

LARGE FILING SEPARATOR SHEET

CASE NUMBER *11-5542-EL-BGA*
11-5543-EL-BGA

FILE DATE *1/31/2012*

SECTION: *3 of 4*

NUMBER OF PAGES: *201*

DESCRIPTION OF DOCUMENT: *Confidential Release*

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	Section III RPSHSE 7.1.9A	Valid from: November 2008
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Section III
7.1.9A – RPSHSE – 9A
Emergency Action Plan

Form 8 – Emergency Service



Section III
RPSHSE 7.1.9A

Valid from: November 2008

ON-SITE FACILITY EMERGENCY SERVICE POSTING

EMERGENCY SERVICE

HOSPITAL:	
AMBULANCE:	
FIRE DEPT.:	

Contact the following REPOWER USA personnel immediately:

HEAD OF SERVICE/OPERATIONS MANAGER:	
NAME: _____	TELEPHONE: _____
ON-SITE FIELD SUPERVISOR:	
NAME: _____	TELEPHONE: _____
HSE DEPARTMENT:	
NAME: _____	TELEPHONE: _____

Contact the following personnel immediately:

LANDOWNER:	
NAME: _____	TELEPHONE: _____
SHERIFF DEPARTMENT:	
NAME: _____	TELEPHONE: _____
STATE POLICE:	
NAME: _____	TELEPHONE: _____

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Section III Forms & Information

Valid from: November 2008

Section III:

7.1.9B RPSHSE – 9B

Naturally Occurring Radioactive Material (NORM)

NO FORMS APPLICABLE

LEFT BLANK FOR FUTURE
INSERTATION AS
APPLICABLE

TRAINING WILL ADDRESS THIS GROUP



Section III RPSHSE 7.1.10

Valid from: November 2008

Revision Profile

Rev.	Date	Name	Approval Signature	Remarks
0	11/08	Owens O'Quinn QHSSE Consultant	On File	ORIGINAL
0	11/08	Tammy Conekin	On File	ORIGINAL
1				
2				
3				
4				
5				

Original Review Progress

Date	Reviewer	Signature
11/08	J.K. Barrilleaux – Grammar/Technical Format <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Owens O'Quinn – QHSSE Consultant <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Tammy Conekin – Head of Service	On File



Section III: 7.1.10 RPSHSE – 10
Hand and Portable Power Tools**Contents**

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1.0 Introduction

REPOWER USA policy on hand tools, mechanical tools and equipment is for the protection of personnel in their widespread uses in all operations. Their misuse or abuse can result in severe injuries. Most accidents, which commonly occur each year, can be attributed to the improper or unsafe use of tools that are in bad condition. The following **REPOWER USA** HSE Policies and Procedures are designed to give HSE tips and recommendations for the safe use of hand tools and portable power tools.

2.0 Principles of Tool Safety and General Rules

2.1 Select the Right Tool for the Job

The correct tool will make a job easier and proceed faster. Locate and use the proper tool, rather than making do with what you have, and your work will be safer and more efficient.

- Hammers and mauls are striking tools
- Wrenches are torsion tools
- Screwdrivers are for turning fasteners
- Files are for removing metal
- Chisels and knives are cutting tools

2.2 Keep Tools in Good Condition

The failure of tools and mechanical equipment usually occurs when the greatest stress is being placed on it. This is especially true when the tools and equipment are in poor condition because their chances of failure increase. This is when the greatest potential for injury is present.

2.3 Use Tools and Equipment Correctly

Examples of unsafe practices are:

- Screwdrivers forcibly applied to objects held in the hand.
- Knives pulled toward the body.
- Failure to ground electrical equipment and the failure to lock out machinery or equipment when preventative maintenance or repairs are being performed.

2.4 Keep Tools in Proper Place

- Accidents happen when tools fall from overhead or are left underfoot. Sharp tools carried in pockets or left in the toolbox with the sharp edges exposed also cause accidents.
- Store tools and equipment in a centralized or specified area. This will also make it easier to conduct regular uniform inspections and maintenance. When tools are found to be in a bad condition properly mark or tag them and remove them from service until repaired.
- All employees who are issued tools are responsible for inspecting, properly storing, and maintaining them. **Unsafe tools will not be used by employees.**

2.5 General Precautions

- Never leave machine-operated tools and equipment running unattended.
- **DO NOT** use tools and equipment which can produce sparks, slivers, flying metal or wood, noise, abrasion, or other byproducts that can cause injuries unless the appropriate personal protection equipment is worn (i.e.: goggles, gloves, shields, ear plugs, etc.).
- When using tools and equipment always be aware of other workers in the area. If necessary, alert them to prevent exposure to a hazard.
- Keep tools clean and inspect them before use.
- Never use excessive pressure or force on any hand tool.
- Tools should never be dropped or thrown from person to person.
- Tools that must be raised or lowered from one elevation to another shall be placed in a tool bucket or firmly attached to a hand line. Never lower power tools by the electrical cord.
- Wear gloves when using hammers, pliers, and wrenches to avoid hand and finger injuries.

3.0 Hand Tools

3.1 General

- Hand tools, which are not power-driven, can cause injuries if improperly used. Hand tools designed for a particular purpose should only be used for that purpose. Inspect all tools regularly and keep them in a clean, safe condition.
- Never throw tools from one person to another especially from one level to another. Carry the tools or send them up or down in a suitable container or on a line after alerting other employees in the work area.
- Keep hands free from oil and grease to prevent slippage when using hand tools.
- After cleaning the tools with an approved cleaning solvent, wash your hands with water or another suitable hand cleaner.
- Do not climb ladders with tools in hand or tools sticking out of pockets.
- Be especially careful not to drop or knock tools off platforms.
- Avoid working in places where tools are being used overhead.
- When setting tools down, make certain they are in a safe place where they will not be jarred or knocked from an elevated level and where they will not create a stumbling hazard.
- Keep tools in an assigned place on a tool board or workbench so they will be readily accessible when needed.
- Regularly inspect the driving faces of hammers, chisels, drift pins, wedges, bars, and other impact tools. Keep them free from mushroomed heads, burrs, broken faces and other defects.

- Never strike a tool with a hardened surface against another such tool in combustible or flammable areas.
- Only nonferrous tools (non-sparking) are permitted:
 - Inside a confined space where the flammable vapors are above 10% of the Lower Explosive Level (LEL)
 - When removing covers from a confined space which is not known to contain an atmosphere below 10% the of Lower Explosive Level (LEL)
- Keep chisels, draw-knives, hatchets, axes, picks, saws, etc., sharp for safety as well as for efficiency.
- Take extra care when using and storing sharpened tools.
- Store crowbars, chain tongs, large wrenches, shovels, rakes, hoes, etc., in proper racks.
- Remove handles from all types of hydraulic or mechanical jacks when they are not in use.
- To prevent hand injuries, use safety holders on hammer wrenches, chisels, punches, rods, posts, and like objects when they are being struck.
- **DO NOT** use files without handles.
- Use wood handles that are solid, free of splinters, and securely wedged or fastened to the tool. Discard cracked or split handles.
- **DO NOT** use hammers to break pipe or rod connections. If the job requires breaking a pipe or rod, use caution and wear eye protection.
- Never use a screwdriver forcibly on a small object held in your hand. Never use a screwdriver in such a way that it can strike any part of the body if it slips.
- Never hold small tools, screws, nails, tacks, etc., in the mouth.
- Discard nonadjustable wrenches or other tools which become worn or sprung and no longer operate properly. Straightening or building up the jaws, mouth or socket is prohibited.
- If the replaceable jaws on adjustable wrenches become worn, replace them. If the worn jaws are not replaceable or if they are sprung, discard the tool.
- Keep the handgrip on a tool in good condition so that fingers, hands, and arms will not be injured if the tool slips or falls.
- Never use the feet to apply pressure to a wrench handle or a valve handle.
- **DO NOT** use the wrenches as extensions on valve wheels; use the valve wrenches designed for the job.
- **DO NOT** use extension handles (other than the one designed for the tool) or "**cheater bars**" unless necessary. Striking wrenches and impact tools are available for the high-torque requirements.
- Never use wrenches as hammers; strike on "**hammer wrenches**" with a hammer or maul.

- Never separate flanges with a hammer. Always use a wedge or flange spreader.
- Keep the bolts on weed cutters tight to make the blade secure.
- When work requires several employees to use shovels, picks, etc., maintain a safe working distance between personnel.

3.2 Guidelines for Using Pointed Tools

- Always cut away from the body when using a knife.
- The work material should be in a rack or holder.
- Carry a knife in a sheath. Carry the sheath over the left or right hip in the back. This is the safest place for a knife in case of a fall.
- Store pointed tools safely so that the point or cutting edges are covered.

4.0 Striking Tools

4.1 General

General information and rules for using striking tools include the following

- Always wear safety goggles or glasses.
- Striking tools, such as chisels, punches, etc., are designed to direct the force of the blows toward the center of the tool.
- Off-center blows are not directed toward the center of the tool but down the side. Instead of a cushioning action, a shearing force is achieved. This shearing effect is a hazardous condition that causes small metal chips.
- Keep the cutting edges ground and honed sharp for the best efficiency. A dull edge on a cutting tool results in reduced cutting ability and may cause you to exert extra force when using the tool. Thus possibly causing tool failure, metal pieces flying in unexpected directions, or slippage.
- Use a hammer or mallet with a striking face sufficiently larger than the struck tool. It should be, at a minimum, 3/8-inch larger than the struck face.
- Never strike a steel chisel with a nail hammer.
- Strike blows squarely and away from you.
- Redress striking tools that are chipped or have slanted points.
- Grind off mushroom heads and burrs on striking tools; the mushroom or burr can sliver off when struck.
- Always use the proper tool for the job; never use a wood chisel on concrete or masonry.
- Use only striking tools that are in good condition.
- **DO NOT** use a motorized grinder to sharpen cutting tools such as knives, hatchets, axes, wood chisels, etc. This type of grinder may destroy the edge holding ability of heat-treated steel. Use a honing stone for sharpening such tools.

4.2 Hammers

General rules for safe hammer use include:

- Always wear safety goggles or glasses when hammering or striking.
- Never use a hammer for an undesignated purpose.
- Strike blows squarely; glancing blows increase the chances of striking a finger or shearing a chip off the hammerhead.
- Never strike one hammer with another hammer; shearing and flying chips could occur.
- Always check behind you before swinging a striking tool.
- Keep eye contact with the tool or surface to be struck.
- Never use a hammer with a loose or damaged handle.

5.0 Torsion Tools**5.1 Wrenches and Pliers**

General information and rules for using torsion tools include the following

- Always use the tools designated for the job.
- Avoid using cheaters to increase the advantage; use a striking wrench or an impact tool.
- Use a wrench with an opening that fits the nut exactly; use inch wrenches for inch nuts and metric wrenches for metric nuts.
- Whenever possible, pull on the wrench handle and always adjust your stance to avoid an off-balance fall.
- Box and socket wrenches are the safest types of wrenches to use.
- Exposing a wrench to excessive heat can damage the temper and weaken the tool.
- Inspect the wrenches periodically and repair or discard them as necessary.
- **DO NOT** change the shape of wrenches by grinding.
- Discard any wrench with spread, nicked, or battered jaws.
- Tools with high dielectric properties are available and thus identified. Remember that the plastic-dipped handles are meant for comfort, not electrical protection.

5.2 Torsion Tools

- Never use hand sockets on power or impact wrenches.
- Always stay within the safe torque limits when using an adapter; adapt down by using a large handle with a small socket.
- When it is necessary to repair a tool use the manufacturer's instructions and parts.
- Discard sockets with cracked walls, breaks or battered points.

5.3 Wrenches

- **DO NOT** use an open-end wrench to free "**frozen**" nuts or attempt to torque nuts. Box wrenches are stronger and safer.
- **DO NOT** use hammers on an open-end wrench.

- **DO NOT** use extensions on the handle.
 - Discard wrenches when jaws are nicked, spread or battered or when the handle is bent.
- 5.4 Adjustable Wrenches**
- For electrical work, use dielectric tools (plastic dipped handles are for comfort, not insulation).
 - Adjust the jaws tightly around the nut.
 - Work so that the force or torque is applied to the fixed jaw.
 - **DO NOT** use an adjustable wrench on a “frozen” nut.
 - Repair according to manufacturer's instructions.
- 5.5 Torque Wrenches**
- Make sure the proper torque is being applied: a slipping torque wrench can be dangerous.
 - Check the torque calibration periodically to avoid dangerous slips.
 - Check the manufacturer's instructions for repair or replacement.
- 5.6 Pipe Wrenches**
- Work so the force or torque is applied to the fixed jaw.
 - Never use the wrench to bend, raise, or lift a pipe.
 - Never use an extension or “cheater” on a pipe wrench handle.
 - Never use a pipe wrench as a hammer.
 - Inspect periodically for worn or unsafe parts and repair or discard if necessary.
- 5.7 Locking Wrenches (“Vise-Grip” type tools)**
- **DO NOT** hammer to tighten the jaws or to cut wires or bolts.
 - **DO NOT** expose them to heat from welding torches or let them be exposed to welding electrodes.
 - When a wrench is exposed to severe vibration, during riveting for example, wire or tape the wrench closed.
 - **DO NOT** use pipe, other “cheaters”, or hammering to increase the torque.
 - **DO NOT** use steps or ladders to support personnel.
 - Lubricate the locking wrenches frequently.
 - Repairs are not recommended; discard a damaged tool.
- 5.8 Pliers**
- Always wear safety goggles or glasses when cutting wire.
 - **DO NOT** use pliers for cutting hardened wire unless they were specifically made for that purpose.
 - **DO NOT** expose pliers to excessive heat.
 - **DO NOT** bend stiff wire with light pliers use a sturdier tool.
 - Use pliers correctly, never use them as a striking or struck tool.

5.9 Screwdrivers

- Use the right screwdriver for the job; a bit that is the wrong size or shape for the screw slot can slip and gouge the hand.
- Check the tool for a broken handle, bent blade, or damaged tip and repair or replace it as necessary.
- **DO NOT** use the screwdrivers as pries, punches, wedges or pinch bars.
- A sharp, square-edged bit will not slip as easily as a dull, rounded bit.
- Use Phillips, Allen head, etc., fasteners when possible; they are less likely to slip than slotted fasteners.
- Use a ratchet driver on large jobs; the job will go faster with less exposure to injury.
- Use only insulated tools when doing electrical work. Remember plastic-dipped handles are for comfort, not insulation.
- **DO NOT** expose blades to excessive heat. Heat will damage the temper and weaken the tool.
- Never use a screwdriver to check if an electrical circuit is live.
- **DO NOT** use pliers or a wrench on the driver for more advantage unless the driver is designed for that purpose.
- Keep handles free from grease and other slippery material.

6.0 Guarding Mechanical Equipment

One or more of the following methods must be used to properly guard all flywheels, which have any parts that are seven feet or less from floor level:

- By an enclosure of sheet, perforated or expanded metal or cyclone fencing or woven wire.
- By a guardrail placed not less than 15 inches nor more than 20 inches from the rim of the flywheel and a toe board if the flywheel extends into a pit or is within 12 inches of the floor.
- If the flywheel is less than five feet in diameter it should be protected by a smooth disc attached to the rim of the flywheel, completely enclosing the spokes, shaft and key-way.
- All guardrails must be made of materials and anchored to withstand a 200-pound load in any direction.
- The following must be protected by appropriate safety guards:
 - All gears, sprockets, couplings, clutch, exposed shafts, setscrews, key-ways, etc.
 - All V-belt drives
 - All fan blades within seven feet of the floor
- Securely fasten protective guards to the machine or to the floor.
- Before guards are removed, machines must be shut down, stopped, and locked out. If it is necessary to lubricate the machinery when it is in motion provide extension oilers and grease gun connections.

- Locate them away from the moving parts or any other hazardous areas.
- Employees involved in lubricating operations must be provided with long, flexible spout oilcans and grease guns with proper attachments. They should know how to use these tools properly.
- Never reach over or under guardrails or lean, sit, or work on the guards while the machinery or equipment is in operation.
- Paint the guards a bright yellow or mark them so employees can easily identify the potential hazards that could exist if the guards were removed. Do not use the same unique markings on other objects or structures near the guards.

7.0 Power Driven Tools

All belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains or other reciprocating, rotating or moving parts of equipment must be properly guarded.

- Keep all machine guards in good condition. Fasten the appropriate guards in place.
- Never operate tools or machines unless the guards are in place.
- Learn the whole machine and its capabilities and its limitations. Study auxiliary tools and devices carefully. Perform only the jobs a machine is supposed to do.
- Inspect machines before using them: First, do a visual inspection then a "dry run".
- Shut off all the machines when the operator leaves.
- Use a brush, not compressed air, to remove chips.
- Only those persons familiar with their operation and aware of the safety hazards should use power-driven tools.
- Never perform maintenance or repair work on a machine until all the switches have been tagged and locked out.
- In addition to the electrical controls supplied by the manufacturer each machine should have an additional disconnect switch to remove the motor from the power supply.
- Provide mechanical lifting equipment for positioning heavy material on machines.
- Regardless of the work pressure, working on an **unsafe** machine or doing unsafe work on a good machine is not permitted.
- Defective equipment is to be Danger-tagged "**DO NOT USE**" or "**DO NOT OPERATE**".
- Respect the point of operation of the machine; keep guards in place.

8.0 Electrically Driven Hand Tools

All electric portable tools must be equipped with a grounded three-conductor cord and a polarized plug and receptacle or they must be doubly insulated and approved by Underwriter's Laboratories (UL Listed).

- Never use electric cords for hoisting or lowering tools.

- Repair or replace electric cords if the terminals become loose or the insulation is cracked or broken.
- Use only explosion-proof electric tools in gas-hazardous areas.
- Equip all portable power-driven circular saws with guards above and below the base-plate or shoe. After the cut is made the lower guard automatically and instantly returns to the covering position.

9.0 Belts and Belt Driven Equipment

9.1 HSE Guidelines

- All belt guards must be securely fastened in place before a unit is put in operation.
- **DO NOT** kick the belts on or off while the machinery is in motion.
- Fan blades and belts on an engine must be guarded when the unit is running.
- Never reach, step, or lean over an unguarded belt that is in motion.

9.1.1 Static Proof Belts

There are a number of so-called static-proof or static-conductive belts on the market. The majority of these belts are termed static-proof because they are made of a rubber or neoprene material which has been impregnated with a conductor such as granulated carbon. A current path is provided to drain off an electric charge before it reaches an arc-over potential. However, the conductivity of these belts decreases with age.

As the belts age, their operation will reach a point where the static-proof qualities are no better than those of a standard belt. In addition, the static-proof qualities of this type of belt could be destroyed by the formation of an oil film or some other insulating barrier on the belt or sheave surface. Static-proof belts are not positive insurance against an ignition caused by static electricity.

