seq. as
the practical examination of crane operators.

ent. The enforcement of this legislative rule is vested with the West
ivision of Labor.

tions.

A certification" means a certification issued to a person who has
national level certification criteria as required by the National
ssion for the Certification of Crane Operators (NCCCO).

classification system of certification and implement this dual system of certification no later than the first day of January, two thousand one.

(g) Provide the option for applicants and crane operators to take examinations that meet or exceed requirements for national crane operator certification.

(h) Take other action as necessary to enforce this article.

§21-3D-4. Minimum certification requirements.

(a) The commissioner shall certify an applicant who:

(1) Is at least eighteen years of age;

(2) Meets the application requirements as prescribed by rule;

(3) Passes the written examination: Provided, That any person who documents at least two thousand hours of on-the-job experience operating a crane during the four years immediately preceding filing for application, or successfully completes a training course approved by the commissioner, and applies for certification no later than the first day of September, two thousand one, and meets all other requirements and pays all applicable fees, is entitled to certification without a written examination;

(4) Passes the practical demonstration: Provided, That the practical demonstration approved by the commissioner may be administered on-site by a qualified company representative: Provided, however, That any person who documents at least two thousand hours of on-the-job experience operating a crane during the preceding four years next prior to filing for application or the successful completion of a training course approved by the commissioner is entitled to certification without a practical demonstration under this article if the person applies for certification no later than the first day of September, two thousand one, meets all other requirements and pays applicable application and examination fees;

(5) Presents the original, or a photographic copy, of a physician's certificate that he or she is physically qualified to drive a commercial motor vehicle as required by 49 C.F.R. §391.41 as of the effective date of this article, or an equivalent physician's certificate as approved by the commissioner; and,

(6) Pays the application, training or examination fees as is appropriate.

(b) Certification issued under this article is valid throughout the state and is not assignable or transferable, and is valid for one year from the date on which it was issued.

(c) Not withstanding any other provision of this section, the division of labor may issue a temporary certification, to expire on the first day of January, two thousand one, to an applicant who: (1) Documents at least two thousand hours of on-the-job experience during the preceding four years; (2) submits scores for the written examination; and (3) provides proof of attendance at an approved crane safety training course, in an application for certification filed not later than the first day of July, two thousand.

(d) Notwithstanding any other provision of this article to the contrary, the commissioner shall establish a dual classification system of certification no later than the first day of January, two thousand one. One classification will provide eligibility for national certification, and the applicant must achieve a passing score of seventy on the national commission for the certification of crane operators written examination. To be classified for the West Virginia certification, the commissioner may accept a lesser score on the national commission for the certification of crane operators written examination: Provided, That this score may not be less than sixty for state certification: Provided, however, That the successful completion of a training course approved by the commissioner may be substituted for the written examination and for the practical demonstration if the applicant applies for certification no later than the first day of September, two thousand one. The commissioner shall propose a legislative rule as to the dual classification system no later than the first day of July, two thousand.

§21-3D-5. Denial, suspension, revocation, or reinstatement of certification.

(a) The commissioner may deny, suspend, revoke or reinstate certification.

(b) A violation of this article or rule adopted pursuant to this article is grounds for the denial, suspension, revocation or refusal to reinstate certification and permits the imposition of disciplinary action: *Provided,* That no disciplinary action against a crane operator may be imposed without a proper prior notice served under section one, article two, chapter fifty-six of this code, and an opportunity for hearing held before the commissioner or his designee wherein the crane operator will be provided the opportunity to present evidence in person, by counsel or both and after which, if the commissioner finds a violation of this article has occurred, the commissioner may impose any disciplinary action permitted in this article: Provided, however, That the provisions of subsection (e) of section seven of this article have not been met.

(c) Operation of a crane in violation of this article or other provisions of this code may result in the suspension of certification for not less that twenty-four hours nor more than one year, or revocation of certification until reinstated.

(d) Each certified crane operator shall carry proof of certification on his or her person during operation of a crane.

STATE OF NEW YORK

DEPARTMENT OF LABOR

MOBILE CRANES, TOWER CRANES AND DERRICKS

Extracts From Industrial Code Rule 23

Protection in

Construction, Demolition and Excavation Operations

As Amended

Effective April 17, 1991

operated hoisting machine utilizing hoisting rope and a power-operated boom which moves laterally by rotation of the machine on the carrier.

(c) *Certificate of competence required.* No person, whether the owner or otherwise, shall operate a crane in the State of New York unless such person is a certified crane operator by reason of the fact that:

(1) he holds a valid certificate of competence issued by the commissioner to operate a crane; or

(2) he is at least 21 years of age and holds a valid license issued by the Federal government, a State government or by any political subdivision of this or any other State and such license has been accepted in writing by the commissioner as equivalent to a certificate of competence issued by him; or

(3) he is a person who:

(i) is at least 21 years of age and is employed by the Federal government, the State or a political subdivision, agency or authority of the State and is operating a crane owned or leased by the Federal government, the State or such political subdivision, agency or authority and his assigned duties include operation of a crane;

(ii) is at least 21 years of age and is employed only to test or repair a crane and is operating it for such purpose while under the direct supervision of a certified crane operator; or under the direct supervision of a person employed by the Federal government, the State or a political subdivision, agency or authority of the State and his assigned duties include the operation of a crane;

(iii) an apprentice or learner who is at least 18 years of age and who has the permission of the owner or lessee of a crane to take instruction in its operation and is operating such crane under the direct supervision of a certified crane operator or under the direct supervision of a person employed by the Federal government, the State or a political subdivision, agency or authority of the State and whose assigned duties include the operation of a crane.

(d) *Application forms and photographs.* An application for a certificate of competence or for a renewal thereof shall be made on forms provided by the commissioner. Upon notice from the commissioner to an applicant that a certificate of competence or a renewal thereof will be issued to him, the applicant must forward photographs of himself in such numbers and sizes as the commissioner shall prescribe, and such photographs must have been taken within 30 days of the request for such photographs.

(e) *Physical conditions.* No person suffering from a physical handicap or illness, such as epilepsy, heart disease, or an uncorrected defect in vision or hearing, that might diminish his competence, shall be certified by the commissioner.

(f) *Experience required.* An applicant for a certificate of competence must be at least 21 years of age and must have had practical experience in the operation of cranes for at least three years and, in addition, have a practical knowledge of crane maintenance.

(g) *Examining board.* The commissioner may appoint an examining board which shall consist of at least three members, at least one of whom shall be a crane operator who holds a valid certificate of competence issued by the commissioner, and at least one of whom shall be a representative of crane owners. The members of the examining board shall serve at the pleasure of the commissioner and their duties will include:

(1) The examination of applicants and their qualifications, and the making of recommendations to the commissioner with respect to the experience and competence of the applicants.

(2) The holding of hearings regarding appeals following denials of certificates.

