**PURPOSE:**

Wagner-Meinert, LLC will maintain a safe and healthy work environment in an ongoing effort to protect each employee from potentially hazardous or unsafe conditions. It is the goal of Wagner-Meinert, LLC to insure that Personnel will at no time suffer any adverse health effects or injuries related to the use of overhead cranes.

To establish uniform administrative procedures and minimum safety requirements for activities related to the operation of overhead traveling cranes and lifting equipment, Wagner-Meinert, LLC has developed this program.

**SCOPE:**

Only authorized, properly trained employees of the Wagner-Meinert,LLC shall be permitted to operate overhead traveling cranes. These persons shall be authorized by the Shop Foreman or their Supervisor over the use and operation of the crane. Both shall maintain a list of personnel authorized to operate the crane(s) under their jurisdiction.

**ASSOCIATED DOCUMENTS:**

**Appendix 14A: Monthly Overhead Crane Inspection Checklist**

**Appendix 14B: Monthly Rigging Equipment Inspection Checklist**

**REFERENCES:**

1. 29 CFR 1910.179 (j) (2) and (3)
2. 29 CFR 1926.1427 Cranes and Derricks
3. 29 CFR 550 Crane Safety

**1.0 TRAINING**

**2.0 OVERHEAD TRAVELING CRANE INSPECTION**

**3.0 PREVENTATIVE MAINTENANCE**

**4.0 LIFTING EQUIPMENT**

**5.0 RIGGING**

**6.0 CONSTRUCTION CRANES – SUBCONTRACTORS AND WAGNER-MEINERT PERSONNEL**

**1.0 TRAINING**

1.1 Before a person may be authorized to operate a overhead crane he/she must complete an apprenticeship with a knowledgeable, authorized operator who will train that person how to operate the crane. The length of the apprenticeship shall be determined by the Shop Foreman. The trainee must also complete a crane safety training course.

 1.1.1 Hand signals to crane operators shall be those prescribed by the applicable ANSI standard for the type of crane in use. An illustration of the signals shall be posted at the job site.

 1.1.2 Whenever internal combustion engine powered equipment exhausts in enclosed spaces, tests shall be made and recorded to see that employees are not exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres.

 1.1.3 Operators must meet the physical qualifications, pass a physical, a written examination, understand and be able to use a load chart as well as calculate loads for the crane type.

**2.0 CRANE INSPECTION**

2.1 Our overhead crane Program will address all overhead cranes in use shall meet the applicable requirements for design, inspection, construction, testing, maintenance and operation as prescribed in the ANSI B30.5-1968.

2.2 Each day or prior to use, a visual inspection shall be made by the crane operator prior to operating the crane. The "Visual Inspection Checklist" shall be completed at the time of each inspection and filed with the Shop Foreman. Any crane deficiencies and safety hazards shall be brought to the attention of the Shop Foreman. Cranes which are unsafe shall be tagged with sign(s) “Out Of Order” and not be operated.

2.3 All hooks are inspected monthly, they are inspected for cracks and deformation and recorded. Date of inspection, signature of person performing inspection, and the serial numbers are documented. (See Appendix 14A). Quarterly inspections on hooks are done by a certified outside contractor and the inspections will be documented.

2.4 Monthly inspections on all hoist chains / running ropes (including end connections) and slings for excessive wear, twist, distorted links, and stretch beyond manufacturer’s recommendations. Certifications records have date of inspection, signature of competent person performing inspection, and serial number of crane hoist chains are documented. Chains / ropes that were in storage for long periods must be inspected before use (See Appendix 14A). Quarterly inspections on hoist chains / ropes (including end connections) are done by a certified outside contractor and the inspections will be documented.

2.5 At least annually, each crane shall be inspected by the manufacturer or by a competent, outside contractor. The inspection shall include as a minimum, the OSHA requirements found in 29 CFR 1910.179 (j) (2) and (3). A written report containing deficiencies, safety hazards and recommendations shall be submitted to the Safety Director. Deficiencies that would render the crane unsafe to operate should be reported to the Safety Director immediately and the crane taken out of service until repairs are made.

2.6 A permanent chart with clearly legible shall be provided with each crane or lifting equipment and securely fixed in a location easily visible to the operator while seated at this control station.

2.7 Any modifications of equipment may only be made with the manufacturer's written approval.

2.8 All inspection records shall be maintained by the shop superintendent.

**3.0 PREVENTATIVE MAINTENANCE**

3.1 As required by OSHA regulations, a preventative maintenance program based on the crane manufacturer's recommendations has been established.