- **The following recommendations are offered for the application to belt-driven equipment:**
 - Use direct and/or gear-driven equipment in hazardous locations when it is economically and mechanically practical.
 - Locate the belt-driven equipment out-of-doors in a well-ventilated area that is free from an explosive mixture of gas under normal conditions.
 - Inspect static-proof belt drives regularly and replace them when they show signs of deterioration, excessive wear, or the formation of an oil film on the sheave or belt surface. Ask the supplier to specify the normal static-proof life of the belt. Use this factor to determine the belt replacement schedule.

- If journal bearings are used, ground the shaft to the frame with a wiper or brush. In addition, all members of the drive system must be electrically bonded to each other and to a positive earthen ground either through the frame of the drive system or ground cables.

10.0 Abrasive Grinders

10.1 General

- Use abrasive wheels only on machines provided with the proper safe guards.
- The safety guard must cover the spindle end, nut, and flange projections.
Material for guards must comply as follows:
 - Operating speed of 8,000 surface feet per minute or less and made of cast iron or malleable iron.
 - Operating speed of 8,000 surface feet per minutes and made of cast steel or structural steel.
- Work rests (tool rests) and tongue guards must be provided and designed to be adjustable. Keep the work rests adjusted to within 1/8-inch of the wheel. Adjust the tongue guards to within 1/4-inch of the wheel.
- On bench and floor-stand grinders the angular exposure of the grinding wheel periphery and the sides of the safety guards must not exceed 90-degrees or one fourth of the periphery. This exposure must begin at a point not more than 65° F above the horizontal plane of the wheel spindle.
- On cylindrical grinders the maximum angular exposure of the grinding wheel periphery and the sides of the safety guards must not exceed 180° F. This exposure must begin at a point not more than 65° F above the horizontal plane of the wheel spindle.
- On surface grinders and cut-off machines the maximum angular exposure of the grinding wheel periphery and the sides of the safety guards must not exceed 150° F. This exposure must begin at a point not less than 15° F below the horizontal plane of the wheel spindle.
- All abrasive wheels must be mounted between flanges that should be no less than one-half the diameter of the wheel.
- Blotters (compressible washers) must always be used between flanges and wheel surfaces to ensure the uniform distribution of flange pressure.
- Do not use soft materials (aluminum, etc.) on a grinding wheel. The materials cake the wheel surface and cause heat buildup in the wheel.
- To grind items smaller than 1-1/2 inches, hold them with a tool, not the bare hand.
- Never use grinding wheels, cut-off wheels, circular saws, and other arbor or chuck-mounted tools in excess of their manufacturer-rated speed.

- In operating grinding tools never force work against a cold wheel. Apply it gradually, giving the wheel time to warm. Never operate a grinder on which the grinding wheel is loose on the spindle or is out of balance.

When using wire brush wheels:

- Work pieces should be held at the horizontal center of the brush.
- Let the wire tips do the work. Forcing work into the brush results in:
 - No increase in the cutting action
 - An increase in wire breakage
 - A tendency for the work to become snagged
 - Small pieces of the work should be held in a simple jig or fixture to protect the operator's hands from contacting the surface of brush.
 - A straight, heavy steel rod or bar should be used to clean wire wheels.

10.2 Inspection

- Immediately before mounting, closely inspect all wheels and perform a “ring test”. The wheel should have a clear bell-like ring when tapped with a nonmetallic instrument. Organic bonded wheels do not emit this metallic ring.
- Always wear a face shield and safety glasses when grinding. Never use face shields by themselves.

10.3 Storage Methods

- Construct racks, bins, or drawers so that each of the various types of wheels can be stored in an orderly and safe manner. Wheel selection should be possible with a minimum of handling.
- **DO NOT** store grinding wheels in a location that would subject them to:
 - Exposure to high humidity, water, or other liquids
 - Freezing temperature
 - Any temperature which may cause condensation on the wheels
- All grinding wheels are breakable. Exercise care in the handling and the storage to prevent damage. The following rules should always be observed.
 - Handle the wheels carefully to prevent damage.
 - **DO NOT** roll the wheels.
 - If a grinding wheel becomes wet, discard it unless it was designed to be used wet.
 - When transporting wheels that cannot be carried by hand use trucks or other suitable conveyances which provide support and protection.
 - When storing grinding wheels place them carefully on a shelf, rack, bin or other designated storage space.

- If you drop a grinding or abrasive wheel, OR suspect that one has been dropped or struck, or see chips that might indicate abuse, test the wheel for integrity (Reference "**Abrasive Grinding Wheel Inspection**" in this section) or mark the wheel with a "**DO NOT USE**" or "**DO NOT OPERATE**" tag and have the wheel tested or disposed of.

11.0 Air Driven Tools

- When it is necessary to use compressed air for cleaning, reduce the nozzle pressure to 30 PSI (< or less) or use a "**safety nozzle**".
- Provide effective chip guarding when compressed air is used for cleaning purposes.
- When using air for cleaning, wear the proper personal protective equipment such as goggles, face shields, respirators, etc., as applicable.
- All abrasive blast cleaning nozzles must be equipped with "**dead man**" controls.
- Air hoses, connections, and air tools must be used for the service for which they are designed.
- When connecting the air hose to the tool connect the supply end first and blow the hose clear of any moisture or foreign matter before connecting the tool.
- Never point a compressed air hose nozzle or pneumatic tool at another person.
Also, never use air for horseplay.
- Pneumatic power tools must be properly secured to prevent the tools from being accidentally disconnected.
- To prevent the attachments from being accidentally disconnected, securely install safety clips or retainers on pneumatic impact (percussion) tools.
- Never kink an air hose.
- Use only heavy-duty impact-type sockets on powered impact wrenches. The ordinary sockets designed for hand tools will not withstand the shock loading of the power tool.
- When using power tools the operator should be aware of any torque exerted by the tool. He should position himself to overcome the shock if the power-driven element hangs or sticks.
- Remove chisels, chippers, or the like from power tools when they are not in use.
- Never strike power tool heads such as chisels, chippers, etc., with a hand hammer or use them for anything other than their intended purposes.
- All pneumatically-driven nailers, staplers and other similar equipment provided with an automatic fastener feed and which operate at more than 100-PSI pressure must have a safety device on the muzzle to prevent the tool from ejecting fasteners unless the muzzle is in contact with the work surface.
- Air hoses exceeding a 1/2-inch inside diameter must have a safety device at the source of the supply or a branch line that will reduce the pressure in case of hose failure.
- **DO NOT** use air hoses for hoisting or lowering tools.

12.0 Hydraulic Hand Tools

- All hydraulic jacks must have the rated lift legibly and permanently affixed on the jack.
- All hydraulic jacks must be thoroughly inspected at least every six months. If used at other locations they must be inspected each time they are sent out and returned.
- All hydraulic jacks must be properly maintained and lubricated.
- Fluid used in hydraulic jacks must be fire-resistant and meet the Bureau of Mines standards.
- All jacks must have a positive stop to prevent over-travel.

13.0 Fuel Powered Tools

- Never operate fuel-powered tools in a flammable atmosphere. Continuous testing for explosive gases is required if the potential for such an atmosphere exists (for example, within vessels, tanks, etc.).
- Fuel-powered tools such as chain saws, lawn mowers, edgers, etc., are only to be operated by the persons thoroughly familiar with their operation and hazards.
- Do not refuel engine-mounted fuel tanks until the engine has been stopped and allowed to cool.
- Do not perform maintenance, repairs or mechanical adjustments on fuel-powered hand tools unless the engine has been stopped.

14.0 Saws

- Always wear safety goggles or glasses.
- Install hacksaw blades with the teeth pointing forward. Avoid having the blade buckle; it could break and send pieces flying.
- Start a new cut when using a new blade in a hacksaw. A new blade could break in an old cut.
- Store saws so that the teeth will not injure anyone.

15.0 Explosive Actuated Hand Tools

- If any explosive-actuated hand tools are purchased they must meet ANSI Standard A 10.3-1970 safety requirements for Explosive Actuated Fastening Tools.
- Never use an explosive-actuated tool without the proper training in the use and in the safety hazards associated with these tools.

16.0 Small Portable Pumps

- The use of small "engine-driven" portable pumps is restricted to pumping liquids that are neither flammable nor combustible.

The mixture or interface of the liquid being pumped with a flammable or a combustible liquid (such as tank-bottom water) renders the use of a small engine-driven portable pump unacceptable.

- To refuel a small engine-driven portable pump shut off the engine. If recommended by the manufacturer, allow a brief cooling period. If the fuel tank and the refueling cans are both metallic take static control measures. Keep the metallic tank and can and any metallic device between them (such as a funnel or a strainer) continuously in electrical contact with one another to avoid the possibility of a spark at the fill opening.
- When such electrical contact cannot be maintained, as when a fill spout or funnel is not made of conductive materials or when physical contact of all components cannot be maintained, use a bond wire(s) between components. Special precautions for static control are not usually taken when filling fuel tanks of nonconductive materials and of **no more than a five-gallon** capacity.
- When transferring any liquid with any small portable pump/hose system, continuously staff the pumping operation. These guards against personnel safety hazards, environmental damage and risk to the equipment and facilities.
- When operating any small portable pump, do not run the pump without liquid in the pump or with total restriction to flow. This should only be done by someone adequately versed in the internal cooling and lubricating requirements of the particular pump. Air bleeding and priming maneuvers may require brief running without a full pump body and/or without flow. Only someone familiar with the manufacturer's relevant operating instructions or by someone adequately instructed in the basic safety considerations should do this. Guard against seal and/or bearing damage and the potential overheating of the pump body. Overheating could result in the auto-ignition of flammable or combustible vapors if they are present.

	Section III Forms & Information	Valid from: November 2008
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Section III:

7.1.10 RPSHSE – 10

Hand and Portable Power Tools

Form 1 -

NO FORMS APPLICABLE

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APPLICABLE

TRAINING WILL ADDRESS THIS GROUP

	Section III RPSHSE 7.1.11	Valid from: November 2008
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Revision Profile

Rev.	Date	Name	Approval Signature	Remarks
0	11/08	Owens O'Quinn QHSSE Consultant	On File	ORIGINAL
0	11/08	Tammy Conekin	On File	ORIGINAL
1				
2				
3				
4				
5				

Original Review Progress

Date	Reviewer	Signature
11/08	J.K. Barrilleaux – Grammar/Technical Format Evergreen QHSSE Solutions LLC	On File
11/08	Owens O'Quinn – QHSSE Consultant Evergreen QHSSE Solutions LLC	On File
11/08	Tammy Conekin – Head of Service	On File



	Section III RPSHSE 7.1.11	Valid from: November 2008
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Section III: 7.1.11 RPSHSE – 11
Electrical Safety

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1.0 Introduction

"7.1.10 RPSHSE – 11 Electrical Safety" establishes the electrical safety and health requirements for all **REPOWER USA** employees. It also establishes the minimum standards that all facilities operated by **REPOWER USA** shall follow as the guidelines that will assist the facilities in complying with regulatory requirements.

This document describes the plans, training and record-keeping requirements that facilities shall follow to address the regulatory requirements of Federal and State Electrical Safety, and Health regulations.

"7.1.10 RPSHSE – 11 Electrical Safety" is intended to only outline the major responsibilities that are necessary to comply with the workplace safety and health regulations for the facilities operated by **REPOWER USA**. It is the responsibility of **REPOWER USA** to fully determine any additional requirements and to develop detailed programs and procedures to ensure full compliance.

It is the responsibility of all **REPOWER USA** employees to comply with all the applicable **REPOWER USA** rules and governmental regulations. If at any time an activity has occurred or could occur which results in violations then the employee shall follow **REPOWER USA** procedures for proper supervisory and agency reporting. All **REPOWER USA** employees are also responsible to help ensure that all contractors and visitors comply with the **REPOWER USA** operated facilities and governmental requirements.

It is the responsibility of the On-Site Supervisor, the On-Site HSE Coordinator, and/or the HSE Manager to remain abreast of the following:

- Current applicable regulations.
- Preparation and/or motivation of programs, plans, orders, procedures, recordkeeping, reporting and the training necessary to comply with the regulations and the **REPOWER USA** Policies and Procedures.

The **REPOWER USA** Department/Operations Manager and the HSE Manager shall be responsible for implementing and maintaining the related programs, orders, records, reports and training.

REPOWER USA is committed to providing a safe and healthy workplace for all of its employees, visitors and contractors.

This commitment encompasses not only full compliance with all the applicable laws and regulations but encourages employees to seek additional measures to provide continuous improvement and to exercise exemplary safety practices that benefit everyone. All **REPOWER USA** employees shall be trained and aware of the necessity of complying with safety policies, practices, and procedures and how to implement them.

The underlying theme of this awareness is that all accidents can be avoided with the proper preparation and the proper attitude.

2.0 General Rules

The National Electric Code (NEC) is a written volume of practical safeguards for working with electricity. The NEC shall be observed in the installation and operation of electrical systems.

Electrical equipment shall be free from recognized hazards. Determine the safety of electrical equipment by checking the following:

- Suitability for the identified purpose and for the location where it is to be operated.
- Mechanical strength and durability, including the adequacy of the parts designed to enclose or protect other equipment.
- Electrical insulation.
- Heating effects under usage conditions.
- Arcing effects.
- Classification by type, size, voltage, current capacity and specific use.

The purpose of this section is to ensure that the installation and subsequent use of electrical equipment is in accordance with NEC and OSHA 29 CFR 1910.269, 1910.303 and 1910.304.

All **REPOWER USA** Qualified Electricians and their assistants authorized to work on electrical circuits shall be trained and prepared to render immediate mouth-to-mouth breathing and Cardiopulmonary Resuscitation (CPR) techniques.

- Unauthorized persons **SHALL NOT** attempt to make repairs to electrical equipment.
- Be thoroughly familiar with all emergency trip switches.
- Know the correct type of fire extinguisher to use for electrical fires
- **Never** use water on an electrical fire.
- All unsafe appliances, lines, and electrical apparatus should be immediately reported to the electrician or supervisor.
- Consider all electrical conductors energized.
- Special precautions should be taken for working with high voltage:
 - o (Reference Appendix I on high-voltage procedures).
- De-energize all circuits before beginning work. Use the proper procedures to prevent electrical circuits from being inadvertently energized.
- Use the suitable protective equipment including rubber gloves, mats, and blankets to provide insulation from other elements which are energized or grounded. Personnel shall not wear rings, watches, or other similar metallic objects while working on energized electrical equipment. Hands, shoes, and clothing should be dry when any energized electrical equipment is handled.

- Insulated tools and rubber protective devices should be periodically inspected and cleaned. When their condition is in doubt, these articles should be high-potential tested.
- Touch all electrical equipment enclosures, switches, etc. with the back of your hand. **Never** use the inside of your hand. Electrical shock makes muscles contract and it could cause your hand to grasp the equipment.
- Avoid stepping on or handling live wiring, lighting units, or trouble lights found lying on the floor or ground. Eliminate such hazards by opening the circuit and restoring the items to their proper places.
- Use non-conductive ladders when working on or near electrical equipment or conductors. The use of metal ladders is prohibited.
- Proceed according to the instructions in operating electrical equipment. **Never** experiment. If equipment fails to operate properly, consult an electrician.
- Defective electrical cords for equipment and appliances **SHALL** be repaired or replaced.
- Electrical outlets should not be overloaded. All outlets **SHALL** be grounded. Outlets supplying power to portable electric tools that are either outside or in wet locations should have approved ground-fault circuit protection. **Never** increase the breaker size above the design capacity.
- The use of storage batteries must conform to Article 480 of the NEC. Adequate ventilation of battery rooms should receive particular attention so that accumulation of an explosive substance can be prevented.
- When it is mandatory to use electrical equipment in a Confined Space Entry situation **ALL** applicable items must be followed in the Confined Space Entry Permit and Hot work Permit Procedures. Additionally, appropriate protective shields, protective barriers or insulating materials shall be provided, noted on the Confined Space Entry Permit and Hot Work permit and utilized.

3.0 Cleaning Electrical Equipment:

- Methyl chloroform (1, 1, and 1-trichloroethane) is recommended for cleaning electric motors and other equipment where an oily residue (such as that left from kerosene or varsol) is undesirable. The least toxic of the inflammable volatile solvents, methyl chloroform has a Threshold Limit Value (TLV) of 350 PPM. Because methyl chloroform attacks aluminum it should not be used to clean equipment made of aluminum.
- Because of its high toxicity carbon tetrachloride **SHALL NOT** be used for cleaning.
- Water or steam shall not be used to wash the areas near electric motors or other electrical apparatus unless the power has been cut off.
- Corroded storage battery terminals shall be cleaned with a mild solution of baking soda and water. The connections shall be tightened and the terminal areas
- greased with petroleum jelly or a similar light grease.
- **ALWAYS** turn off the power before cleaning control panels or safety switches.

4.0 Construction and Repair:

- A structure **SHALL NOT** be built in the vicinity of a power line until the potential electrical hazard has been evaluated. Federal, state, and local regulations **SHALL** be checked for the restrictive distances needed between power lines and moving equipment. The rules for warning signs, guarding, and temporary clearances must be determined and strictly complied with.
- If possible, the overhead circuits that require repairing should be de-energized. Work on a hot circuit **SHALL** be performed by at least two qualified electricians. One of the electricians does the work while the other remains on the ground. The electrician on the ground shall be fully equipped and ready to rescue or assist the other if necessary.
- When using a bucket truck for the repair or construction of electrical lines on inclines or unlevelled terrain, caution shall be used to ensure against tipping over.
- Approved rubber gloves **SHALL** be worn. They must be inspected before each job. Rubber insulating blankets and other insulating material appropriate for the voltage involved **SHALL** adequately cover the conductors in the work area. Work of this kind must be performed slowly and carefully.
- Where applicable, lockout procedures shall be used when the equipment being worked on has controls located away from the equipment.
- Workers repairing an overhead line **SHALL** have the line grounded with an approved grounding set in case the line should be energized accidentally.
- The location of an underground cable or conduit shall be appropriately marked. All buried electrical PVC conduits and any steel conduits with a voltage greater than 600 volts shall be set in concrete and identified by red permanent markings.
- Underground cable or conduit vaults shall be checked for toxic or flammable vapors before they are entered.
- Smoke-filled cable vaults shall not be entered without the protective fresh-air mask breathing equipment.