(3) The holding of hearings prior to determinations of the commissioner to suspend or revoke certificates, or to refuse to issue renewals of certificates.

(4) The reporting of findings and recommendations to the commissioner with respect to such hearings.

(5) The acts and proceedings of the examining board shall be in accordance with regulations issued by the commissioner.

(h) *General examination.* Each applicant for a certificate of competence will, and each applicant for a renewal thereof may, be required by the commissioner to take an appropriate general examination.

(i) *Operating examination.* An applicant who passes the general examination will also be required to take a practical examination in crane operation; except that the commissioner may waive this requirement with respect to an applicant for a renewal of a certificate of competence.

(j) *Contents of certificate.* Each certificate of competence issued shall include the name and address of the certified crane operator, a brief description of him for the purpose of identification and his photograph.

(k) *Term of certificate.* Each certificate of competence or renewal thereof shall be valid for three years from the date issued, unless its term is extended by the commissioner or unless it is sooner suspended or revoked. The commissioner may extend the term of any certificate of competence as he may find necessary to relieve a certified operator of unnecessary hardship.

(l) *Carrying certificate.* Each certified crane operator shall carry his certificate on his person when operating any crane and failure to produce the certificate upon request by the commissioner shall be presumptive evidence that the operator is not certified.

Attachment # 6

(19) Identify the institutions offering accredited and non-accredited programs to prepare practitioners to enter this occupation or profession or to exercise the functions, which would be authorized by the expanded scope of practice.

See attachment #6

(20) Explain the requirements for renewal of a license, certificate, registration or other form of regulation, including continuing education.

See attachment #7

(21) Describe the extent to which a private organization provides credentials to, sets standards for, or imposes sanctions on practitioners of this occupation or profession.

See attachment #8

(22) Explain the extent to which amendments to, or stronger enforcement of, existing statutes might serve as an alternative to the legislation.

We do not know of any existing statutes in the State of Pennsylvania

(23) If the legislation would create a new board or commission, explain the extent to which this occupation or profession could be regulated by an existing board or commission.

If you are unable to creat a new board, it is possible it could fit into an existing board. We would have to research which one would fit best. One thing to be aware of is an existing board will not have any Subject Matter Experts. A sub-committee of Subject Matter Experts could be created to advise this board.

Attachment #6

The National Commission for the Certification of Crane Operators (NCCCO) was formed in January 1995 to develop effective performance standards for safe crane operation to assist all segments of general industry and construction. While it is currently the only organization providing an accredited testing program in this occupation, NCCCO works with dozens of firms and institutions that provide training to candidates prior to taking the certification examinations.

Attachment # 7

Attachment #7

NCCO Certification is valid for five (5) years. Candidates must complete all of their re-certification requirements during the 12 months prior to their expiration date. This includes passing the Written Recertification Examinations; passing the Practical Examination(s) if they have not already done so; continuing to meet Medical Requirements; and compliance with NCCO substance abuse policy. Candidates who have already taken and passed the Practical Examination(s) and who can document at least 1,000 crane-related experience during their period of certification do not need to take the practical exam to recertify. However, candidates who do need to take the Practical Exam(s) for any reason must do so before their certification expires. There is no "grace period" after the date of expiration. Candidates whose certification has lapsed must take the full written and practical examinations over again in order to be recertified. All candidates are required to take the Core Examination regardless of the Specialty(s) in which they wish to be recertified. Recertification candidates are allowed two (2) attempts to pass the recertification Core and Specialty exams before their certification expires. Candidates who are unsuccessful after two (2) attempts must take and pass the regular Core and Specialty exams. Certified candidates may take their written recertification examinations up to one (1) year prior to their date of expiration. Regardless of the date of the recertification examination within that one-year period, the new five-year certification period begins from the date of expiration of the candidate's initial certification.

Attachment # 8

Attachment #8

Since the National Commission for the Certification of Crane Operators (NCCCO) began testing in April 1996, more than 25,000 crane operators have been tested through over 100,000 written and practical examinations at more than 1,300 separate test administrations conducted in 48 states. NCCCO has supplemented American National Standards and Federal PSHA regulations with input from hundreds of subject matter experts to create a comprehensive body of knowledge which has been validated through peer review and industry surveys. Expert psychometricians have provided guidance on written and practical examination development, and the whole process accredited by the National Commission for Certifying Agencies (NCCA). NCCCO's Review Committee has established standards of conduct, such as ethical standards, policies and procedures for disciplinary action, and grounds for revocation of certification status. Candidates who wish to appeal a decision regarding revocation of their status may do so in writing the Appeals Committee.

(24) Provide the estimated biennial fiscal impact of the legislation.

The impact will be minimal. The license application fee and any fines should cover administrative costs. The board that would cover legislation should be self sufficient.

(25) Establish why no alternatives to regulation will adequately protect the public.

Attachment #9

(a) Identify any other states in which the subject occupation or profession is regulated and the manner in which the regulation has resulted in grater protection of the public health, safety or general well being.

(b) As an Appendix to this report, provide copies of the regulations from those other states.

Attachment #10

Attachment # 9

Attachment #9

Currently 12 states and 6 cities require licensing of crane operators. [Information from MA, NY or WV?] Either because the state regulation has provided for "grandfathering" of operators, or sufficient time has not elapsed to verify its effectiveness in preventing crane accidents, little statistical evidence in available from the US. However, in Ontario, where mandatory training and licensing was introduced in 1979, the impact of this requirement has been dramatic: an 80% reduction in the death rate associated with cranes, and a 50% reduction in crane and rigging deaths as a percentage of all construction accidents, even after adjustment for labor volume. Testimony from insurance firms also underlines the safety and economic benefits that accrue from the professional regulation of this activity.

Attachment # 10

[First Reprint]

SENATE, No. 581

STATE OF NEW JERSEY

210th LEGISLATURE

PRE-FILED FOR INTRODUCTION IN THE 2002 SESSION

Sponsored by:
Senator RICHARD J. CODEY
District 27 (Essex)
Senator JOSEPH M. KYRILLOS, JR.
District 13 (Middlesex and Monmouth)
Assemblywoman ELBA PEREZ-CINCIARELLI
District 31 (Hudson)
Assemblyman JOSEPH V. DORIA, JR.
District 31 (Hudson)

Co-Sponsored by:
Senator Furnari and Assemblywoman Heck

SYNOPSIS
Provides for the licensure of certain crane operators.

CURRENT VERSION OF TEXT
As reported by the Senate Commerce Committee on May 15, 2003, with amendments.

(Sponsorship Updated As Of: 6/24/2003)

f. Successfully complete both a written examination and an examination demonstrating the applicant's ability to safely operate a crane] d. Maintain a current medical examiner's certification card[1].

