

# Washington State Construction Crane Certifier Program Candidate Handbook

## Accreditation Process

In the State of Washington, candidates may seek Accreditation as a Crane Certifier in one or more of the following crane categories:

- Mobile Cranes
- Tower Cranes
- Articulating Cranes  
*The Articulating crane program will be available in January 2010.*
- Overhead Cranes  
*The Overhead crane program will be available in Jan 2010.*

There are three (3) steps to follow to become accredited to certify cranes in the construction industry:

**STEP 1-** Make sure you meet the experience requirements and other accreditation criteria.

**STEP 2-** Submit an application to become a crane certifier to the Department of Labor and Industries.

**STEP 3-** Take and pass the required certification examinations.

These steps are described in detail below.

### Step 1 - Make Sure You Meet All of the Accreditation Criteria

- All applicants must possess knowledge of chapter 296-155 WAC, Safety Standards for Construction Work, as well as American Society of Mechanical Engineers (ASME) standards, relating to the design, testing, inspection and operation of cranes specifically applicable to the types of cranes for which an accreditation will be issued.
- All applicants must demonstrate at least five years crane related experience, of which two years must be actual crane inspection activities. The other three years may include experience in duties such as a crane operator, crane mechanic,

crane shop foreman, crane operations supervision, or rigging specialist.

Related education may be substituted for related experience at a ratio of two years of education for one year of experience up to three years. Related education could include such courses in engineering, physics, applied mathematics, applied science courses in nondestructive testing, construction technology, technical courses in heavy equipment mechanic, welding technology, etc.

### Step 2 - Submit an Application to become a Construction Crane Certifier to the Department of Labor and Industries

Candidates must submit an application for accreditation to the Department. All information and attachments must be given under penalty of perjury. The application must include, but is not limited to, the following:

- A statement of the crane types per the ASME B30 series that the applicant desires to certify pursuant to the accreditation.
- A statement of qualifications and experience including their capacities, satisfying at a minimum the criteria set forth in WAC 296-155-53102 as well as any and all other qualifications the applicant wishes the Department to consider.

### Step 3 - Take and Pass the Required Certification Examinations

#### WASHINGTON GENERAL CRANE CERTIFIER EXAMINATION

All candidates must take the Washington General Crane Certifier Examination. This examination consists of 50 multiple-choice questions. Candidates are allowed 60 minutes to complete the examination. The content outline of the examination is found on page 3.

Candidates must also take one or more of the Specific Inspection and Proof Load Test Exams. These are currently available for Mobile and Tower cranes. The exams for Articulating cranes and Overhead cranes will be available in 2010.

MOBILE CRANE ADDITIONAL INSPECTION CRITERIA AND PROOF LOAD TEST EXAM

This examination consists of 30 multiple-choice questions. Candidates are allowed 60 minutes to complete the examination. The content outline of the examination is found on page 4.

TOWER CRANE ADDITIONAL INSPECTION CRITERIA AND PROOF LOAD TEST EXAM

This examination consists of 30 multiple-choice questions. Candidates are allowed 60 minutes to complete the examination. The content outline of the examination is found on page 5.

CRANE OPERATOR EXAMINATIONS

Candidates must also pass the respective crane operator certification examination(s).

**MOBILE CORE EXAM** Candidates who seek accreditation to certify mobile cranes must contact one of the crane operator testing organizations that have been accredited by a nationally recognized accrediting agency. (See list on page 3)

**TOWER, OVERHEAD & ARTICULATING CRANE OPERATOR EXAMS** Candidates who seek accreditation to certify these cranes, must pass the applicable operator's exam.

Candidates who are currently certified as operators in the category(s) in which they seek to become a crane certifier are not required to retake the crane operator examination(s); simply submit a copy of their current certification.

**Applying to take the Examinations**

Candidates may find it more convenient to take the required exams prior to or concurrently with the submittal of their application and resume to the Washington State Department of Labor and Industries.