5.0 Enclosure of Electrical Equipment

- Doors and covers of electrical apparatus enclosures shall be kept closed except while repairs are being made.
- When the enclosure or frame of any electrical apparatus is discovered as charged an electrician shall be notified immediately to make repairs.
- The doors of outside enclosures containing electrical apparatus shall be braced or tied open while the apparatus is being repaired or adjusted.
- The flange area of explosion-proof electrical enclosures shall not be painted or sealed in any way that prevents the release of pressure or gases.
- A junction box is required between a switchboard and shall be well equipped with an electrical submersible pump.

The junction box shall be grounded and vented. The switchboard should be at least 35 feet from the junction box and 50 feet from the wellhead. Conduits shall be equipped with the proper seals to prevent vapors from entering the boxes.

6.0 Fuses

- Before replacing a fuse **always** make sure the disconnect (valve/switch) is open. Only a Competent Person (CP) shall replace the primary fuses such as transformers, disconnects, and line fuses. No person shall be authorized to replace the primary fuses unless they have been fully instructed on the approved safety procedure for this task. This procedure shall include the use of a fuse puller.
- Stand to one side when opening or closing a safety switch. Never stand in front of the switch. Open or close the switch in one quick motion.
- Remove the fuses with a fuse puller. Replace them with fuses of the same size. Make sure the fuses are in the fuse clips tightly.
- Keep fuse pullers clean and dry. Even though they are made of an insulating material if they get wet, greasy or dirty the moisture or dirt may form a conductor for electricity.
- The use of renewable element fuses below 100 amperes is prohibited.
- Substitutes for fuses, such as pennies, slugs, or other makeshift devices are prohibited.

7.0 Generators

- Electrical generators should not be installed within 150 feet of any producing well or oil tank without the approval of the local management and the appropriate state or federal regulatory body.

8.0 Grounding

- Ground wires placed for the protection of workers and equipment must not be disturbed. It is imperative that a qualified electrician properly maintain them.
- All non-current carrying enclosures or structures used in electrical apparatus or circuits **SHALL** be grounded. In a grouping of electrical apparatus, the grounds **SHALL** be interconnected. Before opening or working on such enclosures or structures use a volt-ohm meter to determine if the ground is effective.
- All electric motors shall be properly grounded according to the NEC.

9.0 Lighting Equipment

- When changing a broken light bulb, or when changing a burned out light bulb in a hazardous area, the circuit **SHALL** be de-energized and eye protection should be worn. Avoid handling broken bulb fragments. Burned out bulbs shall be properly disposed of.
- Keep the glassware clean on all industrial fixtures to ensure maximum illumination.

- Never remove protective globes from vapor-proof or explosion-proof fixtures without first de-energizing the circuit. Only remove them for the time it takes to clean or replace them.
- Safety lamps and extension cords shall be kept in good repair. They shall be checked for bad insulation and for cracked or broken protective globes. The cord shall not be used if it is defective. Care should be taken that the cord does not wrap around the arms or any other part of the body. Never stand in water while touching the cord of the lamp. Never roll up an extension cord before it is disconnected from the power source. Always apply pulling pressure to the plug, not the cord.
- Portable hand lights used in hazardous locations **SHALL** explosion proof.
- A portable hand light shall not be used unless the outside globe and guard are in place.
- Employees are not to enter spaces containing exposed energized parts without the adequate and proper illumination that provides a safe working environment.

10.0 Motors

- Always operate electric motors with the motor starter. Never use the main disconnect switch for stopping a motor except in an emergency.

11.0 Poles

11.1 General

- The sudden loading or unloading of poles, such as cutting down service wires,
- The conductors, or guys, creates potentially serious accidents and must be avoided. The conductors or guys that offset strain in the opposite direction should be slacked off gradually as they are removed. The conductors shall not be cut loose and allowed to fall. This will cause a sudden jerk on the pole that may snap it off. Even new poles are not designed to withstand such treatment.
- Handle the wires cautiously when installing or removing the service wires or other conductors on poles that have no support for the strain being altered. If the strength of the pole is in doubt, find a way to offset the strain to be added.
- All guy wires shall be electrically insulated between the pole and the ground when the phase wire and the guy wire are on the same bolt. Insulators should be placed above the height average height as identified by NEC, NFPA, and regulatory agencies. They shall be inspected periodically.
- In congested areas, pole guy wires should be marked with guy guards.
- Signs, fences, clotheslines, or other encumbrances shall not be attached to poles. Shrubs, trees, vines, or flowers should not be planted around power or telephone poles.
- Most poles have some form of markings. These markings are placed on the pole at specific distances from the butt depending on the length of the pole.

When poles are set at the proper depth these marks should be at eye level which is approximately five to six feet above the ground.

- When a pole without markings or with illegible markings is set, it should be branded with a chisel or triangle punch so that it has a pole mark five feet above ground level.
- If cutting off some of the butt has shortened a pole, the original markings shall be removed from the pole.
- No objects to facilitate climbing should be added to poles or platforms.
- Tools, insulators, and other materials should be raised or lowered by a hand-line not smaller than 1/2" diameter.
- Hand axes should not be used in pole or overhead work. Use hammers, saws, or chisels.
- When opening or closing the disconnect switches, avoid looking at the arcs that could cause eye injuries. Turn your head before the switch disconnects or makes contact.

11.2 Unsafe Poles

- When there is evidence that a pole may be unsafe to climb or work on, the lineman should not climb it. In many instances damage to poles can be detected by close visual inspection.

If a pole is still suspect even without visible signs of serious damage after the examination above ground level, the following tests and checks should be made:

- **Sounding with a hammer** - Striking with a hammer around the base and on the pole will indicate whether there is sound wood immediately under and next to the point of the blow. A pole with heart rot has a hollow sound and shall be drilled to determine the extent of the deterioration. However, below-ground or termite damage cannot always be detected by sounding.
- **Digging around the pole base** - Digging around the base will help evaluate and verify rot or termite damage below the ground line. After the earth is removed, use an increment boring tool or prod pole to determine the condition of the wood.
- Never climb part way up a suspected pole and test it by rocking or shaking. This action tends to make a defective pole even weaker.
- Check the soundness of guy wires before climbing a pole or before modifying a system.
- If a pole is found to be unsafe to climb choose a method to make it safe on the basis of the pole's condition, location, and available facilities. One of the following methods may be used:
 - Tie off the pole with lines.

- Brace the pole with three spikes that are equally spaced from each other and from the pole.
- Tie the pole to the pole derrick on the truck.
- Set a new pole beside the old one. Tie the two poles together or work from the new pole.

12.0 Power Lines

- Construct all new power lines to conform to the National Fire Protection Association (NFPA) and NEC minimum clearance requirements: 22 feet over highways and 18 feet over lease roads. At the earliest possible time, raise existing lines that do not meet minimums.
- Unused power lines should be disconnected.
- Avoid contact with electrical power lines. Even contact with low-voltage lines, such as a 110-volt household lighting circuit can result in death.
- In all construction work all personnel shall take special notice of overhead lines and confirm that they are not energized unnecessarily. This precaution is particularly important when cranes are being used to lift materials.
- While conducting activities in the vicinity of power lines, a constant watch shall be kept to maintain proper clearance.
- When high structures or equipment are moved under electrical lines, an electrician should be present. A Competent Person (CP) shall ascertain that there is the proper clearance. Whenever possible, the circuit should be de-energized.
- Buried lines could be contacted around permanent pipe-handling and storage yards. For temporary storage, designate the areas where power lines are not likely to be contacted.
- Consider relocating power lines laterally so that operations in areas of exceptional traffic or line reworking will be safer.
- Where possible, the power lead to operating equipment should be run down the pole, buried underground to a depth of 24 inches and terminated at the equipment.

13.0 Switches

- Approved rubber mats shall be provided for persons to stand on while they operate electric multi-switch panels that contain open-type switches. The mats should be of sufficient width, thickness and length to extend across the entire front of the panels. They should also be provided in the rear of panels with open-type switches if access to the rear of the panels is possible. Mats shall be kept clean, dry, and free of oil.
- The ground area around electric switch panels should be graded so that water will not stand near the panels.
- When energizing the circuit, do not stand directly in front of an electric panel.
- Because pole-top switches and similar gang-operated switches are not operated very often a blade may become stuck or disconnected after the switch mechanism is operated.

These switches should be inspected periodically to ensure that the mechanism is in good working order and the ground circuit is intact. When operating switches of this type, rubber gloves or an insulated platform should be used.

- Equipment controlled by automatic switches shall have a sign that warns of the danger involved. Before working on such equipment, open the disconnect switch and follow the prescribed Lockout/Tagout procedures.
- Switches or circuit breakers that are open to permit work on electrical equipment shall be checked with a volt-ohm meter to ascertain that no voltage exists. Handles must be tagged and locked in the "open" position.

14.0 Training

REPOWER USA shall determine and comply with all the applicable regulations including the provisions for the development of formal written plans and the reporting requirements for training. These plans along with a reporting method shall be compiled in HSE training Manual.

All **REPOWER USA** employees to be trained shall meet the applicable regulations, Federal or State laws, the Best Industry HSE Practices, and the HSE Manager recommendations. The training shall provide all **REPOWER USA** employees with a thorough understanding of all written plans and procedures. Training is required initially for all employees for pre-employment or the assumption of a new assignment whenever new procedures, substances, processes, or equipment is introduced in to the workplace environment. The successful completion of a training session shall be verified by the passing of a written exam that addresses the major concepts of the topic and the demonstration of competencies in the required areas.

The proficient training documentation shall be completed and signed by the trainee and trainer in order to record that the employee, visitor, or contractor has satisfactorily completed the offered training. Each person attending the training session and understood shall sign an acknowledgment statement indicating that the information was covered.

Electrical Training shall address two categories

- **Unqualified persons**
The **REPOWER USA** employees considered by their job classification to be an "unqualified electrical person" and shall be working on or near exposed energized equipment must be trained in the awareness of the potential electrical shock to which they may be exposed.
- **Qualified persons**
The **REPOWER USA** employees considered by their job classification to be a "qualified electrical person" and shall be working on or near exposed energized equipment. must be trained in the appropriate manner to become qualified to work on electrical equipment and aware of the potential electrical shock to which they may be exposed.

This training shall include but is not be limited to

- Skills and techniques necessary to distinguish the exposed live parts of electrical equipment.
- Skills and techniques necessary to determine the nominal voltage of the exposed live parts.
- Clearance distances specified in the program and the corresponding voltages to which exposure will result in injury or death.
- Qualified persons shall also have training on the proper use of precautionary techniques, Personal Protective Equipment (PPE), insulating and shielding materials, and insulated tools when the work shall involve either direct contact or contact by means of equipment, tools or materials.

High Voltage Procedures will be found in Appendix I. Minimum approach and clearance distances for both “unqualified electrical person” and “qualified electrical person” will be found in Appendix II.

15.0 Definitions

- **Flow of electricity**
Similar to the flow of product through a pipe, electricity tends to flow along the path of least resistance to earth (ground).
- **Current**
Total volume of product flowing past a certain point in a specified time period; measured in amperes.
- **Voltage**
Like the pressure in a pipeline; measured in volts.
- **Resistance**
Any condition which retards flow; measured in ohms.
- **Ground**
Electrical path from a current sources the earth.
- **Electrical Injuries**
The severity of an electric shock injury is determined by the amount of the current flowing through the victim. An alternating current of 100 milliamperes at a frequency of 60 hertz cycles per second may be fatal if it passes through vital organs. It is estimated that a value of 16 milliamperes is the average current at which he/she can still release from an object held by hand.

	Section III RPSHSE 7.1.11A	Valid from: November 2008
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Revision Profile

Rev.	Date	Name	Approval Signature	Remarks
0	11/08	Owens O'Quinn QHSSE Consultant	On File	ORIGINAL
0	11/08	Tammy Conekin	On File	ORIGINAL
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Original Review Progress

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11/08	Owens O'Quinn – QHSSE Consultant Evergreen QHSSE Solutions LLC	On File
11/08	Tammy Conekin – Head of Service	On File





Section III
RPSHSE 7.1.11A

Valid from: November 2008

Section III: 7.1.11A RPSHSE – 11A
Conductor - Assured Equipment
Grounding Program

Contents

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1.0 Introduction

OSHA requires that all **temporary** 120 volt and 15 and 20 amp breakers and wiring and electrical power tools and equipment on job sites be protected by Ground Fault Circuit Interrupters (GFCIs) or inspected in accordance with the "Conductor - Assured Equipment Grounding Program" (CAEG). **REPOWER USA** complies with the OSHA requirements by using Ground Fault Circuit Interrupters on all locations and electrical applications.

Testing under the CAEG Program shall be performed

- Before the first use of new equipment
- Before equipment is used after an incident suspected of causing damage
- Before equipment is returned to service following any repairs
- At intervals not exceeding three (3) months (exception: extension cords and receptacles which are fixed and not exposed to damage shall be tested at intervals not exceeding six (6) months).

A test can be verified by placing color-coded marking tape on the equipment.

"7.1.11A RPSHSE – 11A" describes the requirements needed to assure that the installation and maintenance of equipment grounding conductors for temporary wiring on job sites is in accordance with 29 CFR 1910.304 and 29 CFR 1926.404. Ground Fault Circuit Interrupters (GFCIs) are **not** required for 120 volt, single phase, 15 and 20 ampere permanent receptacle outlets which are part of the permanent wiring of the building. However, they are intended to be used with portable Ground Fault Circuit Interrupters (GFCIs) and meet the provisions of the "Conductor - Assured Equipment Grounding Program". Also double insulated tools are not required to be grounded or tested under this program. Employees shall not use any equipment which does not meet the requirements of this program. **REPOWER USA** written program provides for applicable procedures to be available at all job sites and available for review by Contractors, Employees and Regulatory Agency personnel (i.e. Assistant Secretary & OSHA Auditors/Inspectors). This program is implemented at all **REPOWER USA** job sites.

2.0 Requirements

Equipment grounding conductors shall be installed and maintained in accordance with this instruction. It is the responsibility of the On-Site Supervisors to implement this program at their respective job locations.

2.1 Installation

Equipment grounding conductors shall be installed as follows:

- All 120 volt, single phase, and 15 and 20 ampere receptacles shall be the grounding type and their contacts shall be grounded by a connection to the equipment grounding conductor of the circuit supplying the receptacles in accordance with the applicable requirements of the National Electrical Code (NEC).

- All 120 volt cord sets (extension cords) shall have an equipment grounding conductor which shall be connected to the grounding contacts of the connector(s) on each end of the cord.
- The exposed non current-carrying metal parts of a 120 volt cord and plug-connected tools and equipment that are likely to become energized shall be grounded in accordance with the applicable requirements of the National Electrical Code.

2.2 Daily Visual Inspections

Employees will visually inspect receptacles, flexible cords sets (extension cords), electrical equipment, and electrical tools before each day's use for external defects such as deformed or missing pins, for insulation damage, and for an indication of possible internal damage. When there is evidence of damage, the item shall be taken out of service until tests and any required repairs have been made and documented.

2.3 Monthly Testing

All 120-volts, single phase, 15 and 20 ampere receptacles, 120-volt flexible cord sets, and 120-volt cord and plug connected equipment which are not a part of the permanent wiring of the building or structure are required to be grounded. They must be tested, recorded, and documented by a competent person (trained supervisor) on a monthly basis;

- All equipment-grounding conductors shall be tested for continuity and shall be electrically continuous.
- Each cord set, attachment cap, and the plug and receptacle of cord sets shall be tested for the correct attachment of the equipment grounding conductor. The equipment-grounding conductor shall be connected to its proper terminal.

A monthly inspection is required on all electrical hand tools, cord sets, drop light extension cords, and electrical welders and must be documented.

2.4 Test Record

The test shall be verified by placing color-coded marking tape on the receptacle, cord set, or equipment to identify that it has passed the test and to indicate the date (quarter) in accordance with the coding scheme.

3.0 Testing and Record Requirements

This program is required by Occupational Safety and Health Administration (OSHA), in compliance with Part 1926.404 effective October 9, 1986, where ground-fault circuit interrupters (GFCIs) are **NOT** in use and where 120-volt and 15 and 20 ampere wiring is **NOT** part of the building or facilities permanent electrical service. Employees **SHALL** only be allowed to use the equipment that meets these requirements.

3.1 They SHALL tested by the designated Competent Person(s) as follows:

3.1.1 Receptacle Tester

Plugs in to show if the terminals are correctly connected to the ground and if the wire is continuous (without breaks).

3.1.2 Continuity Tester

Checks if the ground is continuous from the metal frame (a) through the cord to the third prong (b). Also, touch the tester contact to first prong (c) then second prong to detect possible ground fault.

3.1.3 Test Record

Is maintained to verify that **COLOR CODE** method indicate appropriate month tested.

- Tests are made:
 - Before the first use
 - After any repair or after a suspected-damage incident
 - In 3 month periods (6 month periods if in a protected, fixed location).

3.1.4 Inspection

Before the day of use, the cord-supplied equipment shall be visually inspected for ground problems.

**DEFECTIVE or EQUIPMENT THAT DOES NOT MEET THIS PROCEDURE GUIDELINES
SHALL NOT BE USED.**



Section III Forms & Information

Valid from: November 2008

Section III: 7.1.11 RPSHSE – 11 Electrical Safety

Form 1 – Electrical Equipment Inspection Report



Section III Forms & Information

Valid from: November 2008

Electrical Equipment Inspection Report

FACILITY		DEPARTMENT		
LOCATION		PHONE NO.		
DATE	INSPECTOR	SUPERVISOR		
MACHINE TYPE		MODEL NO.		
MANUFACTURER		SERIAL NO.		
EQUIPMENT	OKAY	NOT OKAY	NA	COMMENTS
1. POWER CORD, PLUGS, HOSES (PNEUMATIC), WELDING CABLES				
A. Inspect for cuts, abrasions, exposed wires				
B. Inspect for oil or solvent soaked cable				
C. Inspect the cord & hose pulled out of clamp				
D. Inspect plug for bent or broken pins				
E. Inspect plug for bent or missing ground pin				
F. Inspect for splices and terminations				
G. Inspect electrode holder condition				
H. Inspect for terminal covers				
2. CASE				
A. Inspect for excessive dents				
B. Inspect for missing bolts				
C. Inspect for case ground				
D. Inspect for cracks, chips, breakage				
E. Inspect tool guard				
F. Inspect chuck or tool holder condition				
3. INTERNALS				
A. Inspect to see if the unit is full of dust, dirt, oil, etc.				
B. Inspect switch for sticking				
4. LIGHTS				
A. Inspect bulb guard				
B. Inspect bulb condition				
C. Inspect handle condition				

CONDITION CODES: [1] - DEFECTIVE/ REPLACE [2] - DEFECTIVE/ REPAIR [3] - ACCEPTABLE



Section III Forms & Information

Valid from: November 2008

Section III: 7.1.11 RPSHSE – 11 Electrical Safety

Form 2 - Minimum and Clearance Distances for Electrical Work

Minimum and Clearance Distances for Electrical Work

“Unqualified Electrical Person”

- When an “unqualified electrical person” shall be working in an elevated position near non-energized overhead lines or energized overhead lines the person and the longest conductive object he/she may contact shall not come closer to the unguarded energized lines than:
 - For voltage to ground 50kv or below – 10 feet.
 - For voltage to ground over 50kv – 10 feet plus 4 inches for every 10kv over 50kv.
 - **NOTE:** For voltages encountered with overhead lines, objects which do not have an insulating rating for the voltage involved are considered conductive.