[1][9. A person certified under the provisions of section 8 of this act may apply for endorsements to that certification. Those endorsements shall include, but not be limited to, the operation of the following categories and types of cranes:

a. lattice boom truck cranes;

b. lattice boom crawler cranes;

c. telescopic boom cranes having a capacity of less than 17.5 tons; and

d. telescopic boom cranes having a capacity of more than 17.5 tons.

An endorsement shall be awarded whenever an applicant successfully completes the prescribed written examination and examination demonstrating an ability to safely operate a particular category or type of crane.][1]

[1][10.] 9.[1] Upon payment to the [1][board] commissioner[1] of a fee and the submission of a [1]completed[1] written application provided by the [1][board] commissioner[1], the [1][committee] commissioner[1] shall issue a crane operator [1][certification] license[1] to any person who [1][has a certification from or holds a valid license issued by another state or possession of the United States or the District of Columbia which has standards substantially equivalent to those of this State, as determined by the committee] meets the eligibility requirements of section 8 of this act[1].

[1][11.] 10.[1] a. The [1][board] commissioner[1] shall by rule or regulation establish, prescribe or change the fees for [1][certifications] licenses[1], renewals of [1][certifications] licenses [1]or other services provided by the [1]commissioner or the[1] board [1][or the committee][1] pursuant to the provisions of this act. [1][Certifications] Licenses[1] shall be issued for a period of [1][two] five[1] years and [1]may [1]be [1][biennially renewable] renewed when the applicant provides proof of re-certification[1], except that the board may, in order to stagger the expiration dates thereof, provide that those licenses first issued or renewed after the effective date of this act shall expire or become void on [1][a date fixed by the board, not sooner than six months nor later than 29 months after the date of issue] the expiration date of the certification[1].

b. Fees shall be established, prescribed or changed by the [1][committee] commissioner, in consultation with the board,[1] to the extent necessary to defray all proper expenses incurred by the board

(f) Effective Date. The requirements of Section 5006.1 shall become effective on June 1, 2005.

EXCEPTIONS TO SECTION 5006.1:

(1) Mobile cranes having a boom length of less than 25 feet or a maximum rated load capacity of less than 15,000 pounds.

(2) Operators of electric line trucks as defined in Section 2700 of the Electrical Safety Orders, and regulated by Section 2940.7 of the High Voltage Electrical Safety Orders.

(3) Marine terminal operations regulated by Article 14 of these Orders.

NOTE

Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

HISTORY

1. New section filed 7-3-2003; operative 8-2-2003 (Register 2003, No. 27).

Subchapter 7. General Industry Safety Orders
Group 13. Cranes and Other Hoisting Equipment
Article 98. Operating Rules

§5006.1. Mobile Crane and Tower Crane-Operator Qualifications and Certification.

(a) Qualifications. The employer shall only permit operators who have a valid certificate of competency (certificate) issued in accordance with this section by an Accredited Certifying Entity for the type of crane to be used to operate a crane covered by this section. Certificates shall be issued to operators who:

(1) Pass a physical examination conducted by a physician which at a minimum shall include the examination criteria specified in the American Society of Mechanical Engineers (ASME) B30.5-2000 standard, Chapter 5-3.1.2(a)(1-5, 7, 8) or the U.S. Department of Transportation (US DOT) physical examination requirements contained in 49 CFR Sections 391.41 through 391.49.

(2) Pass a substance abuse test. The level of testing shall be consistent with the standard practice for the industry where the crane is in use and this test shall be conducted by a recognized laboratory service;

(3) Pass a written examination developed, validated, and administered in accordance with the Standards for Educational and Psychological Testing (Copyright 1999) published jointly by the Joint Committee of the American Educational Research Association, the American Psychological Association, and the National Council in Measurement in Education. The exam shall test knowledge and skills identified as necessary for safe crane operations and shall, at a minimum, include the following:

(A) operational characteristics and controls, including characteristic and performance questions appropriate to the crane type for which qualification is sought;

(B) emergency control skills, such as a response to fire, power line contact, loss of stability, or control malfunction;

(C) a demonstration of basic arithmetic skills necessary for crane operation and the ability to read and comprehend the crane manufacturer's operation and maintenance instruction materials, including load capacity information (load charts) for the crane for which certification is sought;

(D) knowledge of chapters 5-0 through 5-3 of The American Society of Mechanical Engineers (ASME) B30.5-2000 and B30.5a-2002 Addenda to the standard for mobile and locomotive cranes or chapters 4-0 through 4-3 of the ASME B30.4-1996 standard for portal, tower, and pedestal cranes or Chapter 3-3 of the ASME B 30.3-1996 standard for Construction Tower Cranes, depending on the type of crane(s) the operator intends to operate.

(4) Pass a "hands-on" examination to demonstrate proficiency in operating the specific type of crane, which at a minimum shall include pre-start and post-start inspection, maneuvering skills, shutdown, and securing procedures.

(b) Certification. Certificates shall be valid for a maximum of five (5) years. An Accredited Certifying Entity shall issue the certificate of competency to operators who successfully demonstrate the qualifications set forth in (a)(1)-(4) of this section.

(c) Accredited Certifying Entity. A certifying entity is any organization whose certification program is accredited by the National Commission for Certifying Agencies (NCCA).

(d) Re-certification. Crane operators shall re-certify every five (5) years and shall be required to meet all of the qualifications set forth in subsection (a). Operators with at least one-thousand (1,000) hours of documented experience operating the specific type of crane for which re-certification is sought as covered by this section during the immediately preceding certification period and who meet the physical examination, substance abuse, and written examination requirements set forth in subsections (a)(1), (a)(2) and (a)(3) of this section shall not be required to take the "hands-on" examination specified in subsection (a)(4) to re-certify.

(e) Trainees may be authorized to operate mobile or tower cranes provided they are under the direct supervision of an operator possessing a valid certificate of competency for the type of crane operated by the trainee.

The term direct supervision means the supervising operator is in the immediate area of the trainee and within visual sighting distance and able to effectively communicate with the trainee. When performing direct supervision, the supervising operator shall have no other duties other than to observe the operation of the crane by the trainee.

apply for an injunction in the Superior Court of New Jersey. Nothing in this act shall be deemed to prevent the commissioner from prosecuting any violation of this act, notwithstanding that the violations are corrected in accordance with his order.[1]

[1]14. It shall be unlawful for any person, partnership, firm association or corporation, and any officer, agent or employee thereof, to violate or proximately contribute to the violation of any of the provisions of this act or of the regulations promulgated pursuant to this act. Any violation of this act by an employee, acting within the scope of his authority, of any person, partnership, firm, association, or corporation shall be deemed also to be the violation of such person, partnership, firm, association or corporation. Violations of the provisions of this act or rules and regulations promulgated pursuant to this act shall be punishable for the first offense by a penalty of not less than $100 nor more than $10,000 and for a second or subsequent offense by a penalty of not less than $500 nor more than $100,000. The penalties shall be collected in accordance with "The Penalty Enforcement Law of 1999," P.L. 1999, c. 274 (C. 2A:58-10 et seq.). If the violation consists of refusal to obey an order of the commissioner made under this act, each day during which the violation continues shall constitute a separate and distinct offense except during the time an appeal from that order may be taken or pending.[1]

[1]15. The commissioner, in his discretion, is authorized and empowered to compromise and settle any claim for a penalty under this act for an amount that appears appropriate and equitable under all of the circumstances.[1]

[1]16. Crane operators, holding long boom licenses issued by the State as of the effective date of this act, shall not be required to be licensed pursuant to the provisions of this act until the expiration of their long boom licenses issued by this State.[1]

[1][14.] 17.[1] The [1][board] commissioner[1], after consultation with the [1][committee] board[1], shall adopt rules and regulations pursuant to the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.) necessary to effectuate the purposes of this act.