3.2 All maintenance records shall be maintained.

3.3 During service and maintenance activities, equipment must be tagged “Out of Service. Where the unexpected energizing, start-up or release of stored energy is possible, Wagner-Meinert’s Lockout/Tagout Program and procedures shall be followed.

**4.0 LIFTING EQUIPMENT**

4.1 Each day or prior to use, lifting slings, alloy steel chains, running ropes, and all lifting attachments shall be visually inspected for damage and/or defects by the authorized operator or by the shop foreman. Lifting slings, alloy steel chains, running ropes, and all lifting attachments are inspected quarterly by a certified outside contractor and are documented. Damaged or defective equipment shall be immediately removed from service and tagged as being "out of service". WMI personnel will follow manufacturers safe work practices and limitations when using any lifting apparatus.

4.2 Additional inspections will be performed on new equipment. During sling use or where operating conditions warrant according to the following outline:

Alloy Steel Chain

At intervals no greater than 3 months, a thorough inspection for wear, defects, deformation and increased length will be conducted by the Safety Director and Shop Foreman. A written record will be maintained. A permanently affixed durable identification tag stating size, grade, reach and capacity will be affixed to all tested and certified chain slings. All new and repaired chain slings, including components, shall be proof tested by the manufacturer or equivalent entity at twice their rated capacity prior to initial use. A certificate of this proof test must be retained in Shop Foreman’s office.

Wire Ropes Slings and Running Ropes

All slings and running ropes with welded end attachments must be proof tested by the manufacturer or equivalent entity at twice their rated capacity prior to initial use. All slings and running ropes are visually inspected monthly. A certificate of this proof test must be retained in Shop Foreman’s office.

Metal Mesh Slings

Each sling shall have a tag permanently affixed stating rating capacity for both vertical basket and choker hitches. All new and repaired slings shall not be used unless proof tested by the manufacturer or equivalent entity at a minimum 1.5 times the rated capacity. A certificate of this test will be retained in Shop Foreman’s office.

Synthetic Mesh Slings

Each sling shall be marked or coded to show rated capacities. Repairs shall not be attempted by anyone other than the manufacturer or equivalent entity. Each new and repaired sling shall be proof tested by the manufacturer or equivalent entity to twice the rated capacity. A certificate of this test will be maintained in Shop Foreman’s office.

**5.0 RIGGING**

5.1 Rigging is essential for moving construction materials and equipment and, at the same time, keeping them under control.

5.2 Never swing loads over the heads of workers in the area.

5.3 Only trained flagmen and signalmen are to direct rigging operations, using established hand signals that are standard for the industry.

5.4 Tag lines must be used to control rigged loads.

5.5 Do not overload any part of your rigging. Check loads just off the ground for balance and stability before hoisting.

5.6 Never leave a suspended load unattended.

5.7 Never allow loads, booms or rigging to approach within 10 feet of energized electrical lines rated 50KV or lower unless the lines are de-energized. For lines rated greater than 50 KV, follow OSHA regulations.

5.8 Always operate cranes on firm, level ground or use mats, particularly for near-capacity lifts.

5.9 Rope off or barricade a space equivalent to the swing radius of the rear of the rotating structure 360 degrees around all cranes operating on your jobsite.

* 1. All hoist chains, slings and hooks are inspected monthly and before each use. Every three months all hoist chains, slings and hooks will be inspected and documented by a certified outside contractor.
	2. An accessible fire extinguisher of 5BC rating, or higher, shall be available at all operator stations or cabs of equipment.

**6.0 CONSTRUCTION CRANES – SUBCONTRACTORS AND WAGNER-MEINERT PERSONNEL**

6.1 This section covers construction cranes for Wagner-Meinert personnel and sub-contactors. Wagner-Meinert personnel are trained in all aspects of crane operation except for operating, setting up and tearing down. They are trained in all other aspects of crane safety in Section 6.0.

6.2 All construction crane operators are all verified that the required training and certifications are in place for the type of work they perform. This includes crane operators that we sub-contract with. This includes Construction Cranes, Overhead Cranes, Gantry Cranes, Crawler Locomotive, Truck Cranes, Derrick Cranes, and Helicopters.

6.3 Cranes must not be used unless ground conditions are able to support the equipment and any supporting materials per the manufacturer's specifications.

6.4 Operators must follow manufacturer instructions and prohibitions for assembling and/or disassembling equipment.

6.4.1 When assembling or disassembling equipment (or attach­ments), the employer must comply with all applicable manufacturer prohibitions and must comply with either:

(a) Manufacturer procedures applicable to assembly and disassembly, or

(b) Employer procedures for assembly and disassembly. Employer procedures may be used only where the employer can demonstrate that the procedures used meet the requirements in § 1926.1406. Note: The employer must follow manufacturer procedures when an employer uses synthetic slings during assembly or disassembly rigging.