“Qualified Electrical Person”

- When a “qualified electrical person” shall be working in the vicinity of energized overhead lines, the “qualified electrical person” may not approach or take any conductive object without an approved insulating handle closer to the energized parts than:
 - 300v and less – avoid contact.
 - Over 300v to 750v – 1 foot.
 - Over 750v to 2kv – 1 foot – 6 inches.
 - Over 2kv to 15kv – 2 feet.
 - Over 15kv to 37kv – 3 feet.
 - Over 37kv to 87.5kv – 3 feet – 6 inches.
 - Over 87kv to 121kv – 4 feet.
 - Over 121kv to 140kv – 4 feet – 6 inches
- **Exceptions to the above requirement is made when**
 - The “qualified electrical person” is insulated from the energized part with the Personal Protective Equipment (PPE) tested for the voltage involved.
 - The energized part is insulated from the person and all other conductive objects at a different potential.
 - The person is insulated from all conductive objects at a potential different from that of the energized part.

Vehicles or Mechanical equipment

- Any vehicle or mechanical equipment capable of having structure parts elevated near energized overhead lines of 50kv or less shall be operated so that a clearance of 10 feet is maintained. If voltage is greater than 50kv the clearance shall be increased 4 inches for every 10kv.
- **The following conditions may reduce these clearance requirements:**
 - If the vehicle is in transit with its structure lowered, the clearance from 50kv or less overhead lines may be reduced to 4 feet. If the voltage is greater than 50 kv clearance shall be increased 4 inches for every 10kv.
 - If adequately rated insulating barriers are installed to prevent contact with the lines and are not part of an attachment to the vehicle in its raised structure, the clearance may be reduced to a distance within the design working dimensions of the insulating barrier.
 - If the aerial lift is insulated for the voltage involved and if the work is performed by a “qualified electrical person” clearance may be reduced to the distances noted above (“qualified electrical person” clearances).
 - Approved warning technique devices that shall ensure that employee(s) on the ground cannot contact the aerial lift equipment or grounding points.



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Form 3 - Classified Area

Classified Area

Only equipment that is approved for that application shall be used in areas that have been designated as a hazardous (classified) location.

Equipment and associated wiring approved for use in an intrinsically safe shall be permitted in any classification location. The National Electrical Code (NEC) defines an intrinsically safe circuit as: a circuit in which any spark or thermal effects is incapable of causing ignition of a mixture of flammable or combustible material in air under prescribed test conditions.

Hazardous locations most likely encountered in the oil & gas industry will be**➤ Class I, Division I**

- A location where ignitable concentrations of flammable gases or vapors exist under normal operating conditions.
- Where ignitable concentrations of gases may exist frequently due to repairs, maintenance or leakage.
- Where breakdowns or malfunctioning equipment or processes might release ignitable concentrations of flammable gases or vapors and might also cause simultaneous failure of electrical equipment.

➤ Class I, Division II

- A location where volatile flammable liquids or vapors are handled, processed or used. These are normally confined within closed container or systems.
- Where positive mechanical ventilation and which it may become normally prevent ignitable concentrations of gases or vapors hazardous if this ventilation failed.
- Where the location is adjacent to a Class I, Division I location which might communicate ignitable concentrations of flammable gases or vapors unless prevented by adequate positive pressure ventilation from a source of clean air and effective safe guards against ventilation failure are provided.
- Hazard classed areas are also organized into groups. The group most inherent to the oil & gas industry operations will be Group "D", which includes flammable liquids, vapors and gases.
- All electrical equipment for hazardous locations shall conform to National Electric Code specifications as well as engineering automation system for the classified area.
- Equipment installed in classified areas shall be legibly marked by the Original Equipment Manufacturer (OEM) or testing agency indicating in what areas it is approved for use.
- The use of pigtailed or drop cords that are not appropriately rated for that hazard class shall not be used unless a hot work permit has been issued.



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Electrical Safety

Form 4 - High Voltage Procedures

High Voltage Procedures

- Prior to opening the door of a high-voltage (4160 volts or greater) energized circuit breaker or motor starter, the following safe practices must be implemented:
 - Face shield, appropriately insulated gloves and flash suit must be worn.
 - The On-Site Field Superintendent/Supervisor, the On-Site HSE Coordinator and the On-Site Senior Electrical Person shall be alerted as to the activities.
 - Work shall be performed by at least two technicians. One technician shall perform the work while the other monitors the activities, fully equipped and ready to rescue in case of an emergency.
 - The high-voltage insulating gloves must be inspected for pinhole leaks by pressurizing the gloves. Additionally, the gloves shall be cleaned using a trichloroethane solution. Cleaning shall be done using a radial motion around the arm. Gloves shall not be cleaned using an axial motion, up and down the arm, because conductive tracks may develop which could result in an arcing across the glove.
 - If high-voltage **Hot Sticks** are to be used, the same cleaning procedure discussed for the high voltage insulating gloves shall be implemented before each usage.
 - Prior to using high-voltage **Hot Sticks** or any other voltage detecting device, the device shall be tested using some known voltage to confirm its operability.
 - Portable hand-held voltmeters shall not be used to measure voltages on circuits above 600 volts unless the meters are specially approved for use on high voltage switch gear.
 - When opening or closing a high-voltage circuit breaker, the person initiating the action shall stand to the hinged side of the breaker door. Standing in front or to the right of the breaker is dangerous should the breaker explode.
 - Prior to contacting a de-energized bus for cleaning or repair, the bus shall be tied to ground with an approved ground strap. Technicians must remember, upon completing their tasks, to remove the ground strap prior to re-energizing the bus.
 - All circuit breakers used to isolate a section of a bus for cleaning or repair must be opened and fully racked-out. A tag explaining why the breaker is racked-out must be placed on the breaker cubicle door.
 - Prior to opening any electrical enclosure within a hazardous area, the area immediately around the enclosure (within 10 feet) must be checked for combustible gas. If the area around the enclosure is not adequately ventilated, portable fans must be installed and used to ventilate the area.

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Electrical Safety

Forms 5 - “Conductor – Assured Equipment Grounding Program”

“Conductor – Assured Equipment Grounding Program”**Job Site Posting Requirements**

OSHA requires that all temporary 120 volt and 15 and 20 amp breakers and wiring and electrical power tools and equipment on job sites be protected by Ground Fault Circuit Interrupters (GFCIs) or inspected in accordance with the “Conductor - Assured Equipment Grounding Program” (CAEG).

Testing under the CAEG Program shall be performed

- ❖ Before first use on new equipment,
- ❖ Before equipment is used after an incident suspected of causing damage,
- ❖ At minimum of 3 month intervals.

Test verification should be by means of color-coded marking tape on the equipment. The following color coding scheme will be used:

1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.	REPAIR/ INCIDENT
WHITE	GREEN	RED	ORANGE	BROWN

PROCEDURE: INSPECT, then TEST, then COLOR CODE

Insure that all electrical apparatus has been satisfactorily tested and is color-coded prior to use. **This notice is recommended for permanent display at the job site.**

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Revision Profile

Rev.	Date	Name	Approval Signature	Remarks
0	11/08	Owens O'Quinn QHSSE Consultant	On File	ORIGINAL
0	11/08	Tammy Conekin	On File	ORIGINAL
1				
2				
3				
4				
5				

Original Review Progress

Date	Reviewer	Signature
11/08	J.K. Barrilleaux – Grammar/Technical Format <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Owens O'Quinn – QHSSE Consultant <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Tammy Conekin – Head of Service	On File



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Section III: 7.1.12 – RPSHSE – 12
Fall Protection - Slips, Trips and Falls

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1.0 Introduction

Slips, trips, and falls are the major contributors to employee injuries and lost time accidents. Falls can even be fatal. Except for traffic accidents, falls are fatal to more people than any other type of accident. Although the entire work force is constantly trained and alerted to job site related falls there remains an average of more than 1500 deaths per year and over 300,000 injuries. Fall Protection Training which includes scaffolds, ladder and Step is complete upon initial employment with an annual refresher as a minimum.

Falls are not only more common and serious than is generally expected but they are generally the most costly of all accidents too. Nearly 80% of all workers' falls result in a lost-time accident and approximately 12% of those are hospitalized.

2.0 Purpose

Fall Prevention and Fall Protection are two terms that are frequently used interchangeably. However, they are dissimilar in nature and should be considered separately. Fall Prevention operates by completely removing any hazardous situation and therefore eliminating the chance of employee exposure to possible accidents or injuries. Fall Protection concedes that a hazardous situation exists and compromises by minimizing its effects and using the most practical Fall Arrest Equipment and procedures available.

Fall Prevention is a well-planned system of action initiated prior to the construction and design to eliminate exposure to potential fall hazards and their sources. The removal of these hazards protects our employees against potential or subsequent accidents and the resulting injuries. Fall Prevention is far more desirable than the use of Fall Arrest Equipment because it removes the potential source of a fall hazard. Preventative measures such as the use of elevated platforms, perimeter guarding, proper access (stairways and ramps), and efficient housekeeping, as well as the use of other well-planned safety measures, should be implemented to mitigate potential hazards. Disposing of the need for Fall Arrest Systems in favor of effective preventative measures should be your primary objective during the planning phase of any of your construction operations. Fall Prevention planning should involve a Job Safety Analysis of each work procedure that might involve exposure to any type of potential fall hazard.

REPOWER USA is committed to the preservation of safety on the job and the primary consideration for implementing an effective program is a pro-active approach to employee and job site safety.

Each **REPOWER USA** employee must also be committed to implementing an enforcing **REPOWER USA** Policies and Procedures and complying to the HSE regulations and rules without exception.

The benefits of a comprehensive “Fall Protection Program” include a safer working environment, better organization, increased productivity, and a reduction of accidents and injuries.

3.0 Scope and Application

This standard sets forth those workplaces and conditions for which Fall Protection shall be provided and the installation, construction, and the proper use of Fall Protection is required as follows:

REPOWER USA SHALL provide Fall Protection for, but not limited to, the following situations:

- Any time and/or place that requires employees to be potentially exposed to falls from a height of six feet or greater to a lower level. This will also include work near and around excavations and trenching.
- The provided Fall Protection will be, but is not limited to, the use of properly installed scaffolds (The requirements relating to Fall Protection for employees working on scaffolds are provided in 29 CFR Part 1926, Subpart I). Scaffolds will be used in areas where they do not produce a hazard greater than the use of another approved method of fall protection.
- The provided Fall Protection will be, but is not limited to, the use of properly installed and maintained fall protection devices where they do not produce a hazard greater than the use of another approved method of fall protection. (The requirements relating to Fall Protection for employees working on certain cranes and derricks are provided in 29 CFR Part 1926, Subpart N).
- The provided Fall Protection will be, but is not limited to, the proper use, purchase and application of Ladders and Stairways where they do not produce a hazard greater than the use of another approved method of fall protection. (The requirements relating to Fall Protection for employees working on Stairways and Ladders are provided in 29 CFR Part 1926, Subpart X).
- Properly maintained motorized man-lifts with a work basket that meets and/or exceeds the OSHA Standard will be used where they do not produce a hazard greater than the use of another approved method of fall protection.
- Under certain conditions conventional fall protection can not be used. These locations **SHALL** be identified and classified as “**Controlled Access Zones**” with the proper safety precautions in use, the personnel notified, approved methods for access, and the adequate barriers installed and marked with noticeable and legible markers.
 - The **REPOWER USA** HSE Manager has the responsibility to prepare a site-specific Fall Protection Plan which will include the identified and classified areas, the proper safety precautions to be used, the designation of a Competent Person (CP) for monitoring them, and the approved methods for access and required barriers.
- The **REPOWER USA** HSE Manager’s qualifications shall be, but are not limited to, proven experience, education, and/or training for Fall Protection.

- **EXCEPTION:** The provisions of this standard **DO NOT** apply when employees are making inspecting, investigating, or assessing workplace conditions prior to the actual start of work or after all work has been completed.

4.0 Slips and Falls

4.1 General Precautions

Wet surfaces, spills, tripping hazards, and weather hazards can cause slips and falls. Slips are more likely to occur when you hurry or run, wear the wrong type of shoes, or do not pay attention to where you are going. **Common Sense Can Prevent Slips and Falls.** Follow the following precautions to prevent slips and falls:

- Avoid the following situations whenever possible
 - Wet floors/ decks.
 - Oily, greasy floors/ decks.
 - Highly waxed and polished floors.
 - Throw rugs at the foot or top of a stairway.
- Practice safe walking skills and habits. If you must walk on wet surfaces, take short steps to keep your center of balance under you. Point your feet slightly outward. Move slowly and pay attention to the surface you are walking on.
- Clean up spills immediately. Minor spills can be hazardous.
- Practice good housekeeping. Keep tools, cords, materials, etc. out of walkways.
- In addition to tools and materials, pay attention to tripping hazards, such as hoses, shovels, rakes, concrete bumpers in parking lots, holes in walkways and crosswalks, broken sidewalks, loose shoe laces, pants that are too long or etc.
- Never run unless the situation is life threatening. Never jump. Lower yourself carefully from docks, trucks, cranes, etc.
- Openings in decks, pits, floors, etc. should be well marked. Openings should be either:
 - Constantly attended.
 - Protected by barricades or standard guardrails.
- Openings which are covered (i.e.: grating or boards) shall be roped off before the holes are re-opened. Take special precautions when working in a location without handrails, barges, boats, wellheads, rooftops, machinery, etc.
- When exerting extreme force on wrenches and tools, make sure your footing is stable to prepare for wrench slips and quick releases.

5.0 Shoes and Traction

One of the best ways to prevent slip and fall injuries is to increase the friction between your shoes and the surface you are working on. The amount of traction a sole provides varies with the work surface.

Types of shoe soles include:

- **Neoprene soles**
Can be used safely on most wet or dry work surfaces. Neoprene is not recommended for oily conditions.
- **Crepe soles**
Are best for rough concrete, either wet or dry, but are not suggested for tile, smooth concrete, or wood surfaces.
- **Non-skid boots**
Can be used over or in place of shoes for better traction on oil, chemicals, grease, and ice conditions. Be sure footwear matches the working conditions present on the job.

6.0 Tripping Hazards

Trips occur from poor housekeeping practices, cluttered work areas, loose footing areas, and poor lighting conditions. Trips generally occur from being in a hurry and not paying attention to where you are going. Use these safety rules to avoid tripping:

- Make sure you can see where you are going. Carry only loads that you can see over.
- Keep all work areas clean and **DO NOT** clutter aisles, stairs, and walkways. Store tools and materials in designated areas when not in use.
- Arrange furniture, tool chests, etc. so they **DO NOT** interfere with walkways and traffic.
- Extension cords and power tool cords should be taped to the floor or arranged out of the way of traffic.
- Eliminate hazards due to loose footing and flooring on stairs, steps, tiles, broken concrete, carpets, etc.
- Keep work areas well lit. Extinguished lights and burned out bulbs will interfere with the **REPOWER USA** employee's ability to identify HSE hazards and to properly perform their jobs. The use of flashlights and appropriate safety lights are required.

7.0 Walking/Working Surfaces

The most critical aspect of Fall Protection is to provide a walking surface which is clean, dry (as much as possible), and free of obstructions. Access and egress paths **SHALL** be visible (marked and well lighted). Surfaces should be built strong enough to withstand twice the anticipated load to be placed upon them. Storage areas should have labels which provide load ratings to prevent overloading. Elevated work areas (over four feet above adjacent areas) **SHALL** have guardrails to prevent personnel from falling to the next level.

Adjacent hazards should be guarded to prevent personnel from falling into moving machinery or other hazards. Guardrails **SHALL** be strong enough to withstand a minimum of two hundred (200) pounds of pressure from any direction.

Personnel are not allowed to climb on guardrails. Holes **SHALL** be covered or have guardrails to prevent personnel from falling into these hazards. Applications may exist for infrequently used openings to ladders, hatches, or chutes to have gates or removable guardrails to protect personnel from inadvertently backing and falling into those openings. Elevated work areas **SHALL** have toe-boards and possibly screening to prevent objects from falling into moving machinery or onto personnel at lower levels.

7.1 Scaffolds

Scaffold use **SHALL** comply with the Occupational Safety and Health Administration (OSHA) regulations outlined in **29 CFR 1910.28** and **29 CFR 1926.450 – 454, Subpart L**. Only trained, Competent Personnel (CP) may erect scaffolds. All scaffolds **SHALL** be reviewed for compliance prior to their first use and **SHALL** be inspected prior to each use by a Competent Person and the scaffold users.

7.1.1 General

A scaffold is an elevated working platform that is used to support workers and materials during construction and maintenance work. Scaffolds should be designed to support four (4) times the anticipated weight of the person(s) and material(s) that will be placed on it. Never exceed the safe working limit of a scaffold.

7.1.2 Precautions

- All scaffolds must be built according to OSHA standards. Properly installed scaffolds include secured decking or planks, toe-boards, guards on all exposed sides, hand rails, and mid rails (See OSHA 1910.28 for additional designs, constructions, and uses of scaffolds).
- All scaffolds **MUST** be tagged OUT-of-SERVICE for any defect that is identified with the scaffold placed out of service until repaired.
- Scaffolds more than one section high must be tied off.
- A safe and convenient access to the platform level of the scaffold must be provided. Cross-braces should not be used to climb the scaffold - use an access ladder or equivalent safe access.
- Planks should be laid with edges close together so there are no spaces large enough for tools, etc. to fall through. Planking must be overlapped a minimum of 12-inches or secured from movement. Planking and decking can be solidly positioned by cleating or nailing it into place. Overhangs should be a minimum of 6-inches or a maximum of 12-inches so they are secure and will not tip when stood on.
- Toe-boards should be used to prevent materials and tools from falling.
- Personnel must wear properly tied-off safety belts on the scaffold platforms not equipped with standard guardrails when the working surface is 10-feet or more above ground level.
- Never use scaffolds during high winds.
- Use containers to store tools, lines, scrap material, etc. to prevent accidents and tripping hazards.