[1][15.] 18.[1] This act shall take effect on the first day of the seventh month following enactment.

in the]¹ Department of ¹[Law and Public Safety, under the State Board of Professional Engineers and Land Surveyors] Labor¹, a Crane Operators ¹[Certification] License¹ Advisory ¹[Committee] Board¹. The ¹[committee] board¹ shall consist of ¹[five] seven¹ members who are residents of the State ¹, consisting of the commissioner or his designee, as the chairperson, serving ex-officio and representing the Department of Labor, a heavy highway, utility or transportation construction contractor representative, a building contractor representative¹ and ¹[are certified] four licensed¹ crane operators who have been actively engaged ¹[as] in¹ crane ¹[operators] related operations¹ in this State for at least five years immediately preceding their appointment.

b. For a period of one year after the effective date of this act, and notwithstanding any other provisions of this act to the contrary, the first ¹[five] four¹ crane operators appointed as members of the ¹[committee] board¹ shall not be required, at the time of their first appointment, to be ¹[certified] licensed¹ under the provisions of this act as crane operators.

c. The Governor shall appoint each ¹[committee] board¹ member for a term of three years, except that of the members first appointed, two shall serve for terms of three years, two shall serve for terms of two years and ¹[one] two¹ shall serve for ¹[a term] terms¹ of one year. Each member shall hold office until his successor has been qualified. Any vacancy in the membership of the ¹[committee] board¹ shall be filled for the unexpired term in the manner provided for the original appointment. No member of the ¹[committee] board¹ may serve more than two successive terms, in addition to any unexpired term to which he has been appointed.

4. Members of the ¹[committee] board¹ shall be ¹[compensated and]¹ reimbursed for expenses and provided with office and meeting facilities and personnel required for the proper conduct of the ¹[committee's] board's¹ business.

5. The ¹[committee] board¹ shall annually elect from among its members a ¹[chairman and a vice-chairman] vice-chairperson¹ and may appoint a secretary, who need not be a member of the ¹[committee] board¹. The ¹[committee] board¹ shall meet at least twice a year and may hold additional meetings as necessary to discharge its duties.

6. The ¹[committee] commissioner¹ shall have the following powers and duties:

a. Administer and enforce the provisions of this act;

b. Issue and renew ¹[certifications] licenses¹ to crane operators

Attachment # 10

[First Reprint]

SENATE, No. 581

STATE OF NEW JERSEY

210th LEGISLATURE

PRE-FILED FOR INTRODUCTION IN THE 2002 SESSION

Sponsored by:
Senator RICHARD J. CODEY
District 27 (Essex)
Senator JOSEPH M. KYRILLOS, JR.
District 13 (Middlesex and Monmouth)
Assemblywoman ELBA PEREZ-CINCIARELLI
District 31 (Hudson)
Assemblyman JOSEPH V. DORIA, JR.
District 31 (Hudson)

Co-Sponsored by:
Senator Furnari and Assemblywoman Heck

SYNOPSIS
Provides for the licensure of certain barge operators.

CURRENT VERSION OF TEXT
As reported by the Senate Commerce Committee on May 15, 2003, with amendments.

(Sponsorship Updated As Of: 6/24/2003)

f. Successfully complete both a written examination and an examination demonstrating the applicant's ability to safely operate a crane] d. Maintain a current medical examiner's certification card[1].

[1][9. A person certified under the provisions of section 8 of this act may apply for endorsements to that certification. Those endorsements shall include, but not be limited to, the operation of the following categories and types of cranes:

a. lattice boom truck cranes;

b. lattice boom crawler cranes;

c. telescopic boom cranes having a capacity of less than 17.5 tons; and

d. telescopic boom cranes having a capacity of more than 17.5 tons.

An endorsement shall be awarded whenever an applicant successfully completes the prescribed written examination and examination demonstrating an ability to safely operate a particular category or type of crane.][1]

[1][10.] 9.[1] Upon payment to the [1][board] commissioner[1] of a fee and the submission of a [1]completed[1] written application provided by the [1][board] commissioner[1], the [1][committee] commissioner[1] shall issue a crane operator [1][certification] license[1] to any person who [1][has a certification from or holds a valid license issued by another state or possession of the United States or the District of Columbia which has standards substantially equivalent to those of this State, as determined by the committee] meets the eligibility requirements of section 8 of this act[1].

[1][11.] 10.[1] a. The [1][board] commissioner[1] shall by rule or regulation establish, prescribe or change the fees for [1][certifications] licenses[1], renewals of [1][certifications] licenses or other services provided by the [1]commissioner or the[1] board [1][or the committee][1] pursuant to the provisions of this act. [1][Certifications] Licenses[1] shall be issued for a period of [1][two] five[1] years and [1]may [1]be [1][biennially renewable] renewed when the applicant provides proof of re-certification[1], except that the board may, in order to stagger the expiration dates thereof, provide that those licenses first issued or renewed after the effective date of this act shall expire or become void on [1][a date fixed by the board, not sooner than six months nor later than 29 months after the date of issue] the expiration date of the certification[1].

b. Fees shall be established, prescribed or changed by the [1][committee] commissioner, in consultation with the board,[1] to the extent necessary to defray all proper expenses incurred by the board

(f) Effective Date. The requirements of Section 5006.1 shall become effective on June 1, 2005.

EXCEPTIONS TO SECTION 5006.1:

(1) Mobile cranes having a boom length of less than 25 feet or a maximum rated load capacity of less than 15,000 pounds.

(2) Operators of electric line trucks as defined in Section 2700 of the Electrical Safety Orders, and regulated by Section 2940.7 of the High Voltage Electrical Safety Orders.

(3) Marine terminal operations regulated by Article 14 of these Orders.

NOTE

Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

HISTORY

1. New section filed 7-3-2003; operative 8-2-2003 (Register 2003, No. 27).

Subchapter 7. General Industry Safety Orders
Group 13. Cranes and Other Hoisting Equipment
Article 98. Operating Rules

§5006.1. Mobile Crane and Tower Crane-Operator Qualifications and Certification.