Candidates do not have to wait for approval from Washington State Department of Labor and Industries to take the written exams. The Accredited Crane Certifier process may be expedited if the candidate can demonstrate they have passed the appropriate exam(s) – However, it should be pointed out, that passing the exams does no guarantee that you will become an accredited crane certifier. The Department of Labor & Industries will make that determination based on the applicant's application for accreditation and resume.

Candidates wishing to take the Washington State Construction Crane Certifier examination(s) may request an exam application form from the National Commission for the Certification of Crane Operators (NCCCO) or International Assessment Institute (IAI).

Candidate exam applications along with the respective fees must be submitted to International Assessment Institute. Applications are due at least two (2) weeks prior to the scheduled examination date. **DO NOT** send fees to the Department of Labor & Industries.

Information about the specific locations of the test sites will be available no-less-than four (4) weeks prior to the examination. Candidates eligible to sit for the examination will receive an admission letter from the IAI approximately one (1) week before the scheduled test administration date.

**Fees**

The fees for the WA State Written Examinations are as follows.

- Washington General Crane Certifier Examination.....\$250.00
- Mobile Crane Specific Inspection Criteria and Proof Load Test Exam.....\$250.00
- Tower Crane Specific Inspection Criteria and Proof Load Test Exam.....\$250.00

Fees for the operator written examinations; candidates must contact one of the crane operator testing organizations that have been accredited by a nationally recognized accrediting agency.

## Score Reporting

The Written Examinations are electronically scored by International Assessment Institute. All candidates will receive a score report of their performance. Examination results are mailed to candidates approximately twelve (12) business days after the examination administration.

## Retest and Recertification Fees

If you are retaking any written examination or are recertifying, the cost is the same as the original cost based on the category(s) listed under Fees.

## Certification Cards

Candidates who complete the requirements for accreditation or renewal will receive a card from the Washington State Department of Labor & Industries designating them as a “WA State Crane Certifier” listing the specific category(s) in which they have successfully met all requirements.

## Adding Crane Categories

WA State Crane Certifiers may add a new category to their accreditation at any time by applying to the department for approval for the additional category(s) and passing the respective examination(s).

## Nationally Recognized Testing Agencies

- National Commission for the Certification of Crane Operators (NCCCO)
- Crane Institute of America, *Certification* (CIC)
- National Center for Construction Education & Research (NCCER)
- International Union of Operating Engineers, Local 12, California

## Duration and Renewal (WAC 296-155-53108)

Accreditation for WA State Crane Certifiers is valid for three (3) years. Renewal may be obtained provided the crane certifier meets the following criteria:

Crane certifiers must complete forty (40) hours of crane related training every three (3) years, in courses recognized by the department providing the applicant has been actively inspecting cranes during their prior accreditation period.

An applicant is considered active if he/she has certified/inspected at least twenty-one (21) cranes during their accreditation period.

An applicant who has not certified/inspected at least twenty-one cranes or completed 40 hours of crane related training during the accreditation period may take the written exams to become recertified.

At minimum, all applicants for renewal must successfully complete the written examinations every six (6) years.

## Reference Sources

The primary reference sources for the examinations are as follows:

Reference Source	Applicable Exams
WAC Chapter 296-155 Part L	All Exams
ASME B30.5	WA State General Crane Certifier Mobile Crane Specific Inspection Criteria and Proof Load Test Exam
ASME B30.3	Tower Crane Specific Inspection Criteria and Proof Load Test Exam

## Written Exam Content Outlines

### Washington General Crane Certifier Examination - Content Outline

#### Domain 1 – Washington State Crane Regulations - 36%

1. Know scope of WAC 296-155-529 through 296-155-53214 – Construction Crane Certification.
2. Know basic crane terminology and definitions including those in WAC 296-155-52902.
3. Know requirements of a Washington State Accredited Crane Certifier.
4. Understand the duties and recordkeeping responsibilities required by this rule.
5. Understand requirements regarding temporary and annual certificates of operation.

6. Know conditions under which identification stickers need to be attached.
7. Understand grounds on which crane certifier accreditation can be revoked.
8. Know requirements for crane decertification and reinstatement.

