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Group BEE

OCCUPATIONAL SAFETY AND HEALTH (FRSB 2293)

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Occupation Safety And Health

TASK – Structure Installation for Tower

Installation of top part of Communication Tower

Requirement to carry out the works:

1. Guideline (OSHA)
2. Guideline (Employer)
3. Procedure (Employee)

GUIDELINE (OSHA):

- 1926.551(a)

Helicopter regulations. Helicopter cranes shall be expected to comply with any applicable regulations of the Federal Aviation Administration.

- 1926.551(b)

Briefing. Prior to each day's operation a briefing shall be conducted. This briefing shall set forth the plan of operation for the pilot and ground personnel.

- 1926.551(c)

Slings and tag lines. Load shall be properly slung. Tag lines shall be of a length that will not permit their being drawn up into rotors. Pressed sleeve, swedged eyes, or equivalent means shall be used for all freely suspended loads to prevent hand splices from spinning open or cable clamps from loosening.

- 1926.551(d)

Cargo hooks. All electrically operated cargo hooks shall have the electrical activating device so designed and installed as to prevent inadvertent operation. In addition, these cargo hooks shall be equipped with an emergency mechanical control for releasing the load. The hooks shall be tested prior to each day's operation to determine that the release functions properly, both electrically and mechanically.

- 1926.551(e)

Personal protective equipment.

GUIDELINE (OSHA):

- 1926.551(e)(1)

Personal protective equipment for employees receiving the load shall consist of complete eye protection and hard hats secured by chinstraps.

- 1926.551(e)(2)

Loose-fitting clothing likely to flap in the downwash, and thus be snagged on hoist line, shall not be worn.

- 1926.551(f)

Loose gear and objects. Every practical precaution shall be taken to provide for the protection of the employees from flying objects in the rotor downwash. All loose gear within 100 feet of the place of lifting the load, depositing the load, and all other areas susceptible to rotor downwash shall be secured or removed.

- 1926.551(g)

Housekeeping. Good housekeeping shall be maintained in all helicopter loading and unloading areas.

- 1926.551(h)

Operator responsibility. The helicopter operator shall be responsible for size, weight, and manner in which loads are connected to the helicopter. If, for any reason, the helicopter operator believes the lift cannot be made safely, the lift shall not be made.

GUIDELINE (OSHA):

- 1926.551(i)

Hooking and unhooking loads. When employees are required to perform work under hovering craft, a safe means of access shall be provided for employees to reach the hoist line hook and engage or disengage cargo slings. Employees shall not perform work under hovering craft except when necessary to hook or unhook loads.

- 1926.551(j)

Static charge. Static charge on the suspended load shall be dissipated with a grounding device before ground personnel touch the suspended load, or protective rubber gloves shall be worn by all ground personnel touching the suspended load.

- 1926.551(k)

Weight limitation. The weight of an external load shall not exceed the manufacturer's rating.

- 1926.551(l)

Ground lines. Hoist wires or other gear, except for pulling lines or conductors that are allowed to "pay out" from a container or roll off a reel, shall not be attached to any fixed ground structure, or allowed to foul on any fixed structure.

- 1926.551(m)

Visibility. When visibility is reduced by dust or other conditions, ground personnel shall exercise special caution to keep clear of main and stabilizing rotors. Precautions shall also be taken by the employer to eliminate as far as practical reduced visibility.

GUIDELINE (OSHA):

- 1926.551(n)

Signal systems. Signal systems between aircrew and ground personnel shall be understood and checked in advance of hoisting the load. This applies to either radio or hand signal systems. Hand signals shall be as shown in Figure N–1.

- 1926.551(o)

Approach distance. No unauthorized person shall be allowed to approach within 50 feet of the helicopter when the rotor blades are turning.

- 1926.551(p)

Approaching helicopter. Whenever approaching or leaving a helicopter with blades rotating, all employees shall remain in full view of the pilot and keep in a crouched position. Employees shall avoid the area from the cockpit or cabin rearward unless authorized by the helicopter operator to work there.

- 1926.551(q)

Personnel. Sufficient ground personnel shall be provided when required for safe helicopter loading and unloading operations.