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- Always follow the Original Equipment Manufacturer's (OEM) instructions when assembling a scaffold.
- Make sure scaffolds are plumb and level at all times. Adjusting screws should not be extended to more than 12-inches of thread.
- Never use metal scaffolding in the vicinity of live electrical wires or equipment.
- Lash scaffolds at intervals of 30-feet of length and 25-feet of height.
- No alteration is permitted to any scaffold member by welding, burning, drilling, cutting, or bending.

7.1.3 Rolling Scaffolds

- Always lock caster brakes and blocks when a scaffold is in the working position.
- Never move a scaffold with anyone on it.
- The height of the working platform must be no more than four (4) times the smallest base dimension.
- Adjusting or leveling screws must not be used with scaffolds equipped with wheels.
- Have sufficient help when rolling scaffold.

7.1.4 Scaffold Training

- All Scaffold Training for REPOWER USA personnel is provided during normal training with certified OSHA, MSHA & COSS Trainers.

7.2 Stairways and Ladders

Stairways **SHALL** comply with the Occupational Safety and Health Administration (OSHA) regulations outlined in 29 CFR 1910.24 and 29 CFR 1926. 1052.

The Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1910.24 contains the safe design and construction requirements for fixed general industrial stairs for interior and exterior stairs around machinery, tanks, and other equipment and stairs leading to and from floors, platforms, and pits.

Ladders **SHALL** comply with the Occupational Safety and Administration (OSHA) regulations outlined in 29 CFR 1910.25 for wood ladders, 29 CFR 1910.26 for portable metal ladders, 29 CFR 1910.27 for fixed ladders, and 29 CFR 1910.1053 for general ladders. The base of portable ladders **SHALL** be positioned a distance from the vertical wall equal to one-fourth (1/4) the working length of the ladder. Both self-supporting and non self-supporting portable ladders **SHALL** be capable of supporting at least four (4-X) times the maximum intended load except that each extra-heavy-duty type 1-A metal or plastic ladders **SHALL** sustain at least 3.3 times the maximum intended load.

7.2.1 General Ladder Precautions

- Before any ladder is used, the employee must inspect the ladder carefully for missing cleats, cracked or missing rungs or side rails, etc.

- Ladder inspections should be done monthly on a routine basis by the supervisor. Ladder inspections must be a part of the safety inspection program.
- Tag defective ladders so they may be repaired to the Original Equipment Manufacturer's (OEM) specifications or be replaced.
- Makeshift ladders are not permitted. Specially designed ladders are acceptable only when fixed ladders cannot be used.
- Ladders shall not be placed in a horizontal position and used as a runway or a scaffold unless designed for this purpose.
- All single ladders, the lower halves of extension ladders and stepladders are to be equipped with safety shoes. Metal spikes or spurs may be used when needed.
- Place ladders so that both side rails have secure footing. Provide non-skid footing on hard surfaces or securely fasten them to prevent slipping. Solid footing on soft ground is required to prevent ladder from sinking.
- Rungs must have a uniform 12-inch rung spacing.
- Stepladders may not exceed 20 feet in height. A substantial spreader must be provided to hold the front and back sections in open position.
- All portable ladders must be type IA (extra heavy duty) or I (heavy duty) design.
- All single and extension ladders should be equipped with a 6-foot long rope a 1/2-inch in diameter, or the equivalent, to secure the top of the ladders.
- Only one employee is allowed to work from a ladder at a time. If work requires two employees, a second ladder or scaffold should be used.
- Never use metal ladders or ladders with metal sides near electrical equipment or lines.
- **DO NOT** leave ladders unattended unless properly secured.
- Safety belts with lanyards are required when working more than ten (10) feet above ground level without standard railings or other fall protection.
- Never tie safety belts off on a ladder unless the ladder is properly secured.
- The bottom section of section ladders shall be equipped with safety shoes. The top section should always be securely tied off to something substantial.
- Never reach further than an arm's length from a ladder. Move the ladder as the work progresses to prevent an accident.
- Always shut down any moving equipment and machinery before climbing a ladder that is next to or extends above such equipment.

- When using a ladder for access to roofs, etc., the ladder must extend 3-feet above the upper rest.
- Never use ladders during high winds.

7.2.2 Straight Ladders

- Never climb higher than a third rung from the top on straight or extension ladders.
- Straight ladders must be equipped with safety shoes. The base or foot of the ladder should be placed one-fourth of the ladder length away from the vertical plane of the top support.
- Reference for quick positioning, place brightly colored strips of tape (or paint) on the side rails of a straight ladder (not an extension ladder) angled parallel to any vertical object the ladder is correctly placed against.

7.2.3 Step-ladders

- Make sure a stepladder is fully open before starting to climb.
- Never stand higher than the second rung from the top of a step-ladder.
- Never work from the top step of a step ladder (This does not apply to safety platform ladders).
- When working on a step ladder 10-feet or more above the ground, the ladder must be held by at least one other person (exception- safety platform ladder).
- Never use a step-ladder as a straight ladder.

7.2.4 Carrying Ladders:

- It is recommended that two people carry a ladder that is longer than 8 feet. To prevent the dangerous projection of the ladder, each person should be close to an end.
- If the ladder is light enough to be carried by one person, the ladder should be carried with the rear of the ladder close (down) to the ground and the front-end elevated so it will be above the head of anyone ahead of the carrier.
- Be alert for unexpected personnel in your path.
- Be careful approaching doorways and corners.

7.2.5 Ascending and Descending Ladders

- Always face the ladder when ascending or descending and use both hands.
- If material(s) must be handled, pull it up with a rope after climbing the ladder and becoming secure.
- Tools, parts, or other objects should be properly attached to the employee while climbing or use a hand line.
- Never slide down a ladder.

- Never stand higher than the second rung from the top of a stepladder or the third rung of a straight or extension ladder.
- Before climbing a ladder, check your shoes for mud, grease, etc.
- The combined weight of the employee and load should not exceed the load limit for the ladder.

7.2.6 General Stairways Precautions

- When carrying tools or materials, always keep one hand free to use the handrails to ascend or descend a stairway.
- Stairs to attic areas in warehouses, etc, must be equipped with adequate railings. All stairways should be well illuminated.
- All steps and stairs must be kept free of obstructions and slippery materials such as oil and grease.
- When walkways and stairways are provided, they must be used. Do not take shortcuts.
- Tools, equipment, and materials must not be left on stairways and walkways to prevent tripping hazards.
- Standard handrails must be provided for four (4) or more steps.
- Use handrails when walking up/down stairs or steps.
- The use of colors to mark elevation changes is encouraged.
- Secure hoses and cords away from steps and stairways.

8.0 Responsibility

It is the responsibility of **REPOWER USA** to appoint, train, and fully instruct a designated Competent Person (CP) to implement the Fall Protection Plan. He is responsible for the observational HSE checks of work operations and will facilitate the enforcement of the **REPOWER USA** Policies and Procedures. **REPOWER USA** will provide Fall Protection Systems for employees in work areas where an injury from a fall to a lower level is a recognized hazard. Each On-Site Field Supervisor is also responsible to enforce **REPOWER USA** Policies and Procedures and correct any unsafe acts or conditions immediately.

It is the responsibility of each employee to follow **REPOWER USA** Policies and Procedures and bring to the On-Site Field Supervisor and the **REPOWER USA** HSE Manager's attention any unsafe or hazardous conditions or acts that may cause injury to either himself/herself or any other employees.

The **REPOWER USA** HSE Manager shall prepare the Site Specific Fall Protection Program for each specified work site. **REPOWER USA** shall make exposure determination without regards to the use of Personal Protective Equipment (PPE) when the standard methods or procedures of protection are not feasible or a greater hazard would be created by their use.

8.1 Responsibility of the On-Site Field Supervisor

NOTE: Re-training is required when the previous training is rendered obsolete or the types of Fall Protection Systems or equipment change.

- **SHALL** complete a Job Site Safety Analysis (JSA) with the On-Site HSE Coordinator and/or **REPOWER USA** HSE Manager to determine requirements for the necessary Fall Protection Equipment and discuss final equipment usage with **REPOWER USA** employees.
- When work **SHALL** be performed at a recognized unguarded elevated height, the On-Site Field Supervisor may select from the following options:
 - **Fall Prevention** - eliminate the Free Fall Hazard during all phases of the job when traveling to and from elevated work areas and during the performance of the task at the elevated work area, by means of an appropriate guarded work platform (example: motorized man-lift, scaffolds, ladders or etc.).
 - **Fall Protection Equipment** - select and install Personal Fall Protection equipment to eliminate the Free Fall Hazard when traveling to and from elevated work areas and during the performance of the task at the elevated work area.

8.2 Responsibility of the On-Site Competent Person (CP)

NOTE: Re-training is required when the previous training is rendered obsolete or the types of Fall Protection Systems or equipment change.

- Know and fully understand the Fall Hazards in the work place.
- Know and fully understand the correct procedures for erecting, maintaining, disassembling, and inspecting the Fall Protection Systems to be used at the work place.
- Know and fully understand the use and operation of guardrails, Personal Fall Arrest Equipment, safety nets, warning lines, controlled access zones and other protection to be used.
- In the event that an alternate method of Fall Protection must be implemented the On-Site Competent Person (CP) shall have the responsibility of enforcing and implementing the identified safety monitoring requirements for the
 - site-specific Fall Protection Plan.
- Be able to identify the hazards involved while working with scaffolds
- Know and fully understand the correct procedures for the handling and storage of equipment and materials and the erection of overhead projections.
- Inform employees of fall hazards and/or unsafe workmanship and conditions.
- Be on same working surface and in visual sight and able to communicate with employees.
- Have no other assignments that takes attention from monitoring the functions.

- **SHALL** maintain a current written certification of his/her qualifications and provide **REPOWER USA** with copies for the Personal Files and Training Records.

8.3 Responsibility of the Fall Protection-User:

NOTE: Re-training is required when previous training is rendered obsolete or the types of Fall Protection Systems or equipment change.

- Each employee assigned to work at elevated heights has the responsibility of thoroughly inspecting their Personal Fall Protection Equipment anchor points, connecting means (example: lanyards), and body holding devices (example: body harness) prior to using the equipment. Any equipment problems noted **SHALL** be brought to the immediate attention of the On-Site Field Supervisor, the On-Site Competent Person (CP) and the **REPOWER USA** HSE Manager, or the On-Site HSE Coordinator.
- Any questions concerning the type of Personal Fall Protection Equipment best suited for a particular job should be directed to the attention of the On-Site Field Supervisor, the On-Site Competent Person and **REPOWER USA** HSE Manager, or the On-Site HSE Coordinator.
- All Fall Protection System installation questions should be brought to the attention of On-Site Field Supervisor, On-Site Competent Person and **REPOWER USA** HSE Manager or On-Site HSE Coordinator.

9.0 Fall Protection and Retrieval Equipment

Eliminate “free fall hazards” during all phases of the job by selecting and installing Personal Fall Protection Equipment when traveling to and from the elevated work area and during performance of the task at the elevated work site.

9.1 Safety Nets

Safety nets **SHALL** be provided when workplaces are more than twenty-five (25') feet above the ground or water surface or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors, motorized man-lifts, safety lines, or safety belts are impractical. Where safety net protection is required, operations **SHALL** not be undertaken until the net is in place and has been tested. Nets **SHALL** extend eight (8') feet beyond the edge of the work surface where employees are exposed and **SHALL** be installed as close under the work surface as possible but must not exceed more than twenty-five (25') feet below the work surface. Nets **SHALL** be hung with sufficient clearance to prevent the user's contact with the surfaces or structures below. Impact and load testing **SHALL** determine such clearances. The mesh size **SHALL** not exceed six (6") inches by six (6") inches. All new nets **SHALL** meet the accepted performance standards of 17,500 foot-pounds (minimum impact resistance as determined and certified by the manufacturers), and **SHALL** bear a label of the proof test.

Edge ropes **SHALL** provide a minimum breaking strength of five thousand (5,000) pounds. Forged steel safety hooks or shackles **SHALL** be used to fasten the net to its supports and connections between net panels **SHALL** develop the full strength of the net.

9.2 Fall Arrest Equipment

Fall Arresting, Work Positioning or Travel Restricting Equipment **SHALL** be used by the **REPOWER USA** employees working at elevated locations more than four (4' – 1.2 m) feet above the ground on poles, towers, or similar structures if other fall protection has not been provided. Purchased Fall Arrest Equipment and raw materials **SHALL** meet both ANSI and/or ASTM standard requirements.

The following requirements apply to Personal Fall Arrest Systems

- When stopping or arresting a fall, Personal Fall Arrest Systems **SHALL** limit the maximum arresting force on an employee to nine hundred (900) pounds (4-Kn) if used with a body belt.
- When stopping or arresting a fall, Personal Fall Arrest Systems **SHALL** limit the maximum arresting force on an employee to eighteen-hundred (1800) pounds (8Kn) if used with a body harness.
- Personal Fall Arrest Systems **SHALL** be rigged so that an employee can neither free fall more than six (6' – 1.8m) feet nor contact any lower level.
- If vertical lifelines or drop-lines are used, only one employee may be attached to any one lifeline.
- Snap-hooks **SHALL** not be connected to loops made in webbing-type lanyards.
- Snap-hooks **SHALL** not be connected to each other.

9.3 Guardrail Systems

The following requirements apply to Guardrail Systems

- Top edge height of top rails, or equivalent system members, **SHALL** be forty-two (42" – 1.1m) inches plus or minus (+/-) three (3" – 8cm) above the walking/working level. When conditions warrant the height of the top edge may exceed forty-five (45") inches in height, provided the guardrail system meets all other criteria.
- Guardrail systems **SHALL** be capable of withstanding, without failure, a force of at least two-hundred (200) pounds (890N) applied within two
 - (2" – 5.1cm) inches of the top edge, in any outward or downward direction, at any point along the top edge.
- Guardrail systems **SHALL** be surfaced to prevent injury to an employee from punctures or lacerations and to prevent snagging their clothing.
- Guardrails used around holes **SHALL** be erected on all unprotected sides or edges of the hole.

- Guardrails systems around holes used for the passage of materials **SHALL** not have more than two (2) sides provided with removable guardrail sections to allow the passage of materials. These removal guardrails **SHALL** be re-installed after each use.

10.0 Fall Protection/Safety Harness

- Employees must wear safety harnesses when working six (6) feet or more above the ground unless other adequate protection against falling is provided.
- Safety climbers that are installed on ladders attached to vessels or other equipment must be used. Safety climbers have safety harness attachments that allow personnel to climb without detaching their safety belts after each step.
- In offshore operations, harnesses must be worn outside protective handrails and should be worn any time personnel is six (6) feet or more above a floor level.
- The harness should fit snugly and comfortably. No more than the necessary slack in the line should be allowed (3-feet maximum).
- Harnesses must be regularly inspected for excessive wear or damage. Any harnesses worn or damaged to the extent of possible failure should be destroyed, not discarded.

11.0 Rescue and Emergency Procedures

The On-Site Field Supervisor **SHALL** have the responsibility, in coordination with the **REPOWER USA** HSE Manager and the On-Site HSE Coordinator, to determine whether “Standby” (*) or “Available” (**) **Rescue Services** are required for the specific Fall Protection and Retrieval. The criteria for this determination **SHALL** be based on the known or potential hazards, Personal Protective Equipment (PPE), and the ability to self-rescue.

The following requirements apply to employers who have employees trained in Fall Protection Rescue to perform rescue services:

- The location **SHALL** ensure that each member of the Rescue Service Team is provided with and is trained in the proper use of Personal Protective Equipment (PPE) and rescue equipment necessary for making rescues at no cost to employee.
- Each member of the Rescue Service Team **SHALL** be trained to perform his/her assigned rescue duties and each member **SHALL** also receive the training required of a Competent Person (CP).
- Each member of the Rescue Service Team **SHALL** practice making vertical Fall Protection type rescues. This training **SHALL** be completed at least once every 12 months and simulate the types of fall situations where a rescue would be needed. This will be done using dummies, mannequins, or actual person(s) and through the use of representative spaces with respect to the configuration, opening size, and accessibility.

- Each member of the Rescue Service Team **SHALL** be trained in basic First Aid and Cardiopulmonary Resuscitation (CPR). At least one member of the Rescue Service Team **SHALL** hold current certification in First Aid and Cardiopulmonary Resuscitation (CPR).
- The following requirements apply to employers who have Contracted Rescue Service Teams (example: Local Fire Departments or Emergency Services) to perform Fall Type Rescue Services:**

- Provide a copy of Fall Protection Policy and Procedures for review.
- Provide adequate time for the Contracted Rescue Service Teams (example: Local Fire Departments or Emergency Services) to review permits and procedures, examine Confined Space Entry site, and practice Rescue Procedures.
- Inform the Rescue Service Team of the known hazards or potential hazards that they may confront.
- Provide the Rescue Service Team with access to all possible Fall Protection Areas from which rescue may be necessary so they can develop appropriate procedures and practice rescue operations.

The following requirements apply to employers who depend on the Client/Host Rescue Service Team Personnel to perform rescue services:

- Review the Client/Host Rescue Service Team on-site rescue procedures.
- Provide time for the Client/Host Rescue Service Team to practice Fall Rescue procedures at the area with the employer's on-site personnel.
- Provide the Client/Host Rescue Service Team with copy of employer's Fall Protection Policy and Procedures.
- Ensure in contract language, that the Client/Host agrees that the Client/Host Rescue Service Team will be available for use during any rescue or emergency at the employer's site on the Client/Host property for Fall Protection Rescue requirements.

To facilitate Fall Rescue by retrieval equipment and/or systems, methods SHALL be provided and used unless the retrieval equipment would increase the overall risk of the entry or would not contribute to the rescue of the affected employee. Retrieval equipment and/or systems SHALL meet or exceed the following requirements:

- Each employee **SHALL** use a chest or full body harness with a retrieval line attached to the center of the employee's back near shoulder level or above employee's head.
 - Wristlets may be used in lieu of the full body harness if the employer can demonstrate that the use of a full body harness is unfeasible or creates a hazard and that the use of wristlets is the safest and most effective alternative.
 - **NOTE:** Using wristlets is the least desirable method of lowering or raising employees and should be considered only in "extreme" circumstances.
- The other end of the retrieval line **SHALL** be attached to a mechanical retrieval device or a fixed point in such a manner that a rescue can begin as soon as the Competent Person (CP) becomes aware that a rescue is necessary.

- A mechanical retrieval device **SHALL** be available to retrieve an employee from vertical spaces that are more than 5 feet deep.

12.0 First Aid and Medical Services

- There shall always be someone in the area of the work site that is currently trained in Cardiopulmonary Resuscitation (CPR) and basic First-Aid procedures.
- Employees shall be aware of the location of the nearest First-Aid equipment and how to obtain emergency assistance and medical attention.
- If an injured employee is exposed to a substance for which a Material Safety Data Sheet (MSDS) or other similar written information is required to be kept at the work-site, the Material Safety Data Sheet (MSDS) **SHALL** be made available to the medical facility treating the exposed employee.