6.5 The procedures must address that a competent and qualified person must direct the assembly/disassembly of equipment.

* + 1. (a) Supervision—competent-qualified person.

(1) Assembly/disassembly must be directed by a person who meets the criteria for both a competent person and a qualified person, or by a competent person who is assisted by one or more qualified persons.

(2) Where the assembly/disassembly is being performed by only one person, that person must meet the criteria for both a competent person and a qualified person. For purposes of this standard, that person is considered the A/D director.

6.6 The procedures must complete a pre-operation hazard assessment to identify the work zone and determine if any part of the equipment could reach closer than 20 feet to a power line.

6.6.1 (a) Hazard assessments and precautions inside the work zone. Before beginning equipment operations, the employer must:

(1) Identify the work zone by either:

(a) Demarcating boundaries (such as with flags, or a device such as a range limit device or range control warning device) and prohibiting the operator from operating the equipment past those boundaries, or

(b) Defining the work zone as the area 360 degrees around the equipment, up to the equipment’s maximum working radius.

6.7 The procedures must address the measures that must be taken if determined that any part of the equipment, load line or load could get closer than 20 feet to a power line.

6.7.1 Determine 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, could get closer than 20 feet to a power line. If so, the employer must meet the requirements in Option (1), Option (2), or Option (3) of this section, as follows:

1. Option (1)—De-energize and ground. Confirm from the utility owner/ operator that the power line has been de-energized and visibly grounded at the worksite.
2. Option (2)—20 foot clearance. Ensure that no part of the equipment, load line, or load (including rigging and lifting accessories), gets closer than 20 feet to the power line by implementing the measures speci­fied in paragraph (b) of this section.

(c) Option (3)- Determine the line’s voltage and the minimum approach distance permitted under Table A (See next Page)

**TABLE A—MINIMUM CLEARANCE DISTANCES**

|  |  |
| --- | --- |
| Voltage (nominal, kV, alternating current)  | Minimum clearance distance (feet)  |
| up to 50............................. over 50 to 200.................... over 200 to 350.................. over 350 to 500.................. over 500 to 750.................. over 750 to 1,000............... over 1,000..........................  | 10 15 20 25 35 45 (as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power and distribution.)  |
| **Note:** The value that follows “to” is up to and includes that value. For example, over 50 to 200 means up to and including 200kV.  |

6.8 The procedures must address a visual inspection of the equipment will be conducted by a competent person prior to each shift or before each use.

6.8.1 A competent person must begin a visual inspection prior to each shift the equipment will be used, which must be completed before or during that shift. The inspection must consist of observation for apparent deficiencies. Taking apart equipment components and booming down is not required as part of this inspection unless the results of the visual inspection or trial opera­tion indicate that further investigation necessitating taking apart equipment components or booming down is needed.

6.9 The procedures include monthly inspections of equipment by a competent person are documented.

6.9.1 (1) Each month the equipment is in service it must be inspected in accordance with paragraph (d) of this section (each shift).

(2) Equipment must not be used until an inspection under this paragraph demonstrates that no corrective action under paragraphs (d)(2) and (3) of this section is required.

(3) Documentation.

(a)The following information must be documented and maintained by the employer that conducts the inspection:

(1) The items checked and the results of the inspection.

(2) The name and signature of the person who conducted the inspection and the date.

(b) This document must be retained for a minimum of three months.

6.10 The procedures check that all safety devices must be in proper working order before operation begins.

6.10.1 Proper operation required. Operations must not begin unless all of the devices listed in this section are in proper working order. If a device stops working properly during operations, the operator must safely stop operations. If any of the devices listed in this section are not in proper working order, the equipment must be taken out of service and operations must not resume until the device is again working properly. Alternative measures are not permitted to be used.

6.11 The procedures check that all the manufacturer procedures applicable to the operational function of equipment are followed.

6.12 The procedures check that operational procedures for the equipment be readily available in the cab at all times.

 6.12.1 Accessibility of procedures.

(1) The procedures applicable to the operation of the equipment, including rated capacities (load charts), recommended operating speeds, special hazard warn­ings, instructions, and operator’s manual, must be readily available in the cab at all times for use by the operator.

(2) Where rated capacities are available in the cab only in electronic form: In the event of a failure which makes the rated capacities inaccessible, the operator must immediately cease operations or follow safe shut-down procedures until the rated capacities (in electronic or other form) are available.

