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Brunel Energy, Inc.

Ladder Safety

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1. Purpose

- 1.1. Brunel Energy, Inc., hereinafter referred to as, “the Company,” has established a Ladder Safety Program compliant with OSHA’s standards for the safe use and storage of ladders.

2. Applicability

- 2.1. This policy applies to employees, subcontractors and/or visitor(s) of the Company. For the purposes of this policy, an employee shall be considered on the job whenever he/she is:
 - 2.1.1. On or in, any Company or client property, including parking areas; or
 - 2.1.2. On Company time even if off Company premises (including paid lunch, rest periods and periods of being on call).
- 2.2. As a condition of employment, Company employees are required to abide by additional governmental or customer policies and requirements that may be imposed at a worksite in addition to the requirements of these policies and procedures. Nothing set forth in this policy constitutes, construes, or interprets in any way as a contract of employment.
- 2.3. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers the Company employees and contractors and shall be used on owned premises, or when an operator's program does not exist or is less stringent.

3. Definitions

- 3.1. **Portable ladder** is defined as a ladder that can be moved or carried usually consisting of two side rails joined at regular intervals by steps, rungs, or cleats, on which a person may step in ascending or descending.
- 3.2. **Stepladder** is defined as a self-supporting portable ladder, nonadjustable in length, having flat steps and a hinged back. Its size is designated by the overall length of the ladder measured along the front edge of the side rails.
- 3.3. **Single ladder** is defined as a non-self-supporting portable ladder, nonadjustable in length, consisting of but one section. The overall length of the side rail designates its size.
- 3.4. **Extension ladder** is defined as a non-self-supporting portable ladder adjustable in length. It consists of two or more sections traveling in guides or brackets so arranged as to permit length adjustment. Its size is designated by the sum of the lengths of the sections measured along the side rails.
- 3.5. **Fixed ladder** is defined as a ladder permanently attached to a structure, building, or equipment.
- 3.6. **Individual-rung ladder** is defined by a fixed ladder each rung of which is individually attached to a structure, building, or equipment.

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- 3.7. **Cage** is defined as a guard that may be referred to as a cage or basket guard, which is an enclosure that is fastened to the side rails of the fixed ladder or to the structure to encircle the climbing space of the ladder for the safety of the person who must climb the ladder.

4. Responsibilities

4.1. Management shall:

- 4.1.1. Ensure that adequate funds are available and budgeted for the purchase of ladders in their areas.
- 4.1.2. Obtain and coordinate the required training for the affected employees.
- 4.1.3. Ensure compliance with this safety policy and procedure through their auditing process.

4.2. HSE Supervisor(s) shall:

- 4.2.1. Ensure that all ladders (fixed and portable) are regularly inspected and properly maintained.
- 4.2.2. Tag ladders in need of repair and remove defected ladders from service for repair or destruction.
- 4.2.3. Audit for compliance with this safety policy and procedure during their facility and jobsite audits.

4.3. HSE and Loss Control shall:

- 4.3.1. Provide prompt assistance to managers, supervisors, or others as applicable on any matter concerning this safety policy and procedure.
- 4.3.2. Assist in developing or securing required training.
- 4.3.3. Provide consultative and audit assistance to ensure effective implementation of this safety policy and procedure.
- 4.3.4. Coordinate with the Purchasing Department to ensure that all newly purchased ladders comply with this safety policy and procedure and current safety regulations.

4.4. Employee(s) shall:

- 4.4.1. Comply with all applicable guidelines contained in this safety policy and procedure.
- 4.4.2. Immediately report suspected unsafe conditions or ladders to their supervisor.
- 4.4.3. Inspect ladders before using and keep ladders clean and in good condition.

5. Ladder Hazards

5.1. There are inherent hazards associated with ladder use. Typical ladder hazards include:

- 5.1.1. Insufficient surface resistance on ladder rungs and steps.
- 5.1.2. Ladder structural failure or using deteriorated ladders.

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- 5.1.3. Ladders tipping sideways, backwards, or slipping out at the bottom.
- 5.1.4. Ladder spreaders not fully opened and locked, causing the ladder to “walk,” twist or close when a load is applied to the ladder.
- 5.1.5. Using metal ladders around electricity.
- 5.1.6. Using fixed ladders without cages or fall protection.