13.0 Recordkeeping

REPOWER USA shall maintain a written record of the trainings including safety drills, inspections, tests, and maintenance. All records shall be maintained in accordance with existing state and federal regulations.

14.0 Review and Revisions

The **REPOWER USA** HSE Manager has the responsibility of reviewing and revising the Fall Protection Policies and Procedures on an annual basis.

- **Reviews and Revisions SHALL be immediate for any of the following:**
 - Any unauthorized use of Fall Protection Equipment.
 - Discovery of a hazard not covered by the current Fall Protection Policies and Procedures.
 - Any employee and/or Client/Host complaint.
 - Occurrence of any injury or near misses.
 - As necessary due to procedure enhancements or process changes.
 - As regulations or standards change.

15.0 Definitions

These definitions are provided here for the benefit of **REPOWER USA** employees for training and as a ready reference to be used to ensure the clarification of information.

15.1 Anchorage

A secure point of attachment for lifelines, lanyards or deceleration devices

15.2 Body Belt (Safety Belt)

A strap with the means of securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device

15.3 Body Harness

A configuration of straps which may be secured about the employee in a manner that will distribute the Fall Arrest Forces over the thighs, pelvis, waist, chest, and shoulders with the means for attaching it to other components of a Personal Fall Arrest System.

15.4 Buckle

Any device for holding the body belt or body harness closed around the employee's body.

15.5 Competent Person

Is a person who is trained in being capable of identifying existing and predictable hazards in the surroundings or working conditions which are hazardous or dangerous to employees, and who has the authority to take prompt corrective measures to eliminate them.

15.6 Connector

A device, used to couple (connect) parts of the Personal Fall Arrest System and Positioning Device Systems together. It may be an independent component of the system (such as a carabiner) or it may be an integral component of part of the system (such as a buckle or d-ring sewn into a body belt or body harness or a snap-hook spliced or sewn to a lanyard or self-retracting lanyard).

15.7 Controlled Access Zone (CAZ)

An area in which certain work (e.g., overhead bricklaying or etc.) may take place without the use of guardrail systems, Personal Fall Arrest Systems, or safety nets systems and access to the Zone is controlled.

15.8 Dangerous Equipment

Equipment (such as pickling or galvanizing tanks, degreasing units, machinery, electrical equipment, and other units) which, as a result of form or function, may be hazardous to employees who fall onto or into such equipment.

15.9 Deceleration Device

Any mechanism (such as a rope grab, rip-stitch lanyard, specially-woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards, etc.) which serves to dissipate a substantial amount of energy during a Fall Arrest or otherwise limits the energy imposed on an employee during Fall Arrest.

15.10 Deceleration distance

The additional vertical distance a falling employee travels, excluding lifeline elongation and free fall distance, before stopping and at which the Deceleration Device begins to operate. The deceleration distance is measured as the distance between the location of an employee's body harness attachment point at the moment of activation (at the onset of Fall Arrest Forces) of the deceleration device during a fall and the location of that attachment point after the employee comes to a full stop.

15.11 Equivalent

Alternative designs, materials or methods to protect against a hazard which the employee can demonstrate and will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.

15.12 Failure

Load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

15.13 Free fall distance

The vertical displacement of the Fall Arrest attachment point on the employee's body belt or body harness between the onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance and lifeline/lanyard elongation but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and Fall Arrest Forces occur.

15.14 Friction

The resistance between surfaces (such as your shoes and the ground surface). Loss of friction results in falls (example: slips on ice when shoes can't "grip" with the surface).

15.15 Gravity

The force that pulls you to the ground once a fall is in process. The human body has automatic systems for balance – your eyes, ears and muscles working together to keep your body close to its natural center of balance. Falls occur when your center of gravity (center of balance) shifts too far and can't be restored to normal.

15.16 Guardrail System

A barrier erected to prevent employees from falling to lower levels.

15.17 Hole

A gap or void 2" (5.1 cm) or more in its least dimension in a floor, roof, or other walking/working surface.

15.18 Unfeasible

that it is impossible to perform the construction work using a conventional Fall Protection System (such as the guardrail system, safety net system or Personal Fall Arrest System) or that it is technologically impossible to use any one of these systems to provide Fall Protection.

15.19 Lanyard

A flexible line or rope, wire rope, or strap, which generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline or anchorage.

15.20 Leading edge

The edge of a floor, roof or form-work for a floor or other walking/working surface (such as the decks or elevated areas) which change location as additional floor, roof, decking, or form-work sections are placed, formed or constructed. A leading edge is considered to be an “unprotected side” or “edge” during periods when it is not actively and continuously under construction.

15.21 Lifeline

A component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline) or for connection to anchorage at both ends to stretch horizontally (horizontal lifeline). This serves as a means for connecting components of a Personal Fall Arrest System to the anchorage.

15.22 Low-slope roof

A roof having a slope of less than or equal to a 4 to 12 pitch.

15.23 Lower levels

Those areas or surfaces to which an employee can fall. Such areas or surfaces include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, waters, equipment, structures or portions thereof.

15.24 Mechanical equipment

All motors or human propelled-wheeled equipment used for roofing work, except wheelbarrows and mop-carts.

15.25 Speed and size of the moving object affect momentum

Therefore, the more you weigh and the faster you are moving, the harder the fall.

15.26 Opening

A gap or void 30” (76 cm) or more high and 18” (48 cm) or more wide, in a wall or partition, through which employees can fall to a lower level.

15.27 Personal Fall Arrest System

A system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, and a body harness and may include a lanyard, deceleration device, lifeline or suitable combinations of these. **NOTE: OSHA Regulations state that as of January 1, 1998 the use of a body belt as Fall Arrest equipment is PROHIBITED.**

15.28 Positioning device system

A body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface (such as a wall and work with both hands free while leaning).

15.29 Rope grab

A deceleration device, which travels on a lifeline and automatically, by friction, engages the lifeline and locks to arrest the fall of an employee. A Rope Grab usually employs the principle of inertial locking, cam/level locking, or both.

15.30 Roof

The exterior surface on the top of a building. This does not include floors or form work, which, because a building has not been completed, temporarily become the top surface of a building.

15.31 Safety Monitoring System

A safety system in which a competent person is responsible for recognizing and warning employees of Fall Hazards.

15.32 Self-retracting lifeline/lanyard

A deceleration device containing a drum-wound line which can be slowly extracted from or retracted onto the drum under slight tension during normal employee movement and which, after the onset of a fall, automatically locks the drum and arrest the fall.

15.33 Snap-hook

A connector comprised of a hook-shaped member with a normally closed keeper, or a similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object. The locking type snap-hook has a self-closing, self-locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection.

15.34 Steep roof

A roof having a slope greater than a 4 to 12 pitch.

15.35 Toe-board

A low protective barrier that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel.

15.36 Unprotected sides and edges

Any side or edge (except at entrances to points of access) of a walking/working surface (such as the floor, roof, ramp or runway where there is no wall or guardrail at least 39" (1.0 m) high).

15.37 Walking/working surface

Any surface, whether horizontal or vertical on which an employee walks or works. These include, but are not limited to, floors, roofs, ramps, bridges, runways, form-work and concrete reinforcing steel, but does not include ladders, vehicles, or trailers on which employees must be located in order to perform their job duties.

15.38 Warning line system

A barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge. These Warning Line Systems designates an area in which roofing work may take place without the use of a guardrail, body belt or safety net systems to protect employees in the area.

15.39 Working area

That portion of a walking/working surface where job duties are being performed. Each Project Management and HSE Team shall determine if the walking/working surfaces on which its employees are to work have the strength and structural integrity to support the employees. Employees shall be allowed to work on the surfaces only when they have the requisite strength and structural integrity.

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Section III:

7.1.12 – RPSHSE – 12

Fall Protection - Slips, Trips and Falls

Form 1 - Control Zone System

Control Zone System

A Controlled Access Zone is defined as an area designated and clearly marked, in which leading edge work may take place without the use of guardrails, system nets or fall arrest systems to protect the employees in the work area.

Control Access Zones shall comply with the following provisions:

- When using controlled access to areas where leading edge or other operations are in progress, the controlled access zone shall be defined by a control line or by other means that restricts access.
- The control line shall extend along the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected or leading edge.
- Control lines shall be connected on each side to a guardrail system or wall.
- Control lines shall consist of ropes, wire, tapes, or equivalent materials with supporting stanchions as follows:
 - Each line shall be flagged and/or clearly marked with a highly visible material at intervals of not more than 6 feet.
 - All access to the Controlled Access Zone is restricted to "Authorized Entrants Only".
 - All **REPOWER USA** employees that are permitted into the Controlled Access Zone shall be listed in the appropriate sections of the Fall Protection Plan checklist and be visibly identifiable to the On-Site Competent Person (CP) prior to entry.
 - The On-Site Competent Person shall ensure that all protective elements of the Controlled Access Zone be implemented prior to the start up of a job.
 - In a Controlled Access Zone if no other methods have been implemented for Fall Protection, a safety monitoring system shall be implemented.

16.0 Appendices

Section III:

7.1.12 – RPSHSE – 12

Fall Protection - Slips, Trips and Falls

Form 2 - Fall Protection Checklist “A”

Fall Protection Checklist "A"

Item No.	Description of Plan Contents	YES	NO	Remarks
1.	Statement of Company Policy			
2.	Fall Protection Systems to be used at this job site.			
3.	Implementation Plan of Fall Protection Plan			
4.	Was conventional Fall Protection considered for this job site (leading edge operations)?			
5.	What additional Fall Protection measures have been considered for this job site?			
6.	How will Site-Specific Fall Protection Plan be enforced?			
7.	Accident Investigation Documents and Profiles			
8.	Documented Site-Specific Fall Protection Plan changes.			

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Section III:

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Fall Protection - Slips, Trips and Falls

Form 3 - Fall Protection Checklist “B”

Fall Protection Checklist "B" (Site Specific)

- 1.) Location of Job: _____
- 2.) Date Site-Specific Fall Protection Plan was prepared or modified: _____
- 3.) Name of person preparing the plan: _____
- 4.) Position of person preparing the plan: **REPOWER USA HSE Manager**
- 5.) Person/position approving the plan: **REPOWER USA HSE Manager**
- 6.) Position of Responsibility:
On-Site Field Supervisor and/or On-Site Competent Person (CP)
- 7.) Name of person supervising the plan: _____
- 8.) Location of the Statement of the Company Policy: _____
 - ❖ Site Specific Fall Protection Plan is a supplement to the **REPOWER USA** Fall Protection Plan.
 - ❖ Through pre-job meetings, Job Safety Analyses (JSA), Job Hazard Analyses (JHA), and training and safety meetings, **REPOWER USA** shall ensure that each exposed employee is aware of the **REPOWER USA** General Site-Specific Fall Protection Plan and HS&E provisions and requirements.
- 9.) Location of Site-Specific Fall Protection Plan: _____
 - ❖ Plan shall identify specific activities that require a non-conventional Site-Specific Fall Protection Plan.
 - Leading edge work.
 - Unprotected work edges or sides.
 - Use and implementation of information from pre-job meetings, Job Safety Analyses (JSA), Job Hazard Analyses (JHA), training and HS&E meetings.
 - Site-Specific activities requiring non-conventional Fall Protection.
- 10.) Duties of On-Site Competent Person (CP): _____
- 11.) Hazard Awareness Training: _____ YES: _____ NO: _____
 - ❖ **NOTE:** Fall Protection User Hazard Awareness Training shall include, but is not be limited to, the following:
 - Recognition of fall hazards in the work place.
 - Methods of fall hazard avoidance using established work practices that **REPOWER USA** employees have been made aware of.
 - Recognition of unsafe practices or working conditions that could lead to a fall, such as windy conditions.
 - Proper function, use and operation of safety monitoring systems, guardrails systems, body harnesses systems, control access zones, and additional protection to be used.
 - Correct fall protection procedures and their completion sequence.

Section III:

7.1.12 – RPSHSE – 12

Fall Protection - Slips, Trips and Falls

Form 4 - Fall Protection Equipment Analysis Checklist

Fall Protection Equipment Analysis Checklist (Page 1)

Item No.	Description of Check Function	YES	NO	REMARKS
1.	Does the Fall Protection Harness have retractable lifelines and lanyards?			
2.	Can employees move freely?			
3.	Can the employee's lifelines become entangled?			
4.	Do contaminants present in retractable mechanism?			
5.	Can a lifeline trap the employee?			
6.	Are holes greater than 12"x12" have perimeter guards or coverings?			
7.	Can the Fall Protection anchorage be placed on equipment or structures?			
8.	Can temporary structural supports be used for anchorage?			
9.	Does the use of temporary anchorage points reduce or increase the potential for fall exposure? (Indicate YES or NO in the appropriate block and define under remarks)			
10.	Can cables be strung horizontally between two columns to use as tie-off lines?			
11.	Will using tie-off lines increase employee's exposure?			
12.	Will the employee be above the tie off line?			
13.	Will the employee become entangled with other employee's fall protection equipment?			
14.	Will the tie-off line be directly above the employee's head?			
15.	Will a sag in the horizontal tie off line cause increased acceleration during a fall?			

Fall Protection Equipment Analysis Checklist (Page 2)

Item No.	Description of Check Function	YES	NO	REMARKS
16.	In the event of a fall will the employee swing into an obstruction?			
17.	During the implementation of the Fall Protection Plan are the products and materials to be used on job site for fall protection listed?			
18.	How will listed products or equipment be used to complete the job?			
19.	How will conventional Fall Protection be considered?			
20.	What are the current conditions or factors that may effect the Site-Specific Fall Protection System?			
a.	Events causing sudden movement.			
b.	Employee error.			
c.	Unstable ground.			
d.	Mechanical failure of equipment.			
e.	Structural failure.			
21.	What are the current weather conditions?			
a.	High and gusting winds.			
b.	Snow/rain/ low visibility.			
c.	Intense cold – slows employee reactions or causes equipment mechanical problems.			
22.	Structural or Product Conditions			
a.	Lifting eye failure.			
b.	Bearing failure.			
c.	Structure shifting.			
d.	Bracing failure.			
e.	Product failure.			
23.	Human error			
a.	Use of incorrect procedures.			
b.	Misjudging of elevation, descent speed or angle.			
c.	Misunderstanding of signals.			



Section III RPSHSE 7.1.13

Valid from: November 2008

Revision Profile

Rev.	Date	Name	Approval Signature	Remarks
0	11/08	Owens O'Quinn QHSSE Consultant	On File	ORIGINAL
0	11/08	Tammy Conekin	On File	ORIGINAL
1				
2				
3				
4				
5				

Original Review Progress

Date	Reviewer	Signature
11/08	J.K. Barrilleaux – Grammar/Technical Format <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Owens O'Quinn – QHSSE Consultant <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Tammy Conekin – Head of Service	On File



Section III: 7.1.13 REPOWER USA – 13
Cranes, Lifting, Hoisting and Rigging Equipment

Contents

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1.0 Introduction

All materials that are too large or too heavy for handling safely by hand shall be handled by power-operated equipment (i.e. cranes and/or mechanical lifting and hoisting equipment). When power-operated equipment is available, it should be used on large jobs, or on the handling of small materials for extended periods of time. This practice saves time and increases safety.

All power-operated equipment, including cables, blocks, safety hooks, slings, winches, etc. must be inspected in accordance with the applicable regulations and shall be kept in good operating condition at all times.

Slings, bridles, ties, etc. must be of the proper size and strength for the load to be lifted and shall be securely fastened to the load. **NEVER** use hoisting equipment if signs of excessive wear and/or damage is present. **Destroy damaged or worn equipment, never discard it.**

If you cannot see every part of the operation to be performed clearly, have another person (a signal person) assist you. When a signalman is used, the signalman shall be in a position to see every phase of the operation and must be clearly seen by the operator. Use a standard hand signal system on all crane operations. Only one signal person should be designated. **Obey an emergency STOP signal given by anyone.** All other commands are to be given by the signal person only.

Never get under a suspended load. If it is necessary to guide a load, use guidelines of sufficient length for the complete safety of all personnel involved.

When internal combustion engines are the drivers of a particular model of crane test shall be made and area monitored to ensure that employees are not exposed to unsafe concentrations of toxic gases or deficient oxygen levels.

Any required modification and/or repair **MUST** be completed by the Original Equipment Manufacturer (OEM) recognized repair shop under the authority of the OEM with appropriate written approval.

2.0 Responsibilities

It is the responsibility of the Crane Operator to inspect and perform periodic operating tests to ensure the equipment is safe for use. The Crane Operator is also responsible for ensuring the rated load capacity is not exceeded and to position the crane properly with the correct boom angle for the load.

However, another key element directly related to the successful moving of heavy loads is the rigging process which involves the selection and proper use of slings, chains, ropes, etc. and which will meet the demands of the job. This rigging process will often be required before a crane can be utilized; therefore, the responsibility for ensuring that the safe equipment and procedures are utilized will rest directly with those personnel involved.

Consider all possible tie/suspension points on overhead structures and evaluate the load bearing potential. If available, use only those structures specifically designed for lifting heavy equipment and components. Piping and unit sub-assemblies should only be used when there is **NO OTHER WAY** and it has been determined that the load can be supported **SAFELY** without causing injury to personnel and/or property damage.

