DACUM Research Chart for Crane & Digger Derrick Operator

Produced for

\[\text{Electrical Industry Certifications Association}\]

Produced by

\[\text{The Ohio State University}\
\text{College of Education and Human Ecology}\
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August 23-24, 2016
<table>
<thead>
<tr>
<th>DUTIES</th>
<th>TASKS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Complete Daily Crane/Digger Derrick Inspections &amp; Maintenance</strong></td>
<td>A.1 Complete daily vehicle inspection and report (DVIR)</td>
</tr>
<tr>
<td></td>
<td>A.10 Perform additional inspections (e.g., employer, manufacturer, customer)</td>
</tr>
<tr>
<td><strong>B. Manage Crane/Digger Derrick Access and Egress</strong></td>
<td>B.1 Verify job site location</td>
</tr>
<tr>
<td><strong>C. Evaluate Worksite Conditions</strong></td>
<td>C.1 Identify soil surface conditions (e.g., slope, voids, stability)</td>
</tr>
<tr>
<td><strong>D. Setup/Assemble Crane/Digger Derrick</strong></td>
<td>D.1 Determine load weight and size</td>
</tr>
<tr>
<td></td>
<td>D.10 Determine reeving requirements</td>
</tr>
<tr>
<td><strong>E. Perform Safety Checks</strong></td>
<td>E.1 Participate in tail board meetings</td>
</tr>
<tr>
<td><strong>F. Operate Crane/Digger Derrick</strong></td>
<td>F.1 Follow signal directions</td>
</tr>
<tr>
<td>A.5 Complete visual inspection of boom/turret (e.g., welds, wear pads, pins)</td>
<td>A.6 Complete visual inspection of hoisting system (e.g., ropes, hooks, sheaves)</td>
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<tr>
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<tr>
<td>B.5 Maintain compliance to environmental restrictions (e.g., protected wildlife, invasive species, sensitive areas)</td>
<td>B.6 Identify off-road access issues (e.g., gates, culverts, fences)</td>
</tr>
<tr>
<td>C.5 Identify right-of-way boundaries</td>
<td>C.6 Identify environmental considerations (e.g., weather, noise, wetlands)</td>
</tr>
<tr>
<td>D.5 Place cribbing and outrigger support</td>
<td>D.6 Level crane/digger derrick</td>
</tr>
<tr>
<td>E.5 Conduct trial lift (for hoisting personnel)</td>
<td>E.6 Manage equipment issues (e.g., damage, maintenance, missing parts)</td>
</tr>
<tr>
<td>F.5 Perform lift</td>
<td>F.6 Manage equipment load (e.g., boom angle, boom deflection, tag line)</td>
</tr>
</tbody>
</table>
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<th>DUTIES</th>
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<tr>
<td>G. Perform Digger Derrick-Specific Operations*</td>
<td>G.1 Unstow digger derrick auger</td>
</tr>
<tr>
<td>G.10 Install capstan attachment</td>
<td></td>
</tr>
<tr>
<td>H. Shut Down/Disassemble Crane/Digger Derrick</td>
<td>H.1 Remove attachments (e.g., personnel basket, counter weight)</td>
</tr>
<tr>
<td>I. Maintain Employment Requirements</td>
<td>I.1 Maintain fit-for-duty status</td>
</tr>
</tbody>
</table>

* These tasks are specific to just the digger derrick
<table>
<thead>
<tr>
<th>G.5 Transfer pole guides</th>
<th>G.6 Extend fiberglass boom section</th>
<th>G.7 Install anchor attachment</th>
<th>G.8 Install butterfly attachment</th>
<th>G.9 Install Christmas tree attachment</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td>H.5 Remove equipment grounds</td>
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<tr>
<td>I.5 Maintain state and local licenses</td>
<td>I.6 Participate in training (e.g., vendor, employer, apprentice)</td>
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General Knowledge and Skills

There are a total of 180 knowledge and skill areas identified for the general, crane/digger derrick and specialty certification areas in the master list maintained by EICA. For space purposes, they are not listed here again.

Behaviors

Safety oriented
Knowledgeable
Decisive
Confident
Calm under pressure
Compliant
Patient
Team player
Self motivated
Observant
Open minded
Trustworthy
Detail oriented
Accurate
Reliable
Goal oriented
Common sense
Leader
Organized
Professional

Acronyms

OSHA  Occupational Safety & Health Administration
CPR   Cardiopulmonary Resuscitation
LMI   Load Moment Indicator
Tools, Equipment, Supplies and Materials

PPE
Grease gun
Calculator
Cell phone
Angle indicator
Level
Tape measure
Barricades
Anemometer
DOT logbook
Luberboom®
Inspection checklists
GPS/map
Load chart
Rigging capacities chart
Operator manual
Rigging capacities chart
Permits
Grounding equipment
Wheel chocks

Motor/hydraulic oil
Basic hand tools
Shovel
Neverseize®
Matting
Cribbing
Padding
2-way radio
Signal placard
Test weights
Man basket
Jibs
Load blocks
Auger/teeth
Safety manual
Traffic control signs and cones
Job brief forms
First aid kit
Fire extinguisher

Future Trends and Concerns

More stringent regulations to follow
Aging workforce
Changing equipment technology
Increase in robotic cranes/arms
Backyard equipment
Lack of consistent enforcement in regulations
Use of Dept. of Justice as an enforcement tool
Electronic posting of OSHA logs
Retention of key staff
Need for industry certifications
Growth in micro grids
Vulnerability of power grid
Increased security requirements
Changing political climate