6. Procedure

6.1. Inspection

- 6.1.1. Ladders shall be inspected by a competent person for visible defects before initial use in each work shift, and more frequently, as necessary, to identify any visible defects that could cause employee injury.
- 6.1.2. Ladder rungs must be uniformly spaced or meet OSHA/ANSI specifications. Ladder rungs, steps, and cleats must be parallel, level, and uniformly spaced when the ladder is in position for use. The ladder rungs must meet all spacing and clear width/distance requirements, be shaped such that employees' feet cannot slide off the end of the rung, and be corrugated, knurled, dimpled, coated with skid-resistant material, or otherwise treated to minimize slipping.
- 6.1.3. Portable and fixed ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps, broken or split rails, corroded components, or other faulty or defective components, shall either be immediately marked in a manner that readily identifies them as defective, or be tagged with "Dangerous: Do Not Use" or similar language, and shall be withdrawn from service until repaired.
- 6.1.4. If a ladder is tipped over, it shall be inspected by a competent person for side rail dents or bends, or excessively dented rungs; check all rung to side rail connections; check hardware connections; check rivets for shears.
- 6.1.5. All wood parts shall be free from sharp edges and splinters; sound and free from accepted visual inspection from shake, or other irregularities.

6.2. Care

- 6.2.1. Ladders shall always be maintained in good condition, the joint between the steps and side rails shall be tight, all hardware and fittings securely attached, and the movable parts shall operate freely without binding or undue play.
- 6.2.2. Metal bearings of locks, wheels, pulleys, etc., shall be frequently lubricated.
- 6.2.3. Frayed or badly worn rope shall be replaced. Safety feet and other auxiliary equipment shall be kept in good condition to ensure proper performance.
- 6.2.4. Rungs shall be kept free of grease and oil.
- 6.2.5. Ladders shall be stored in a well-ventilated area in a manner to prevent sagging and warping.

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6.3. Ladder Safe Work Practices

- 6.3.1. Defective ladders will not be used.
- 6.3.2. Ladders shall be used only for the intended purpose for which they were designed.
- 6.3.3. The ladder shall be secured at the top.
- 6.3.4. Ladders are used only on stable and level surfaces unless they are secured or stabilized to prevent accidental displacement.
- 6.3.5. Extension ladders shall be placed at a 4:1 ratio. Ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder (the distance along the ladder between the foot and the top support).
- 6.3.6. Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height.
- 6.3.7. Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.
- 6.3.8. Ladders shall not be used by more than one person at a time.
- 6.3.9. Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded.
- 6.3.10. If a ladder is used in a high traffic area, barricades shall be placed to avoid accidental displacement due to collisions.
- 6.3.11. Do not stand on the top two rungs or top of step ladders.
- 6.3.12. The employee shall face the ladder while ascending or descending.
- 6.3.13. The bracing on the back legs of stepladders is designed solely for increasing stability and not for climbing.
- 6.3.14. The ladder shall not be moved while occupied.
- 6.3.15. On two-section extension ladders the minimum overlap for the two sections in use shall be as follows:

Size of Ladder (feet)	Overlap (feet)
Up to and including 36'	3
Over 36 up to and including 48'	4
Over 48 up to and including 60'	5

- 6.3.16. Portable ladders shall extend a minimum of 3 feet above the top of upper landing surface. The ladder side rails shall extend at least 3 feet (.9m) above the upper landing surface. When ladders are not able to be extended then the ladder shall be secured at its top to a rigid support that will not deflect.

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6.3.17. The employee shall always maintain a three (3)-point grip on the ladder and carry tools/equipment on a belt or hoist up. Do not carry anything in your hands that could cause loss of balance and possibly injury in case of fall.






6.4. Portable Ladders

6.4.1. Stepladders shall not be longer than 20 feet. Single ladders shall not be longer than 30 feet.

6.4.2. A two-section extension ladder shall not be longer than 60 feet. All ladders of this type shall consist of two sections, one to fit within the side rails of the other and arranged in such a manner that the upper section can be raised and lowered. Extension ladders should be placed against the top support at a 4:1 incline.