- 1926.551(r)

Communications. There shall be constant reliable communication between the pilot, and a designated employee of the ground crew who acts as a signalman during the period of loading and unloading. This signalman shall be distinctly recognizable from other ground personnel.1926.551(s)
Fires. Open fires shall not be permitted in an area that could result in such fires being spread by the rotor downwash.

GUIDELINE (OSHA):

- REFERENCES
  1. 1-The Factories & Machinery Act 1967. 2-The Factories & Machinery (Building Operations & Works of Engineering Construction) (Safety) Regulations 1986 3-The Occupational Safety And Health Act 1994 4-The Occupational Safety And Health (Safety and Health Officer) Regulations 1997 5-The Occupational Safety And Health (Safety and Health Officer) Order 1997 6-The Occupational Safety And Health (Safety and Health Committee) Regulations 1996 7-Safety, Health and Welfare on Construction Sites A Training Manual, International Labour Office
  2. OSHA – Safety and Healty Regulation for Construction – Standard Number 1926.551 -

Procedure (Employer):

1) JHA – Job Hazard Analyze
- Crash
- Falling Down (Material/Equipment/Worker) – Working at Height
- Sling Belt/Chain/Wire cut/broken

2) JSA – Job Safety Analyze
- Method of Lifting
- Loading Weight
- Hoisting Machine/Equipment
- Lifting Gear
- Weather
- Manpower

3) HIRAC – Hazard Identification, Risk Assessment and Control
- Identify JHA
- Level of Risk
- Counter Measure

HIRAC

Hazard Identification		Risk Assessment		Risk Control
Work Activity	Potential Hazard	Causes/Effect	Existing Risk Control Measure	Additional Risk Control Measure
Structure hoisting using helicopter	Helicopter crash	1) Lost of Properties 2) Physical Injury 3) Fatality	1) Ensure signalman, rigger and pilot shall be competent person. 3) Ensure the helicopter is inspected and in safe working condition	1) Provide training. 2) Ensure not to exceed helicopter SWL 2.Ensure good communication between pilot and signalman
	Slinging broken/cut	1) Lost of Properties 2) Physical Injury 3) Fatality	1) Ensure the slinging is inspected and in good working condition without any sign damage.	1) Full Supervision the activity by Supervision
	Bad weather condition : A) Heavy rain B) Strong wind C) Lightning & thunder	1) Lost of Properties 2) Physical Injury 3) Fatality	1) To immediately stopped the lifting activity if the weather condition is bad. 2) To be on standby and wait further instruction from the Person In charge. 3) If have to evacuate the work area, proceed with sequence & caution	1) To barricade the working area. 2) To brief all workers before start work. 3) To make sure have sufficient manpower.
Structure installation	Fallen of material	Physical injury & lost of properties	1) Ensure all lifting gears and appliances are in safe working condition. 2) Ensure that the equipment is properly secure before start the lifting activity. 3) Ensure that there is no workers nearby suspended load.	1) Full Supervision the activity by Supervision 2) Use puling rope to manage the structure moving during hoisting and installation.

HIRAC

Hazard Identification		Risk Assessment		Risk Control
Work Activity	Potential Hazard	Causes/Effect	Existing Risk Control Measure	Additional Risk Control Measure
Working at Height	Fallen from height	1) Physical Injury 2) Fatality	1) Ensure all workers to wear safety harness and must 100% tie-off to safety place. 2) Adequate and well planning for manpower arrangement for work at height place. 3) Workers need to full observe and alert all the time while working at height place.	1) Harness require double hook. 2) Ensure surrounding structure are safe place. 3) Worker's health must be chack

4) Company to invite specialist to conduct training
5) Company to provide proper facilities and machinery suit to the lifting and structure fitting activities
6) Proper P.P.E shall provided to the installer/worker.

Procedure (Employee):

1) Must wear P.P.E with chain strip apply for safety helmet.
2) Wear Safety Harness with double hook.
3) Wear Leather or thick rubber gloves
4) Comply to JHA and HIRAC requirements.
5) Follow superior instruction.
6) Worker's health must be check

Thank you

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By GROUP BEE