(a) Qualifications. The employer shall only permit operators who have a valid certificate of competency (certificate) issued in accordance with this section by an Accredited Certifying Entity for the type of crane to be used to operate a crane covered by this section. Certificates shall be issued to operators who:

(1) Pass a physical examination conducted by a physician which at a minimum shall include the examination criteria specified in the American Society of Mechanical Engineers (ASME) B30.5-2000 standard, Chapter 5-3.1.2(a)(1-5, 7, 8) or the U.S. Department of Transportation (US DOT) physical examination requirements contained in 49 CFR Sections 391.41 through 391.49.

(2) Pass a substance abuse test. The level of testing shall be consistent with the standard practice for the industry where the crane is in use and this test shall be conducted by a recognized laboratory service;

(3) Pass a written examination developed, validated, and administered in accordance with the Standards for Educational and Psychological Testing (Copyright 1999) published jointly by the Joint Committee of the American Educational Research Association, the American Psychological Association, and the National Council in Measurement in Education. The exam shall test knowledge and skills identified as necessary for safe crane operations and shall, at a minimum, include the following:

(A) operational characteristics and controls, including characteristic and performance questions appropriate to the crane type for which qualification is sought;

(B) emergency control skills, such as a response to fire, power line contact, loss of stability, or control malfunction;

(C) a demonstration of basic arithmetic skills necessary for crane operation and the ability to read and comprehend the crane manufacturer's operation and maintenance instruction materials, including load capacity information (load charts) for the crane for which certification is sought;

(D) knowledge of chapters 5-0 through 5-3 of The American Society of Mechanical Engineers (ASME) B30.5-2000 and B30.5a-2002 Addenda to the standard for mobile and locomotive cranes or chapters 4-0 through 4-3 of the ASME B30.4-1996 standard for portal, tower, and pedestal cranes or Chapter 3-3 of the ASME B 30.3-1996 standard for Construction Tower Cranes, depending on the type of crane(s) the operator intends to operate.

(4) Pass a "hands-on" examination to demonstrate proficiency in operating the specific type of crane, which at a minimum shall include pre-start and post-start inspection, maneuvering skills, shutdown, and securing procedures.

(b) Certification. Certificates shall be valid for a maximum of five (5) years. An Accredited Certifying Entity shall issue the certificate of competency to operators who successfully demonstrate the qualifications set forth in (a)(1)-(4) of this section.

(c) Accredited Certifying Entity. A certifying entity is any organization whose certification program is accredited by the National Commission for Certifying Agencies (NCCA).

(d) Re-certification. Crane operators shall re-certify every five (5) years and shall be required to meet all of the qualifications set forth in subsection (a). Operators with at least one-thousand (1,000) hours of documented experience operating the specific type of crane for which re-certification is sought as covered by this section during the immediately preceding certification period and who meet the physical examination, substance abuse, and written examination requirements set forth in subsections (a)(1), (a)(2) and (a)(3) of this section shall not be required to take the "hands-on" examination specified in subsection (a)(4) to re-certify.

(e) Trainees may be authorized to operate mobile or tower cranes provided they are under the direct supervision of an operator possessing a valid certificate of competency for the type of crane operated by the trainee.

The term direct supervision means the supervising operator is in the immediate area of the trainee and within visual sighting distance and able to effectively communicate with the trainee. When performing direct supervision, the supervising operator shall have no other duties other than to observe the operation of the crane by the trainee.

apply for an injunction in the Superior Court of New Jersey. Nothing in this act shall be deemed to prevent the commissioner from prosecuting any violation of this act, notwithstanding that the violations are corrected in accordance with his order.[1]

[1]14. It shall be unlawful for any person, partnership, firm association or corporation, and any officer, agent or employee thereof, to violate or proximately contribute to the violation of any of the provisions of this act or of the regulations promulgated pursuant to this act. Any violation of this act by an employee, acting within the scope of his authority, of any person, partnership, firm, association, or corporation shall be deemed also to be the violation of such person, partnership, firm, association or corporation. Violations of the provisions of this act or rules and regulations promulgated pursuant to this act shall be punishable for the first offense by a penalty of not less than $100 nor more than $10,000 and for a second or subsequent offense by a penalty of not less than $500 nor more than $100,000. The penalties shall be collected in accordance with "The Penalty Enforcement Law of 1999," P.L. 1999, c. 274 (C. 2A:58-10 et seq.). If the violation consists of refusal to obey an order of the commissioner made under this act, each day during which the violation continues shall constitute a separate and distinct offense except during the time an appeal from that order may be taken or pending.[1]

[1]15. The commissioner, in his discretion, is authorized and empowered to compromise and settle any claim for a penalty under this act for an amount that appears appropriate and equitable under all of the circumstances.[1]

[1]16. Crane operators, holding long boom licenses issued by the State as of the effective date of this act, shall not be required to be licensed pursuant to the provisions of this act until the expiration of their long boom licenses issued by this State.[1]

[1][14.] 17.[1] The [1][board] commissioner[1], after consultation with the [1][committee] board[1], shall adopt rules and regulations pursuant to the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.) necessary to effectuate the purposes of this act.

[1][15.] 18.[1] This act shall take effect on the first day of the seventh month following enactment.

in the]¹ Department of ¹[Law and Public Safety, under the State Board of Professional Engineers and Land Surveyors] Labor¹, a Crane Operators ¹[Certification] License¹ Advisory ¹[Committee] Board¹. The ¹[committee] board¹ shall consist of ¹[five] seven¹ members who are residents of the State ¹, consisting of the commissioner or his designee, as the chairperson, serving ex-officio and representing the Department of Labor, a heavy highway, utility or transportation construction contractor representative, a building contractor representative¹ and ¹[are certified] four licensed¹ crane operators who have been actively engaged ¹[as] in¹ crane ¹[operators] related operations¹ in this State for at least five years immediately preceding their appointment.

b. For a period of one year after the effective date of this act, and notwithstanding any other provisions of this act to the contrary, the first ¹[five] four¹ crane operators appointed as members of the ¹[committee] board¹ shall not be required, at the time of their first appointment, to be ¹[certified] licensed¹ under the provisions of this act as crane operators.

c. The Governor shall appoint each ¹[committee] board¹ member for a term of three years, except that of the members first appointed, two shall serve for terms of three years, two shall serve for terms of two years and ¹[one] two¹ shall serve for ¹[a term] terms¹ of one year. Each member shall hold office until his successor has been qualified. Any vacancy in the membership of the ¹[committee] board¹ shall be filled for the unexpired term in the manner provided for the original appointment. No member of the ¹[committee] board¹ may serve more than two successive terms, in addition to any unexpired term to which he has been appointed.

4. Members of the ¹[committee] board¹ shall be ¹[compensated and]¹ reimbursed for expenses and provided with office and meeting facilities and personnel required for the proper conduct of the ¹[committee's] board's¹ business.