3.0 Lifting Practices

3.1 General Precautions

- Safety shall be the first consideration in the handling of materials
- Know the weight of the equipment or material being lifted (load weight) and know the capacity of the lifting equipment in the method which is to be used. All rigging equipment **MUST** be tag with a non-removable tag showing safe working load.
- Familiarize yourself with the types of slings available for the easiest and safest lifting
- Inspect the lifting equipment before and after it is used to make certain it is in good condition
- Report any lifting equipment that appears to be unsafe
- Tag and remove damaged lifting equipment so it can not be used to make another lift
- Report all accidents causing damage to lifting equipment, operating equipment, and machinery
- Store lifting equipment in the proper racks or on the hooks provided
- Have lifting equipment inspected by competent inspectors regularly
- Make lifts gradually until the slack is completely out of lifting gear. It is possible that the weight may double because of shock loading
- Make certain the load can be lifted in a secure, stable position
- Remove all loose pieces such as pipes, wood blocks, and lifting gear from the load before it is moved. Make sure all rigging not in use is removed from work area and properly stored.
- Signal and clear the way of a traveling load. Make certain the load is high enough to clear everything in its path
- Make certain all personnel are clear of a moving load. No personnel are permitted under any suspended load. Tag lines shall be used on all lifts.
- The operator shall refuse to move a load if he/she is not satisfied with the way the load is attached
- **NEVER**
 - Neglect to put safety first
 - Lift a load any higher than is necessary to move the load safely
 - Lift or move a load over the heads of personnel
 - Ride on a headache ball, hook, or load

3.2 Lifting Calculations

- Know that as the angle of each leg of the sling increases from the vertical position, the load on that leg increases. The stress on each leg can be calculated by dividing the load weight by the cosine of the angle

- For bridle slings and basket hitches where both legs are not vertical, use Chart B for the computation of the sling arrangement rated capacity. Rated capacity = Single-leg capacity X the number of legs X the Cosine of Angle A
- Slings used in choker configurations have a safe lifting capacity of seventy (70%) percent of the rated capacity if the choke angle is 120° or greater

4.0 Cranes

4.1 General

- All overhead cranes shall meet the design specifications of the American National Standard B30.20, "Safety Code for Overhead and Gantry Cranes".
- It is REPOWER USA's practice to **ALWAYS COMPLY** Original Equipment Manufacturers (OEM)
Stated and/or implied specifications and limitations applicable to operation of any and all Cranes and derricks. Should this information not be readily available the crane/derrick will be placed out of service until appropriate confirmation of OEM's specifications and limitations are provided and available to on-site personnel.
- **Mark plainly** on the side of the crane the rated load capacity of the crane. The load chart and boom angle chart should also be located at the operator's position
DO NOT load the crane beyond its rated capacity
- **DO NOT** leave suspended loads unattended. The operator shall neither perform any other work nor leave the controls until the load has been safely landed
- Operators shall lock the load and boom hoists and set the crane cab lock before leaving the cab
- **DO NOT** use overhead cranes to lift or support personnel. **DO NOT** pass loads over personnel. When it is absolutely necessary to swing loads over areas where other employees are working, a warning must be given so they can move out of the way. If possible, the area should be roped off
- Heavy machinery, equipment, or the parts thereof that are suspended by slings or hoists should also be substantially blocked or cribbed before workers are permitted to work underneath or between them
- Exercise extreme caution while working near high voltage electrical wires or equipment. Maintain a minimum clearance of ten feet between the line and any part of the boom or load. The rocking motion of the boom under a varying load must be considered when maintaining a safe distance from any electrical conductor
- If the crane contacts a high voltage line and can not be disengaged by the crane movement, do not step from the crane to the ground in a way that you will touch the ground and the crane simultaneously
- When necessary, use **non-electrical conducting** tag lines to guide loads unless their use creates an unsafe condition
- Crane booms shall be lowered to the ground in the provided crane boom rest when there is danger of high wind. Cranes with raised booms left overnight must have the load line tied off to a permanent structure to prevent pivoting. Rest the crane boom in its cradle when the crane is not in operation whenever possible

- All parts of every crane, especially those subject to impact, wear, and rough usage must have the adequate strength for maximum services. Gears and other moving parts must be totally enclosed, covered by screen guards, or out of reach. Keep cranes clean, well maintained, and lubricated
- With each crane there shall be an appropriately sized 5BC or higher rating CO₂ or Dry Chemical fire extinguisher. The fire extinguisher shall be located in the crane cab or at a readily available location on the crane to provide adequate access by the Crane Operator. The Crane Operator shall be trained in the proper use of the fire extinguisher
- Cranes should be placed on a firm, level foundation and properly secured before being operated
- No one shall ride on leads, buckets, or hooks suspended from cranes
- Personnel shall always stand clear of a cable under tension
- Do not suspend the loads from cranes for extended periods of time
- Use cranes for lifting loads in the vertical direction only
- All lifting hooks should be self-closing
- ONLY approved and proper hand signals will be used as set forth within the ANSI Standards and API RP 2D.
- All mobile type cranes must meet the standard as set forth in ANSI 30.5 -1968.

4.2 Crane Operator Qualifications

- Cranes shall be operated only by the following:
 - Certified or otherwise qualified operators designated by the supervisor
 - Trainees under the direct supervision of a certified/qualified operator
 - Maintenance, test personnel, and inspectors, when necessary, in the performance of their duties
 - Must meet the required physical qualifications, pass a physical and a written examination to determine their capabilities to read load charts and calculate loads for the applicable crane types they operate.
- The On-Site Field Supervisor is responsible for ensuring that only those individuals specifically trained in the operation of cranes and authorized by the On-Site Field Supervisor are allowed to operate the crane. The On-Site Field Supervisor must ensure that employees receive instruction on the proper use, maintenance, application, and inspection of overhead hoisting equipment and material handling devices prior to use.

4.3 Inspection of Cranes

- **Daily Inspections**

The operator as the assigned competent person is responsible for the daily inspection of the crane prior to use for loose or defective gears, runways, railings, warning bells, signs, switches, cables, etc. Use Appendix III as a guideline for this inspection. Report defects to the location supervisor and take the crane out of service until repairs are made. Daily inspections have to be documented.

- **Monthly Inspections**

Monthly inspections must be reported, using Appendix II, and documented. Exception: A crane which has been idle for a period greater than one month, but less than six months must be inspected before being placed in service or every six months, whichever is earlier.

- All modifications, extensions, replacement parts, or repairs of equipment must maintain at least the same factor of safety as the originally designed equipment.
- **NOTE: When a crane is down for repair and/or maintenance an OUT-OF-SERVICE sign will be placed where it is clearly visible to all personnel that might attempt to operate the crane. The sign will remain in place until crane is placed back in service.**

4.4 Cranes In-Transit

- The boom should always be carried "in line" with the direction of motion.
- The superstructure should be secured against rotation, except when negotiating turns, with an operator in the cab.
- The empty hook should be latched or otherwise restrained so it cannot swing freely. The block can be drawn up close to the sheaves to reduce swinging. A crane with or without a load must not travel with the boom so high that it may bounce back over the cab.
- Never drive a crane up an incline in excess of 10° off center unless the boom is trailing directly behind.
- Never drive a crane onto soft ground without the aid of planks or mats.
- When maneuvering a crane within a confined area, two ground guides must be provided while the crane is in motion.
- When a crane is out of service due to the routine maintenance or repair of a defective part a warning sign shall be posted until the repairs or routine maintenance is completed.

5.0 Hoists

5.1 General

- The rated load of each hoist shall be legibly marked on the hoist, load block or some equally visible space. This marking must be clearly legible from the ground or floor.
- Each electric or pneumatic hoist motor shall be provided with a brake arranged so that the brake will be applied when the power is cut off from the hoist. The brake must have sufficient holding power to sustain no less than 1-1/2 times the rated load.
- Each overhead electric and pneumatic hoist motor shall be equipped with an effective enclosed type limit switch. Place and arrange the switch to disconnect the motor and apply the brake in time to stop the motor before the hook passes the highest point of safe travel.
- Every hoist chain, wire rope, or fiber rope on hoisting drums shall be of the sufficient length that the hoist hook at least reaches the floor, ground, or the lowest working level.

- The operator shall not leave his position at the controls while a load is suspended from the hoist unless an emergency exit is required.
- Lift loads with hoists in the vertical direction only.
- **DO NOT** use hoists to lift or support personnel. **DO NOT** pass loads over personnel.

5.2 Inspection of Hoists

- **Daily Inspections**

The operator is responsible for the **DAILY** inspection of the hoist and rigging equipment. Daily inspections do not have to be documented.

- **Monthly inspections** must be performed on hoist equipment and documented

Exception: A hoist which has been idle for a period greater than one month but less than six months must be inspected before placing it in service or every six months, whichever is earlier.

All modifications, extensions, replacement parts or repairs of equipment shall maintain at least the same factor of safety as the originally designed equipment.

5.3 Types of Hoisting Equipment/Inspections

5.3.1 Ropes

- **General**

- Nylon ropes stretch appreciably when loaded, and have high elasticity when the load is released. It has a much higher working elasticity on repeated loading than any other synthetic-fiber rope or Manila, Sisal, or cotton ropes. Much of the permanent elongation at any given load occurs on the first loading and practically all of it during the first few loads. It is critical to keep in mind the elasticity and permanent stretch factors of nylon ropes. In some instances, stretch and working elasticity might be desirable, whereas, in other operations these characteristics might be undesirable or hazardous.

- **Inspections**

- Ropes should be inspected every 30 days; however, prior to each use, look for signs of deterioration, dark brown or black spots (rotting), kinks, frayed or broken fibers and abrasions. Inspect the inner fibers by untwisting the rope; they should be clean, bright, and unspotted. Be particularly critical of rope that has been used around acids or caustic materials. As a general rule, rope that has lost its pliability, stretch, or has fibers that have lost their luster and appear dry and brittle should be replaced.

5.3.2 Rope Slings

- **Inspections**

Inspections are critical (especially when using manila rope slings), due to the high tensile strength requirement. Inspect all splices, particularly where hooks and rings are attached.

If a sling shows evidence of cuts, excessive wear, or other damage, destroy it. If the manila rope sling has been in use for six months, reduce the load by half even though there is no sign of wear.

5.3.3 Wire Rope

- **General**

Wire ropes consist of many individual wires laid into a number of strands which are laid around a center core. The strength of the wire rope is determined by:

- The size of the wire used
- The number of wires in the strands
- The number of strands
- The type of core

When using a wire rope for a particular job, consider the rope's:

- Strength
- Flexibility
- Resistance to fatigue, abrasion, crushing, rotation, and distortion

Refer to the manufacturer's specifications for the rated safe working load for the rope being used (tag new ropes). Avoid overloading; it causes severe stretching of the rope.

- **Inspection**

Wire ropes should be inspected once per month; however, they should be examined prior to each use for loose clamps, broken strands, and kinks. As a general rule, wire ropes should not be subjected to a working load greater than one-eighth (1/8) it's breaking strength. Each wire rope sling should have a tag attached indicating the load capacity, the original length or reach, the date of issue, and the manufacturer. Wire rope inspections should be thorough and complete. Deciding when a wire rope has reached the limit of its safe usage and must be discarded is difficult for the inspector. It is poor economy to discard an expensive wire rope before it is necessary. Likewise, it is dangerous, and may prove more costly, to continue its use beyond its limit.

- **Replace Wire Ropes when:**

- Six or more randomly distributed wires are broken in one rope lay
- Three or more wires are broken in one strand in one rope lay
- Wear of the rope exceeds 1/8th of the original diameter of the rope
- It is stretched more than 1/2-inch in 8-feet for a 6-strand rope

- It is stretched more than 1/2-inch in 5 feet for a 8-strand rope (mark new ropes either 5 or 8-feet, depending on the number of strands, for future measurement guides)

Estimate the rope condition at the section showing the maximum deterioration.

Wire ropes requiring repair must only be repaired by the manufacturer, or, otherwise, replaced immediately. Lubricate wire ropes to prevent corrosion with thin lubricants which are fluid at normal temperatures and include rust inhibitors.

5.3.4 Chain and Chain Slings

- **General**

Do not use chains for general rigging when wire rope is available to use. Wire rope gives more of a warning when it is about to fail. Use only alloy steel chains for lifting purposes. These chains generally have a small stamp on each link for identifying it as an alloy. **DO NOT** exceed the rated safe working load of a chain. **DO NOT** shorten chains by twisting, knotting, or inserting nuts and bolts. When wrapping chains around sharp corners, use pads to prevent damage to the links.

- **Inspections**

Chains should be checked and certified on at least a semi-annual schedule. Chain links should be certified in gauge lengths of 1 to 3 - feet when new and their measurements recorded and tagged (see wire ropes) for future reference. Chains should be discarded if they show a stretch (including link wear) of more than five (5%) percent. Inspect the chain for small dents, peen marks, and bright polished surfaces on the links. These signs indicate that the chain has been work-hardened or fatigued. Broken chains shall not be spliced by inserting a bolt between two links or by using cold shuts to replace links. Before making a lift, the chain should be checked for cracked links, kinks, knots or twists. Cracked links, regardless of the size, indicate that a chain is unsafe and must be removed from service or sent to the manufacturer for repair.

These inspections may be more frequent but are not limited to an investigation of an accident/incident/near miss or a change in the equipment or process.

5.3.5 Chain Falls, Come-Alongs, or Block and Tackle

- **Chain Falls**

Lifting chain wheels are low speed, geared for precision lifting, and have built-in no-slip brakes. There are two hooks; one is a swivel hook on the housing and one is at the end of the lifting chain. Chain falls are available in a variety of weight capacities ranging from a 1/4-ton to 10 tons.

Chain falls are designed primarily for vertical lifting. Make lifts truly vertically to prevent a shifting, swaying load and undue wear on the hoist.

- **Come-Alongs**

This compact hoist offers use in close quarters, toolbox size storage, and versatility in almost any lifting and pulling situation. The come-along is more popular because of its heavy-duty construction and greater lifting ability.

The lifting chain or cable is moved by a ratchet lever with three positions:

- **Forward** For lifting and pulling
- **Neutral** For free gear travel
- **Reverse** For lowering or releasing tension

The most versatile of the hand-operated hoists, Come-Alongs can be used for vertical lifting, pulling and binding on any plane and in tugging heavy objects. Only a small amount of leverage is required to operate the equipment, even under a load. Therefore, if it takes two people to crank the hand lever, the hoist is overloaded for the job. **DO NOT** use cable-type lever hoists if the cable is frayed or damaged. Come-Alongs are available in various chain and cable lengths with capacities from a 1/4-ton to 6 tons.

- **Inspection**

This type of equipment shall be checked for cracks in the metal or wood frame work, damaged or broken sprockets or pulleys, a defective ratchet mechanism and stop/locking action, and a kinked, frayed, or mashed cable, chain or rope. The manufacturer's specifications for load capacity rate these devices. **DO NOT** exceed the specified ratings. All hoisting equipment should be inspected prior to each use and monthly for the inspection report.

5.3.6 Synthetic Web Slings

- **General**

Synthetic web slings offer a number of advantages for rigging purposes and come in a variety of configurations. Attach a tag to new slings showing the rated capacity and the type of materials the sling is made of. Make sure you use the proper type and strength for the load in question. Use nylon slings in the presence of oils, greases, hydrocarbons, and de-greasing solutions. Use nylon slings as non-marring slings on any load that has a rounded surface or rounded corners. **DO NOT** use or store nylon slings or polypropylene web slings where fumes, vapors, sprays, mists, or acidic liquids are present. Do not use nylon slings at temperatures above 180° F. Use chain slings or wire cloth slings for higher temperatures. Inspect hoist hooks to make certain they are smooth.

DO NOT use nylon slings on hoist hooks that are gouged or nicked (there could be sharp edges that could cut the sling). Do not use nylon slings on sharp corners.

- **Inspection**

Inspect slings each time they are used for the following:

- Worn eyes
- Worn or distorted fittings
- Cuts, holes, punches, or tears
- Frayed material
- Broken Stitching
- Acid, caustic, or heat burns

DO NOT attempt to repair damaged web slings. **DO NOT** attempt to inspect the inside nylon fibers of the webbing. These fibers are protected by the outside fibers and it may damage the sling.

5.3.7 Hooks

- **General**

All hooks used for load lifting shall be made of forged alloy steel and preferably equipped with safety latches. **Hooks on hoist or crane equipment shall have safety latches.**

Avoid these practices which lead to the spreading of the hook and decrease the capacity of the hook:

- Overloading
- Improper seating of the load in the hook
- Point loading
- Other faulty rigging practices

Bent or otherwise deformed hooks shall be replaced or returned to the manufacturer for repairs. Never attempt to straighten hooks yourself. When making choker hitches, always face the hook opening out and away from the pull of the sling.

- **Inspection**

Hooks used for lifting and hoisting purposes should be inspected frequently. Inspect hooks for the following:

- Saddle region for wear
- Neck area for cracks, corrosion, and twisting of the body. Hooks twisted more than 10° from the plane of the unbent hook should be replaced
- Measure throat openings. Openings more than 15% from the normal throat opening should be replaced

- Check hooks for cracks. Special dye penetrant for checking steel fatigue can be used to determine fatigue cracks

5.3.8 Shackles

- Make certain the bolt in a screw pin shackle turns easily and is tightened securely
- Use safety shackles wherever possible
- Use the largest bearing surface possible on the shackle pin. This reduces the bending movement on the pin
- **DO NOT** use any screw pin shackles where the bolt is very difficult to turn. (The pin is either bent due to overload or the threads have been damaged)
- **DO NOT** use round pin shackles in preference to safety shackles or screw pin shackles
- **DO NOT** use too small a bearing surface in the center of a shackle pin

6.0 Hand Signals

It is imperative that the operator and his signalman work together as a team. The Crane Operator must pay close attention to his signalman.

Use a standard hand signal system on all crane operations. When there are several riggers, only one rigger should be designated as signalman.

The operator should never start machine movement until the signalman is within sight and hand signals are understood. **An emergency STOP signal given by anyone is to be obeyed immediately.**

Quick and understandable communication between the signalman and the operator is required for safe and efficient operation. Both the operator and the signalman are required to know all the hand signals. If other signals are necessary for a job, both men should agree on them and their meanings.

7.0 Recordkeeping

REPOWER USA shall establish and maintain an accurate record of all lifting equipment inspections and load testing, as applicable. These records shall be maintained at the facility/job site at which the equipment is being operated, maintained, and located. The HSE Department shall review these records during annual inspections. These inspections are to be performed by a competent person with verified certification from the OEM and/or a government or private agency recognized by the US Department of Labor. These inspections may be more frequent but are not limited to an investigation of an accident/incident/near miss or a change in the equipment or process. Keep inspection reports in the job location file for a period of 12 months. Send a copy of all reports to the HSE Department. Destroy the form at the end of the retention period.



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7.1.13 REPOWER USA – 13

Cranes, Lifting, Hoisting and Rigging Equipment

Form 1 - Monthly Report of Hoisting Equipment Inspections

Monthly Report of Hoisting Equipment Inspections

1. The hoist chain or hoist rope must be free from kinks or twists and must not be wrapped around the load
2. Sheave grooves and chain pockets must be smooth, clean, and free from surface defects
3. Lubrication must be provided for all running sheaves
4. The load must be attached to the load hook by means of slings or other approved devices
5. While any employee is on the load or hook, no hoisting, lowering, or traveling is permitted
6. The operator must not carry loads over other people
7. Rope clips attached with U-Bolts must have the U-Bolts on the dead or short end of the rope
8. Crane hooks with cracks, the deformation of the throat opening in excess of 15%, or twists greater than 10° from the plane of the unbent hook must be discarded
9. A crane or hoist that has been idle for as much as 6 months must be thoroughly inspected before it is placed in operation
10. A preventive maintenance program, based on the recommendations of the equipment manufacturer, must be established
11. All deficiencies listed as a result of an inspection must be carefully examined and a determination must be made as to whether they constitute a safety hazard
12. Any unsafe operation disclosed by an inspection must be corrected before the operation of the equipment is resumed.