6.4.3. Keep all ladders at least ten (10) feet away from power lines.

6.4.4. Ladders shall have the correct load capacity for the task and not be loaded beyond the maximum intended load for which they were built nor in excess of the manufacturer's rated capacity. The manufacturer's load limits shall not be exceeded. Weight includes the combined weight of the climber and his tools/equipment. Ladders are rated as the following:

Type:	1 - AA	1 - A	1	2	3
Load Capacity:	375 pounds	300 pounds	250 pounds	225 pounds	200 pounds
Related Use:	Special Duty Professional	Extra Heavy Duty Industrial	Heavy Duty Industrial	Medium Duty Commercial	Light Duty Household
					

6.5. Fixed Metal Ladders

6.5.1. Ladders shall be constructed to withstand a minimum of 200 pounds.

6.5.2. All metal rungs shall have a minimum diameter of 3/4 inches and wooden rungs shall have a minimum diameter of 1 1/8 inches.

6.5.3. Rungs shall not be more than 12 inches apart and shall be uniform throughout the length of the ladder.

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- 6.5.4. Rungs shall be a minimum length of 16 inches and provide protection so a foot cannot slip off the end.
- 6.5.5. Rungs shall have a minimum of 7 inches between it and the structure behind it.
- 6.5.6. A fall restraint system must be provided for all fixed ladders greater than six feet in length.
- 6.5.7. A Cage is required when the fixed ladder is at least twenty feet tall.
- 6.5.8. Cages on fixed ladders shall not begin at a point less than 7 feet nor greater than 8 feet from the walking surface below the cage.
- 6.5.9. Cages shall provide a clear width of 15 inches in each direction of the rung's centerline.
- 6.5.10. Cages shall not extend less than 27 inches, but not greater than 28 inches from the centerline of the rung.
- 6.5.11. A climbing fall restraint system may be substituted for a ladder cage.

7. Training

- 7.1. Ladder safety training shall be done upon initial employment and/or job assignment. Refresher training shall be provided on an annual basis. Employees using ladders shall be trained in:
 - 7.1.1. The nature of fall hazards in the work area.
 - 7.1.2. The correct procedures for erecting, maintaining, and disassembling the fall protection systems to be used.
 - 7.1.3. The proper construction, use, placement, and care in handling of all stairways and ladders.
 - 7.1.4. The maximum intended load-carrying capacities of ladders.
 - 7.1.5. Retraining shall be provided for each employee as necessary so that the employee maintains the understanding and knowledge acquired through compliance with this section.

8. Recordkeeping

- 8.1. All ladder inspections shall be documented using the Ladder Inspection Form and a copy sent to the HSE department.

9. Appendix

- 9.1. Ladder Inspection Form

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10. Reference

- 10.1. [55 FR 47689, Nov. 14, 1990; 56 FR 2585, Jan. 23, 1991; 56 FR 41794, Aug. 23, 1991].
- 10.2. [55 FR 47691, Nov. 14, 1990].
- 10.3. OSHA 1926.1053 – Ladders.
- 10.4. OSHA 1926.1060 – Training Requirements.
- 10.5. Cal/OSHA T8 CCR 3277

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Brunel Energy, Inc. Ladder Inspection Form

Department:		Date of Inspection:	
Inspected By:			
Building or Zone Location:			
INSPECTION ITEMS	Condition OK	Needs Repair	N/A
STEP LADDERS			
Manufacturer's labels present and legible			
Wobble (from side strain)			
Damaged or worn non-slip bases			
Cracked, split or broken braces, rungs, or steps			
Rungs or steps are free of obstacles, grease, oil, or dirt			
Rungs or steps are slip resistant (knurled, corrugated)			
Loose or bent hinge spreaders			
Broken stop on hinge spreaders			
EXTENSION LADDERS			
Manufacturer's labels present and legible			
Damaged or worn ladder feet			
Cracked, split, or broken braces, or rungs, or uprights			
Rungs or steps are free of grease, oil, dirt, and slip resistant			
Loose, broken, or missing extension locks			
Defective locks that do not seat properly when ladder is extended			
Frayed or worn rope			
FIXED LADDERS			
Loose rungs, steps, nails, screws, or other metal parts (loose if they can be moved by hand)			
Cracked, split or broken uprights, braces, rungs, or steps			
Damaged or worn non-slip bases			
Rungs/steps missing			

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PORTABLE WHEELED LADDERS			
Broken stop on wheel			
Cracked, split or broken rails, braces, rungs, or steps			
Loose rungs or steps, nails, screws, bolts, or other parts			
Broken wheel(s)			