5. The ¹[committee] board¹ shall annually elect from among its members a ¹[chairman and a vice-chairman] vice-chairperson¹ and may appoint a secretary, who need not be a member of the ¹[committee] board¹. The ¹[committee] board¹ shall meet at least twice a year and may hold additional meetings as necessary to discharge its duties.

6. The ¹[committee] commissioner¹ shall have the following powers and duties:

a. Administer and enforce the provisions of this act;

b. Issue and renew ¹[certifications] licenses¹ to crane operators

TITLE B

LICENSES

ARTICLE 1
GENERAL PROVISIONS

*§ B26-1.0 **General license requirements.** — It shall be unlawful, on and after the effective date of this title, for any person to engage in or carry on in the city any business, trade or calling regulated by this title, without having first obtained a license therefor from the commissioner in accordance with and subject to the provisions of this title, except that any certificates of qualification or licenses issued for any such business, trade or calling issued by the department, or by any other city department or agency, prior to the effective date of this title, shall continue to remain in full force and effect until the expiration or termination thereof in accordance with the terms thereof, unless sooner revoked or suspended for cause, as hereinafter provided, except that any approval, license, certificate or permit issued prior to the effective date of this title shall expire 12 months from the effective date of this law as amended, when no expiration date is specified.

§ B26-1.1 **Application for license.** — All applications for licenses shall be submitted on forms furnished by the department, and shall be accompanied by the required fee, as hereinafter provided. Each application for a license shall set forth the name, residence address and business address of the applicant, and such information and supporting data concerning his qualifications for the license as the commissioner may require.

§ B26-1.2 **Qualifications of applicant. — All applicants for license shall be citizens of the United States, and at least 21 years of age, shall be able to read and write the English language, and shall meet the qualifications prescribed for the particular license, as hereinafter provided.

***§ B26-1.3 **Examination of applicant.** — Every applicant for a license shall be examined as to his fitness and qualifications therefor in accordance with rules and regulations adopted and promulgated by the commissioner under and pursuant to the provisions of section 1105(h) of the charter. The commissioner may require the applicant to submit to an oral, written and practical examination or any or all of said examinations; and such examinations and investigations required to determine the fitness and qualifications of said applicant shall, upon the request of the commissioner, be conducted by the department of personnel, which shall certify the results thereof, pursuant to the provisions of section 817 of the charter.

§ B26-1.4 **Exemptions from examination.** — Notwithstanding the provisions of section B26-1.3, the commissioner shall have the power to exempt from examination any person who, prior to the effective date of th[illegible], held a license or was otherwise qualified under the provisions of the admin[illegible]ative code thereto-fore in effect.

§ B26-1.5 **Issuance of license.** — The commissioner shall issue a license to each applicant who shall have submitted satisfactory evidence of his qualifications, and shall have satisfactorily passed all required examinations to determine his fitness and qualifications, provided that no license shall be issued unless and until the applicant shall have paid the required fee therefor and complied with such other and further requirements for the particular license as may be hereinafter provided. All licenses issued by the commissioner shall have his signature affixed thereto; but the commissioner may authorize any subordinate to affix such signature.

****§ B26-1.6 **Term of license; renewal.** — All licenses issued by the commissioner under the provisions of this title shall expire 1 year from the date of issuance thereof, and may be renewed annually, provided that application for renewal of the license is made 30 calendar days prior to the expiration date of the license. All applications for renewal of a license shall be accompanied by the required renewal fee. If application for renewal is not made as provided above, the commissioner may, nevertheless, renew the license, provided the applicant pays an additional fee of five dollars, except as otherwise provided in this title, and provided further that the applicant satisfies the commissioner as to his qualifications.

†§ B26-1.7 **Use of license.** — a. No holder of a license issued under this title shall authorize, consent to, or permit the use of his license by or on behalf of any other person, and subject to the provisions of section B26-1.0 of this title, no person who has not qualified and obtained a license under this title shall hold himself out to the public as licensed or as the holder of a license issued under this title, either directly or indirectly, by means of signs, sign cards, metal plates, stationery, or in any other manner whatsoever.

b. Except for plumbing licenses, nothing herein contained, however, shall be construed to prohibit the use of a license by the holder thereof for or on behalf of a partnership or corporation provided that at least one member of the partnership or at least one officer of the corporation is licensed for the same business, trade or calling, and that all work performed by such partnership or corporation is performed by or under the direct supervision of such license holder or holders.

c. For plumbing licenses, nothing herein contained, however, shall be construed to prohibit the use of a license by the holder thereof for or on behalf of a partnership, corporation or other business association, provided that 51 per cent or more of the control or voting capital stock of such partnership, corporation, or other business association is owned by one or more holders of licenses for the same business trade or calling and that all work performed by such partnership, corporation or other business association is performed by or under the direct and continuing supervision of such license holder or holders. For plumbing licenses, however, where previous to the effective date of this code, a company, corporation, partnership or other business association or its predecessors has been doing plumbing work, it may continue to do so in any one or more of said business forms without complying with the foregoing, when such company, corporation, partnership or other business association or its predecessors has employed an average of ten or more journeymen plumbers doing plumbing work for at least five days a week for a period of ten years or more, such period need not be consecutive but must have occurred within a period of twenty

*Local Law 46-1960
**Local Law 69-1970
***Local Law 61-1970
****Local Law 91-1981
†Local Law 79-1981

ures and provided, however, that such plumbing business might continue we
All plumbing work conducted under the management and direction of a and
master plumber employed by such plumbing business and then said licensed master
plumber is not otherwise interested in, associated with or employed by any other
plumbing business operating in this city except as a joint venture in which the said
master plumber's employer is one of the joint venture.

§26-1.8 Revocation of license. — The commissioner shall have power to revoke or suspend any license upon proof of fraud, deceit, collusion or misrepresentation on the part of the holder in obtaining the license or any renewal thereof, or upon proof of violation of the laws or regulations relating to the practice of the building code and other applicable laws, rules or regulations relating to the business, trade or calling of the licensee, provided that the commissioner shall not revoke or suspend any license for any cause, unless and until the holder shall have been given at least 5 calendar days' prior notice in writing and an opportunity to be heard. However, notwithstanding the foregoing, when the public safety may be imminently jeopardized the commissioner shall have the power, pending a hearing and determination of charges, to forthwith suspend any license for a period not exceeding five working days.

§26-1.9 Violations and penalties. — Any person who shall violate any of the provisions of this title shall be guilty of a misdemeanor unless such violation shall be punishable by this title or other applicable law as a felony and upon conviction thereof shall be punishable by a fine not to exceed $500, or by imprisonment for a period not to exceed 6 months, or both such fine and imprisonment, unless the payment of a penalty, not more than $250, shall be provided for a civil action brought in the name of the city in any court of record in the city.