**Domain 2 – Crane Inspection, Documentation, & Maintenance Requirements - 50%**

1. Know how to review crane maintenance records of critical components to ensure maintenance of these components has been performed in accordance with the manufacturer’s recommendations.
2. Know how to review crane periodic and frequent inspection documentation.
3. Know how to proceed if manufacturer’s equipment criteria is unavailable.
4. Know how to identify the crane or wire rope manufacturer’s specifications for size, type and inspection requirements.
5. Know the requirements for the removal criteria of wire rope, in the absence of the manufacturer’s specifications:
  - (a) Know how to perform a complete and thorough inspection covering the surface of there working range plus three additional wraps on the drum of the wire ropes.
  - (b) Know what to do if a wire rope deficiency is identified.
  - (c) Know wire rope removal criteria based upon reductions from nominal diameter.
  - (d) Know replacement rope criteria.
6. Know what steps need to be taken prior to performing a proof load test:
  - (a) Know the requirements to performing a proof load test.
  - (b) Understand when a registered professional engineer familiar with the type of equipment involved must develop written specifications for load testing.
7. Know how to conduct a visual inspection of crane components.

**Domain 3– Safety Standards & Regulations-14%**

1. Know relevant WAC crane safety standards found in Chapter 296-155 WAC, Part L.
2. Know relevant requirements in Chapter 296 -155 WAC, Safety Standards for Construction Work.
3. Know applicable ASME/ANSI requirements.

**Mobile Crane Additional Inspection Criteria and Proof Load Testing Exam - Content Outline**

**Domain 1 - Visual Inspection - 30%**

(according to WAC 296-155-53202)

1. Know which crane components must be visually inspected.
2. Know the requirements to conduct a proper visual inspection.
3. Know how to handle situations in which additional information is required to confirm visual acceptance.

**Domain 2 – Operational Testing- 15%**

1. Know what operational tests must be made without a load applied to the hook.
2. Know what you are checking for when conducting operational tests.

**Domain 3 – Annual and Quadrennial Proof Load Testing- 25%**

1. Know what components are subject to annual and quadrennial proof load testing.
2. Know how to conduct an annual proof load test.
3. Know how to conduct a “free-rated load” (on-rubber) test.

**Domain 4 - Load Charts- 30%**

1. Know how to determine net load capacity or gross capacity for the configuration of the crane.
2. Know how to differentiate between structural and stability capacities.
3. Know how to determine the appropriate radius for testing.

## **Tower Crane Additional Inspection Criteria and Proof Load Testing Exam - Content Outline**

### **Domain 1 – Inspection Requirements prior to Erecting a Tower Crane- 25%**

1. Know the conditions or situation that requires tower crane and tower crane assembly parts to be inspected.
2. Understand requirements that must be met prior to erecting a tower crane.
3. Know what documents and records must be inspected prior to erecting a tower crane.

### **Domain 2 - Visual Inspection – 25%** (according to WAC 296-155-53206)

1. Know which crane components must be visually inspected.
2. Know the requirements to conduct a proper visual inspection.
3. Know how to handle situations in which additional information is required to confirm visual acceptance.

### **Domain 3– Requirements prior to Performing a Proof Load Test (Operational Testing) - 20%**

1. Know what tests must be conducted.
2. Know what functional motion test must include and how it must be conducted.
3. Know the sequence in which functional motion tests must be conducted.

### **Domain 4– Proof Load Testing of Tower Cranes- 20%**

1. Know how to conduct and document an annual proof load test.
2. Know how to verify that hoist load limit switches are operating properly.
3. Know how to test the structural support or foundation system of fixed free standing tower cranes.
4. Know how to test the structural support or foundation system of rail traveling tower cranes.

### **Domain 5 – Self-erecting cranes- 10%**

1. Know additional inspection requirements that apply to self-erecting cranes:
  - reeving
  - ladder
  - outriggers.
2. Know how to test the structural support or foundation system of self-erecting cranes.

The Washington State Construction Crane Certifier Examination application can be found at <http://lni.wa.gov/safety/topics/atoz/cranes/files/CraneCertExamAp.pdf>