6.13 Whenever there is a concern as to safety, the operator must have the authority to stop and refuse to handle loads until a qualified person has determined that safety has been assured

6.14 A signal person must be provided in each of the following situations:

(1) The point of operation, meaning the load travel or the area near or at load placement, is not in full view of the operator.

(2) When the equipment is traveling, the view in the direc­tion of travel is obstructed.

(3) Due to site specific safety concerns, either the operator or the person handling the load determines that it is necessary.

6.15 The procedures must identify hazard areas by marking the boundaries of the crane swing radius with warning lines, railings or similar barriers.

 6.15.1. Swing radius hazards.

(1) The requirements in paragraph (a)(2) of this section apply where there are accessible areas in which the equipment’s rotating superstructure (whether perma­nently or temporarily mounted) poses a reasonably foreseeable risk of:

(a) Striking and injuring an employee; or

(b) Pinching/crushing an employee against another part of the equipment or another object.

(2) To prevent employees from entering these hazard areas, the employer must:

(a) Train each employee assigned to work on or near the equipment (‘‘authorized personnel’’) in how to recognize struck-by and pinch/crush hazard areas posed by the rotating superstructure.

(b) Erect and maintain control lines, warning lines, railings or similar barriers to mark the boundaries of the hazard areas. Exception: When the employer can demonstrate that it is neither feasible to erect such barriers on the ground nor on the equipment, the hazard areas must be clearly marked by a combina­tion of warning signs (such as ‘‘Danger—Swing/Crush Zone’’) and high visibility markings on the equipment that identify the hazard areas. In addi­tion, the employer must train each employee to understand what these markings signify.

(3) Protecting employees in the hazard area.

(a) 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.

(b) Where the operator knows that an employee went to a location covered by paragraph (a)(1) of this sec­tion, the operator must not rotate the superstructure until the operator is informed in accordance with a pre-arranged system of communication that the employee is in a safe position.

6.16 The sub-contractor is verified that operators are qualified before they are permitted to operate any crane.

6.17 Modifications or additions which affect the capacity or safe operation of the equipment are prohibited except where the below listed are completed.

(1) Manufacturer review and approval.

(a) The manufacturer approves the modifications/addi­tions in writing.

(b) The load charts, procedures, instruction manuals and instruction plates/tags/decals are modified as necessary to accord with the modification/addition.

(b) The original safety factor of the equipment is not reduced.

**RELATED DOCUMENTS**

Appendix 14A – Monthly Overhead Crane Inspection Checklist – At end of this program.

(This checklist is for WMI overhead cranes in the shop only)

Appendix 14B – Monthly Rigging Inspection Checklist – At end of this program.

**DOCUMENT MANAGEMENT:**

The Safety Director is responsible for developing and maintaining the program. Employees may review a copy of the plan by requesting one from the Safety Director. In addition, the Safety Director is responsible for maintaining any records related to the Overhead Traveling Crane Operation and Lifting Equipment Safety Program.

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If after reading this program, you find that improvements can be made, please contact the Safety Director. We encourage all suggestions because we are committed to the success of our written Overhead Traveling Crane Operation and Lifting Equipment Safety Program. We strive for clear understanding, safe behavior, and involvement from every level of the company.

**CHANGE CONTROL:**

All management system changes are reviewed, approved or disapproved by the Safety Committee.

**PERSONNEL:**

The Owners of Wagner-Meinert, LLC have the ultimate responsibility for the Overhead Traveling Crane Operation and Lifting Equipment Safety Program. They have designated the Safety Director to manage the Electrical Overhead Traveling Crane Operation and Lifting Equipment Safety Program.

| **Revision / Review History** |
| --- |
| **Revision** | **Date** | **Authorized By** | **Changes** |
| 1 | 12/15/2001 | Safety Director | Annual review |
| 1 | 12/10/2002 | Safety Director | Annual review |
| 1 | 12/11/2003 | Safety Director | Annual review |
| 1 | 12/15/2004 | Safety Director | Annual review |
| 1 | 12/10/2005 | Safety Director | Annual review |
| 1 | 12/3/2006 | Safety Director | Annual review |
| 2 | 8/18/2006 | Safety Director | Changes |
| 2 | 9/5/2007 | Safety Director | Annual review |
| 2 | 12/3/2011 | Safety Director | Annual review |
| 2 | 12/25/2011 | Safety Director | Changes |
| 3 | 10/7/2011 | Safety Director | Changes |
| 3 | 11/12/2013 | Safety Director | Annual review |
| 3 | 7/13/2016 | Safety Director | Annual review |
| 3 | 6/30/2017 | Safety Director | Annual review |
| 3 | 12/18/2018 | Safety Director | Annual review |
| 3 | 6/7/2019 | Safety Director | Annual review |
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