HAWAII ADMINISTRATIVE RULES

TITLE 12

DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS

SUBTITLE 7

BOARDS

CHAPTER 48

HOISTING MACHINE OPERATORS

§12-48-1	Purpose
§12-48-2	Scope
§12-48-3	Definitions
§12-48-4	Hoisting machine operators' advisory board
§12-48-5	Certificate required
§12-48-6	Application process
§12-48-7	Special certification
§12-48-8	Renewals
§12-48-9	Denials, suspensions, and revocations
§12-48-10	Appeals process
§12-48-11	Fees

§12-48-1 Purpose. This chapter implements section 396-19, Hawaii Revised Statutes, and promulgates rules for the certification of hoisting machine operators. The provisions of this chapter shall apply to any person or persons who act as a hoisting machine operator. [Eff 12/6/02] (Auth: HRS §396-4) (Imp: HRS §§396-4, 396-19)

§12-48-2 Scope. Certification of hoisting machine operators is limited to operators of equipment covered by ASME B30.5, and which has a lifting capacity of more than five tons, and who performs construction work as defined by section 12-50-2, Hawaii Administrative Rules. [Eff 12/6/02] (Auth: HRS §396-4) (Imp: HRS §§396-4, 396-19)

with the required forms identified in sections 12-48-6(b) and (c).

(b) The application for renewal must be filed with the director no later than ninety days after the expiration of the current certificate. Renewals will be granted or denied within sixty days of the receipt of a complete renewal application as defined in subsection (a).

(c) If an application for renewal is filed ninety-one days or more after the expiration of the current certificate, it shall be considered a new application.

(d) State-issued renewal certifications shall be valid for the balance of the NCCCO certification or other equivalent certification that is accepted by the board, but not to exceed five years. [Eff 12/6/02] (Auth: HRS §396-4) (Imp: HRS §§396-4, 396-19)

§12-48-9 Denials, suspensions, and revocations. (a) The director may deny, suspend, or revoke the certificate of a holder for any of these reasons:

(1) A violation of ASME B30.5;
(2) Non-compliance with an order of the director within the time specified in the order;
(3) Proof that the applicant or holder has been convicted of a crime directly related to the applicant's possible performance under the certificate applied for and where the applicant has not been sufficiently rehabilitated to warrant the public trust;
(4) Proof that the applicant or holder suffers from a mental or physical defect that would interfere with or prevent the applicant's safe handling of a hoisting machine;
(5) Providing false information or making any misrepresentation for the purpose of obtaining a certificate;
(6) The applicant or holder is an unlawful user of narcotics or dangerous drugs;
(7) A finding that the certificate holder was responsible or contributed to an accident involving a hoisting machine; or
(8) For any other reason which at the discretion of the director would create a hazard or risk to persons or property.

(b) Operation of a hoisting machine in violation of ASME B30.5, may result in the suspension of

certification for not less than twenty-four hours and not more than one year, or revocation of certification.

(c) If the director makes a finding that an accident was caused by the actions or omissions of the certificate holder and the director suspends or revokes the holder's certificate, the director may require the certificate holder to retake and pass the certification examination before applying to have his or her certification reinstated.

(d) A person whose certificate has been revoked may apply for certification not less than one year after the date of revocation. [Eff 12/6/02] (Auth: HRS §396-4) (Imp: HRS §§396-4, 396-19)

§12-48-10 Appeals process. (a) Any denial, revocation, or suspension shall be final and conclusive against the applicant or holder unless a written notice of contest is filed with the director. The written notice of contest shall be an original, served on the director and must be postmarked, or if not mailed, received by the director within twenty calendar days of the denial, revocation, or suspension.

(b) The department shall hold the appeals hearing within thirty calendar days of receipt of the written request. The reconsideration hearing shall be de novo and its findings may be contested on the record only to the hawaii labor relations board.

(c) The applicant or holder may request an informal conference to discuss the denial, revocation, or suspension, but the informal conference shall not suspend or change the twenty-day filing requirement for the notice of contest.

(d) Upon notice of revocation of a state hoisting machine operator certificate, the operator shall immediately surrender to the department the revoked state hoisting machine operator certificate. [Eff 12/6/02] (Auth: HRS §396-4) (Imp: HRS §§396-4, 396-19)

§12-48-11 Fees. (a) The applicant shall submit the completed application form to the director with a $50 application fee.

(b) After the applicant is notified of approval, the applicant shall remit a $500 certification fee

within thirty calendar days to the director. For certification periods of less than five years, the fee is prorated to a year or portion of a year. The fee for one year or a fraction of one year is $100.

(c) Upon approval for a special certificate, the applicant shall remit a $300 fee to the director within thirty calendar days to the director.

(d) Renewal applications shall be submitted to the director and accompanied with the renewal fee of $500.

(e) All application and certification fees are nonrefundable. [Eff 12/6/02] (Auth: HRS §396-4) (Imp: HRS §§396-4, 396-19)

§12-48-3 Definitions. As used in this chapter:

"ASME B30.5" means ASME B30.5-2000, American Society of Mechanical Engineers Safety Standards, which also includes the Addenda ASME B30.5a-2002.

"Board" means the hoisting machine operators' advisory board.

"Direct supervision" means that a certified hoisting machine operator is visible to the operator of the hoisting machine or in voice contact with the operator at the site where the work is being performed.

"Director" means the director of the department of labor and industrial relations or the director's designee.

"DOT" means state department of transportation.

"NCCCO" means National Commission for the Certification of Crane Operators.

"State" means State of Hawaii. [Eff 12/6/02] (Auth: HRS §396-4) (Imp: HRS §§396-4, 396-19)

§12-48-4 Hoisting machine operators' advisory board. The board shall be composed of five members from both organized labor and management employers. The members are to serve without compensation and without reimbursement for expenses. Members shall be appointed by the governor and may adopt rules pursuant to chapter 91, Hawaii Revised Statutes, for carrying out the purposes of the hoisting machine operators' advisory board. [Eff 12/6/02] (Auth: HRS §396-4) (Imp: HRS §§396-4, 396-19)

§12-48-5 Certificate required. (a) No person shall operate a hoisting machine in the State without a current State issued hoisting machine operator certificate except as identified in this section.

(b) Each hoisting machine operator shall have in their possession a valid certificate during the operation of a hoisting machine.

(c) An operator must have a current physical examination certificate as required in section 12-48-6(b) at all times. Such proof, must be submitted upon request to the director within two hours of request.

(d) A hoisting machine operator certificate is not required for operator assistants,

apprentices, oilers, assistants to the engineers, and trainees, provided they are under the direct supervision of a certified hoisting machine operator at all times while operating a hoisting machine and they meet the training requirements of ASME B30.5.

(e) A hoisting machine operator certificate is not required for persons performing maintenance or inspection work.

[Eff 12/6/02] (Auth: HRS §396-4) (Imp: HRS §§396-4, 396-19)

§12-48-6 Application process. (a) An applicant for a hoisting machine operator certificate shall be at least twenty-one years of age at the time of application and provide proof of age by submitting a valid original of any two of the following for the purpose of photocopying:

(1) Birth certificate;
(2) Driver's license;
(3) Passport; or
(4) Hawaii state ID.

(b) Applicant must have passed a physical examination that meets the requirements of ASME B30.5, Section 5-3.1.2(a), and evidence such examination by submitting a complete and current copy of one of the following:

(1) NCCCO medical examiner's certificate; or
(2) A DOT certificate of medical examination.

(c) At the time of application, an applicant must provide a current NCCCO certificate or an equivalent form of certification that is accepted by the board that possesses hoisting machine operation experience as required for the NCCCO written exam. A copy of the NCCCO experience form is acceptable.

(d) Applications shall be submitted on forms provided by the director. A completed application shall consist of the form provided by the director that is completely answered by the applicant, the application fee, and all supporting documents required in subsections (a) through (c), unless applying for a special certification, in which case section 12-48-7(b) applies in lieu of subsection (c). A completed application shall be submitted to the director.

(e) The director shall notify the applicant whether

the application was approved or disapproved within sixty calendar days of receipt of a completed application. Approved applicants must submit the required certification fee within thirty calendar days or must re-apply. The director shall issue the state hoisting machine operator certificate within thirty days of receipt of the fee.

(f) For initial applications only, the state certificate shall be valid for the balance of any current NCCCO certification or other equivalent board-accepted certification plus the term of any approved renewal NCCCO certification or its equivalent. The applicant must submit proof of such approved renewal at the time the application fee is submitted. [Eff 12/6/02] (Auth: HRS §396-4) (Imp: HRS §§396-4, 396-19)

§12-48-7 Special certification. (a) A special certificate is available for an applicant who cannot meet the requirements identified in section 12-48-6(c) and the applicant works for only one employer and operates only specific hoisting machines as identified by the applicant's employer.

(b) At the time of application the applicant's employer must certify in writing to the director that it has provided operator training to the applicant that meets the training qualifications of ASME B30.5 for the specific hoisting machine or machines identified in the application. The applicant must comply with sections 12-48-6(a), (b), and (d).

(c) A special certificate is valid for two years or until the holder terminates employment with the employer, whichever comes sooner. A special certificate is not renewable and is valid for only those hoisting machines specifically identified on the certificate.

(d) A special certificate is nontransferable. A special certificate shall be issued only once to an operator. [Eff 12/6/02] (Auth: HRS §396-4) (Imp: HRS §§396-4, 396-19)

§12-48-8 Renewals. (a) Applications for renewal of hoisting machine operator certificates shall be made on forms provided by the director and must be submitted to the director with a nonrefundable renewal fee. Renewal applications must be submitted

Survey of Crane Operator Licensure Requirements
November 2009

Jurisdiction	License Required	Certification Required	Grandfathered License	Original Application Fee	Renewal Application Fee	Term of License	Experience Requirement	Experience Investigation	State Administered Examination	Approved Certifying Organizations	Statute	Regulation
Delaware	No	No	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Maryland	No	No	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Md. Labor & Employment Article, §§2-106(b)(4), and 5-312	Md Code 09.12.26.01-09.12.26.13
New Jersey	Yes	Yes	No	$250	$250	5 years	1000 hours	Yes	N/A	NCCCO	N.J.S.A. 45:26-1 - 45:26-17	N.J.A.C. 12:121-1.1 - 12:121-9.1
New York	Yes	No	No	$150	$60	5 years	3 years	Yes	Yes	None	Not applicable	12 NYCRR 23-8.1 - 23-8.5
New York City	Yes	Yes	No	$100-$200	$75-$150	5 years	2 years	Yes	N/A	NCCCO	Not available	Not available
Ohio	No	No	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
West Virginia	Yes	Yes	Yes	$75	$75	5 years	No	No	N/A	NCCCO	W. Va. Code § 21-3D-1 - § 21-3D-9	W. Va. C.S.R. 42-24-1 to 42-25-6

Note:
With 2,000 hours of documented experience within the 4 years immediately preceding the date of application.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF STATE
BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS
STATE BOARD OF CRANE OPERATORS
Post Office Box 2649
Harrisburg, Pennsylvania 17105-2649
(717) 783-3397

May 25, 2010

The Honorable Arthur Coccodrilli, Chairman
INDEPENDENT REGULATORY REVIEW COMMISSION
14th Floor, Harristown 2, 333 Market Street
Harrisburg, Pennsylvania 17101

Re: Proposed Regulation
State Board of Crane Operators
16A-7101: Initial General Rulemaking

Dear Chairman Coccodrilli:

Enclosed is a copy of a proposed rulemaking package of the State Board of Crane Operators pertaining to Initial General Rulemaking.

The Board will be pleased to provide whatever information the Commission may require during the course of its review of the rulemaking.

Sincerely,

Anthony J. Lusi, Jr., Chairperson
State Board of Crane Operators

AJL/CKMc:bc
Enclosure
cc: Basil L. Merenda, Commissioner
Bureau of Professional and Occupational Affairs
Steven V. Turner, Chief Counsel
Department of State
Joyce McKeever, Deputy Chief Counsel
Department of State
Cynthia Montgomery, Regulatory Counsel
Department of State
Christopher K. McNally, Counsel
State Board of Crane Operators
State Board of Crane Operators

TRANSMITTAL SHEET FOR REGULATIONS SUBJECT TO THE REGULATORY REVIEW ACT

I.D. NUMBER:	16A-7101
SUBJECT:	INITIAL GENERAL RULEMAKING
AGENCY:	DEPARTMENT OF STATE STATE BOARD OF CRANE OPERATORS

TYPE OF REGULATION

X Proposed Regulation

Final Regulation

Final Regulation with Notice of Proposed Rulemaking Omitted

120-day Emergency Certification of the Attorney General

120-day Emergency Certification of the Governor

Delivery of Tolled Regulation
a. With Revisions b. Without Revisions

FILING OF REGULATION

DATE	SIGNATURE	DESIGNATION
5/25/2010	Eleanor J. Nichols	HOUSE COMMITTEE ON PROFESSIONAL LICENSURE
		MAJORITY CHAIRMAN Michael McGeehan
5/25/10	Mary Walker	SENATE COMMITTEE ON CONSUMER PROTECTION & PROFESSIONAL LICENSURE
		MAJORITY CHAIRMAN Robert Tomlinson
5/25/10	K. Cooper	INDEPENDENT REGULATORY REVIEW COMMISSION
		ATTORNEY GENERAL (for Final Omitted only)
5/25/10	M. Latham	LEGISLATIVE REFERENCE BUREAU (for Proposed only)

May 19, 2010