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Cranes, Lifting, Hoisting and Rigging Equipment

Form 2 - Daily Inspection of Hoisting Equipment

Checklist – Daily Inspection of Hoisting Equipment

- ☐ Check all functional operating mechanisms for maladjustment interfering with proper operation. Visually inspect for excessive wear of the components
- ☐ Visually inspect all hooks for cracks or deformation
- ☐ Visually inspect all hoist ropes and chains, including the end connections, for excessive wear, excessive broken wires or fibers, stretching, kinking, or twisting
- ☐ Visually inspect all slings, including the end connections, for excessive wear, excessive broken wires or fibers, stretching, kinking, or twisting
- ☐ Carefully examine any deficiencies detected and determine whether they constitute a safety hazard. You must report all deficiencies to the supervisor in charge
- ☐ Any unsafe condition disclosed by inspections must be corrected before the operation of the equipment is resumed



**Section III
RPSHSE 7.1.14**

Valid from: November 2008

Revision Profile

Rev.	Date	Name	Approval Signature	Remarks
0	11/08	Owens O'Quinn QHSSE Consultant	On File	ORIGINAL
0	11/08	Tammy Conekin	On File	ORIGINAL
1				
2				
3				
4				
5				

Original Review Progress

Date	Reviewer	Signature
11/08	J.K. Barrilleaux – Grammar/Technical Format <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Owens O'Quinn – QHSSE Consultant <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Tammy Conekin – Head of Service	On File



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Section III: 7.1.14 – RPSHSE – 14
Vehicle and Driver Safety

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1.0 Introduction

This **REPOWER USA** Policy and Procedure presents the minimum requirements for all employees who will be driving a **REPOWER USA** vehicle. It is the responsibility of all employees who drive any vehicle to maintain the vehicle they are assigned and/or using, abide by all state and local motor vehicle laws, and report any accidents and/or moving violations immediately. Failure to comply with this **REPOWER USA** policy could result in disciplinary action up to and including termination.

2.0 Driver Qualifications

- 2.1 The employee must have a valid driver's license in the state in which he/she resides. Only a valid driver's license from the state in which the driving will be done is required except with special projects or the occasional out-of-state job. The type of license depends on the type of driving designated in the employee's job duties and its requirements.
- 2.2 The employee must complete and sign the **Driving Record Consent Form**. A driving record will be requested for all the applicants who will be required to drive a Company vehicle. Driving a Company vehicle is contingent on a Motor Vehicle Record (MVR) check deemed satisfactory to the Company and the insurance carrier's requirements.
- 2.3 Employees who will drive a Company vehicle must agree to take a Defensive Driving Course* within 60 days (at the employee's expense) as a required condition of employment, if requested and deemed necessary by management.

3.0 Driver Criteria

- 3.1 Driving records will be checked periodically on all employees who, at any time, drive a Company vehicle. The Safety Department will maintain results.
- 3.2 The minimum criteria for all Company drivers includes, but may not be limited to:
 - A current driver's license with a class that corresponds with the vehicle type to be driven
 - Driver's license must be valid at all times
 - No more than three (3) moving violations (i.e. accidents, speeding, reckless driving) within the past 36 months
 - No license suspensions in the past 24 months
- 3.3 No convictions of Driving While Intoxicated (DWI) or Driving Under the Influence (DUI) are permitted for licensed drivers of Company vehicles.
 - Alcohol and narcotics are not allowed in Company vehicles.
 - **Note:** Any employee driving under the influence or in possession of alcohol or narcotics in a Company vehicle is subject to termination.

- Any employee "on-call" will not be allowed to drive if under the influence of alcohol or drugs and should contact their Department Manager before attempting to drive on Company business.
- No convictions of a vehicular homicide
- No more than two (2) chargeable (preventable) accidents in the past 36 months

ANY EMPLOYEE WHO DOES NOT MEET THE MINIMUM DRIVER REQUIREMENTS OR IS IDENTIFIED AS AN INSURANCE RISK MAY HAVE THEIR COMPANY DRIVING PRIVILEGES REVOKED UNTIL THEIR DRIVING RECORD IS WITHIN POLICY LIMITS. IF A NON-DRIVING POSITION IS NOT AVAILABLE, THE EMPLOYEE MAY BE TERMINATED.

4.0 Vehicle Assignments

4.1 Non-Assigned Company Vehicles

- Vehicles assigned to one or more employees **must** be used for Company business only.
- Employees must meet the qualifications and criteria for the use of a Company vehicle and be approved by the HS&E Department before being assigned the usage of any vehicle
- Vehicles are to be driven by employees only
- When vehicles are not being used for business, they will be kept on Company premises at all times

4.2 Assigned Company Vehicle

- Vehicles will be provided to the specified employees and management personnel who require a Company vehicle to carry out their duties
- Vehicles assigned to an individual are to be driven by that employee only

5.0 Maintenance and Repairs

The routine care, maintenance, and repairs are the responsibility of the employee assigned a Company vehicle. Management personnel will inspect the vehicles on a regular basis to determine care of the vehicle. Neglecting the appropriate care of an assigned vehicle could result in the loss of driving privileges and/or dismissal from the Company.

The Operation/Department Manager of each Division must approve repairs. All major repairs other than routine maintenance require manager approval in advance.

No vehicle will be driven if the condition of that vehicle could contribute to an accident.

Each driver should perform routine daily maintenance checks and make corrections, if needed, prior to operating the vehicle. The daily checks include:

- Check water, oil, and fuel
- Check for visible leaks
- Check lights—all lights including turn signals
- Check tires and the tire pressure
- Check safety equipment
- Check wipers
- Check brakes
- Check dash instruments
- Check Fire-Extinguisher (where applicable)

6.0 Expenses and Financial Reporting

Expenses will be reimbursed to the employee through normal accounting expense report procedures. A corresponding receipt must accompany all expenses.

All repairs, maintenance, and mileage should be recorded monthly to keep accurate cost records and financial records on all vehicles through normal accounting procedures.

7.0 Vehicle Accidents

7.1 At the Scene

Leaving the scene of an accident is a criminal offense. All drivers will adhere to the following procedures in case of an accident:

- **Warn Other Drivers:** Place warning flares out or get a passing motorist to guide the traffic around the wreck with a flashlight.
- **Aid The Injured:** Render aid to injured persons and control severe bleeding. Have someone call an ambulance, a doctor or both. Move the injured person(s) as little as possible to avoid further injury or hemorrhage.
- **Notify The Police:** If a vehicle is non-operable or someone has been injured, flag down a passing driver and ask him to go to the nearest phone and call law enforcement officers. The police should take charge of the accident scene when they arrive.
- **Notify the Company:** Notify the Company by telephone immediately, regardless of the severity. The Company will notify the insurance company.
- **Avoid Loose Talk:** Make no admission of fault or negligence to by-standers. Say no more than necessary and do not sign any statements or releases.

- **Report The Accident:** Report the accident to the authorities. All states and most municipalities require that all accidents, except certain types, be reported to their Department of Public Safety on the forms provided for that purpose. Be familiar with the laws on accident reporting in the state in which you drive.
- **Get The Facts:** Fill out an accident report at the scene of the accident by gathering all of the information you can. Information must include the other persons involved in the accident and their addresses the witnesses and their names and addresses, and the license numbers of the cars first to arrive if you cannot get the person's names.

7.2 Accident Reporting

- Any accident in which a **REPOWER USA** vehicle is involved must be reported to your department manager and the HS&E Department immediately.
- A **VEHICLE ACCIDENT REPORT** is imperative for processing insurance claims and must be submitted to the HS&E Department within 24 Hours
- Any insurance claims and/or accident repairs must be directed through the HS&E Department.

8.0 Vehicle Safety

8.1 General Rules

- Seat belts are to be used at all times when operating any Company motor vehicle
- Company vehicles should be driven at safe speeds in accordance with the conditions of vehicles, roads, traffic, weather, and the local laws
- All drivers of Company vehicles shall familiarize themselves with the state traffic regulations in the states in which they drive and they must be governed accordingly
- All drivers must have a required driver's or Commercial Driver's License (CDL) license for the states in which they reside
- Cars and trucks shall be kept clean and in good mechanical condition, especially lights, horns, brakes, windshields, windshield wipers, steering assemblies, and tires
- A truck driver should look around his truck before starting off after stopping for any length of time
- All tools, supplies, or equipment hauled on trucks must be firmly secured to prevent them from falling off into the path of other vehicles
- Trailers being pulled should have safety chains of the sufficient size to hold the loads if the coupling pins break or other suitable means of preventing the coupling pins from getting out of place
- Loads extending over the rear of truck must be flagged during daylight hours with red bunting. At night, a red light must be used
- No hitch hikers are allowed to be carried in a **REPOWER USA** owned and/or operated vehicle

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Section III:

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Vehicle and Driver Safety

Form 1 – Driving Record Consent Form



Section III Forms & Information

Valid from: November 2008

Driving Record Consent Form

I. Information per Driver License:

Full Name: _____

Address: _____

Date of Birth: _____ Driver's License Number: _____

Type of Driver's License: _____ Issue Date: _____ Expiration Date: _____ State of Issue: _____

License Restrictions (if any; include class code): _____

II. HAVE YOU HAD A DRIVER'S LICENSE IN ANY OTHER STATE WITHIN THE LAST FIVE YEARS? ☐ YES ☐ NO

HAVE YOU HAD A DIFFERENT DRIVER'S LICENSE NUMBER WITHIN THE LAST FIVE YEARS? ☐ YES ☐ NO

If you responded "yes" to either question in Section II, please complete another Driving Record Consent Form listing that license information.

III. LIST ALL DRIVING INFRACTIONS (tickets, accidents, etc.) WHICH HAVE OCCURRED IN THE PAST FIVE YEARS:

Acknowledgement

The receipt of the Vehicle Safety Standard, governing the use and the operation of a Company vehicle, is hereby reviewed. I authorize **REPOWER USA** to have access to my Motor Vehicle Records (MVR) as required for insurance purposes. I understand employment is contingent on satisfactory MVR checks and will be checked periodically. I also understand that unsatisfactory MVR checks or the failure to comply with Company policy could result in the loss of driving privileges or termination.

Name of Driver: _____

Please Print

Signed: _____ Date: _____

(Driver)

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Vehicle and Driver Safety

Form 2 – Vehicle Accident Report



Section III Form & Information

Valid from: November 2008

Vehicle Accident Report

This Report must be completed and sent to the REPOWER USA HSE Department within 24 HOURS.

Division:

- | | |
|--|------------------------------------|
| ☐ WIND TURBINES | ☐ CORPORATE |
| ☐ OPERATIONS | ☐ OTHER |
| ☐ WORK MANAGEMENT | |

Name: _____ Driver's Age: _____ Date of Accident: _____
Date of Hire: _____

- ☐ Company Car No.: _____
☐ Personal Car: _____
☐ Rental/lease vehicle: ☐ YES ☐ NO Type of vehicle: _____

Work Location: _____

Accident Type:

- | | | |
|--|--|-------------------------------------|
| ☐ HIT OTHER IN REAR | ☐ INTERSECTION | ☐ PEDESTRIAN |
| ☐ HEAD-ON COLLISION | ☐ CUT IN OR OUT OR SIDESWIPED | ☐ BACKING |
| ☐ HIT STATIONARY OBJ. | ☐ PULLED FROM PARKED POSITION | |
| ☐ LOADING-UNLOADING | ☐ CARGO FELL OUT | ☐ JACKKNIFE |
| ☐ UPSET | ☐ PARKED | |
| ☐ HIT IN REAR | ☐ OTHER | |

Description of Accident (Draw Map of Accident on back, if necessary):

Accident Judged As: ☐ Avoidable ☐ Unavoidable

Recommended Preventive Action: _____

Driver's Acknowledgement

I have read this report and agree to follow the above suggestions. In the future I will not only operate my vehicle in the safest possible manner but will be prepared to allow for the unsafe actions of other motorists and pedestrians.

Driver's Signature _____ Date: _____

Supervisor's Signature _____ Date: _____



Section III Forms & Information

Valid from: November 2008

Section III:

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Vehicle and Driver Safety

Form 3 – Property Damage Report



Section III Forms & Information

Valid from: November 2008

Property Damage Report

This Report must be completed and sent to the REPOWER USA HS&E Department within 24 HOURS.

Division:

☐ WIND TURBINES

☐ CORPORATE

☐ OPERATIONS

☐ OTHER

☐ WORK MANAGEMENT

Customer: _____ **Location:** _____

Accident Date: _____ **Accident Time:** _____

All Personnel Involved: _____

Equipment Damaged: _____

Owner/Rented From: _____

Extent of Damage: _____

Cause: _____

Estimated Downtime: _____ **Estimated Cost to Repair:** _____

Description of Accident: _____

REPOWER USA Field Supervisor

Date:

Representative of Damaged Equipment

Date:



Section III RPSHSE 7.1.15

Valid from: November 2008

Revision Profile

Rev.	Date	Name	Approval Signature	Remarks
0	11/08	Owens O'Quinn QHSSE Consultant	On File	ORIGINAL
0	11/08	Tammy Conekin	On File	ORIGINAL
1				
2				
3				
4				
5				

Original Review Progress

Date	Reviewer	Signature
11/08	J.K. Barrilleaux – Grammar/Technical Format <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Owens O'Quinn – QHSSE Consultant <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Tammy Conekin – Head of Service	On File





**Section III
RPSHSE 7.1.15**

Valid from: November 2008

**Section III: 7.1.15 RPSHSE – 15
Disciplinary Action Program**

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1.0 Personal Conduct

1.1 General

It is **REPOWER USA's** desire to be known for having the most capable and highest quality employees in the industry. As an Employee of **REPOWER USA**, your conduct (good or bad) is a reflection on **REPOWER USA**. Therefore, if **ANY** employee's Personal Conduct discredits, or lessens, the Client's or the general public's opinion of **REPOWER USA**, said employee will be subject to disciplinary action up to and including termination.

- Each Employee is expected to perform their assigned duties in the manner of a mature professional
- Boisterous or unruly conduct is strictly prohibited and will not be tolerated while on duty at a job site **OR** while off-duty at the lodging facilities provided by the company.

1.2 Safety Violation Disciplinary Action and Enforcement

Any non-compliance or violation of HSE rules, policies, and/or procedures observed by anyone (i.e., Witness(es) on-site, On-Site Field Supervisors, the On-Site HSE Coordinator, other **REPOWER USA** Employees, and/or the **REPOWER USA** HSE Manager) **SHALL** be reported to the On-Site Field Supervisor in charge, the On-Site HSE Coordinator, and/or the **REPOWER USA** HSE Manager immediately. If a flagrant disregard of the safe work rules/practices or a major violation has occurred, the On-Site Field Supervisor, the Operations Manager, the On-Site HSE Coordinator, and/or **REPOWER USA** HSE Manager **SHALL** take the action deemed necessary to ensure compliance including, but not limited to, the following:

- **First Offense** – A letter of reprimand shall be written to the Employee by the Operations Manager with copies sent to the Employee's personnel file and to the **REPOWER USA** HSE Manager.
- **Second Offense** – The Operations Manager may order that the Employee be suspended from work without pay for one or more days. A second letter of reprimand **SHALL** be written to the Employee with copies sent to the Employee's personnel file and to the **REPOWER USA** HSE Manager. The Operations Manager and/or the **REPOWER USA** HSE Manager **SHALL** also counsel the concerned On-Site Field Supervisor on safe work practices.
- **Third Offense** – Upon the third offense, the Employee's case will be reviewed in detail by the On-Site Field Supervisor, the Operations Manager, and the **REPOWER USA** HSE Manager as soon as possible after the commission of the offense with the review to include, but not limited to, the following:

- The Employee is **immediately** terminated from employment with **REPOWER USA**. A thorough review of the concerned On-Site Field Supervisor's safety performance history **SHALL** also be made to determine suitability for continued service in a supervisory position.

Note: If the non-compliance or violation of these HSE rules is considered serious enough, the Operations Manager and/or the **REPOWER USA** HSE Manager may omit the first and/or second step listed above and go to the next step.

Note: HSE rule enforcements and disciplinary actions for non-compliance or violation of **REPOWER USA** HSE Policies and Procedures are mandatory components of the **REPOWER USA** HSE Manual and are taken very seriously by **REPOWER USA** Management. An appropriate and immediate action is required in **ALL** cases of non-compliance or violation.

2.0 Vehicle Operation and Safety

REPOWER USA Management and the **REPOWER USA** HSE Manager promotes safe driving habits in employees operating motor vehicles during and after work hours as part of a preventative and pro-active safety program. **Company vehicle** refers to **REPOWER USA** owned and/or **REPOWER USA** operated, leased, and/or rented vehicles used on Company business.

2.1 Defensive Driving

All drivers involved in Company business will use techniques of Defensive Driving and will attend the **REPOWER USA** HSE Manager recommended driving course for the following reasons:

- Following any preventable accident.
- When the investigation of moving traffic violations indicates a need.

2.2 General Driving Rules

- Seats belts and the associated safety equipment **SHALL** be maintained and seat belts **SHALL** be worn by all occupants while operating a Company vehicle.
- Each driver will drive within the legal speed limit and will reduce their speed during unfavorable conditions.
- The operation of a Company vehicle while under the influence of intoxicating beverages, narcotics, or other drugs is **strictly prohibited** and the violation of this Safe Driving Rule will result in termination.
- Always be attentive to the requirements of operating a motor vehicle while the car is in motion.
- The assigned driver will walk around his/her vehicle and inspect for damage and/or possible problems and obstructions before starting the vehicle.

- Each assigned driver is required to notify their On-Site Field Supervisor, Operations Manager, and **REPOWER USA** HSE Manager of changes in their driver's license status.
- Assigned drivers are to ensure that all trailers to be towed are equipped with the proper safety equipment (i.e. safety chains of the proper size to hold the trailer if the coupling becomes unfastened).
- All vehicles are to be placed in the park position with the engine shut off prior to the assigned driver exiting the vehicle.
- All vehicles **SHALL** be parked at **REPOWER USA** work places so they will not have to back out in case of an emergency.
- The assigned driver **SHALL** not allow unauthorized persons to operate a Company vehicle

2.3 Vehicle Maintenance

All drivers of **REPOWER USA** vehicles **SHALL** be responsible for maintaining the **REPOWER USA** operated, owned, leased and/or rented vehicles in a safe operating condition and they will complete the required maintenance and reporting paperwork in a timely manner.

2.4 Accident and Citation Reporting

All drivers **SHALL** immediately report accidents/incidents and moving violations to their On-Site Field Supervisor, On-Site HSE Coordinator, Operations Manager, and **REPOWER USA** HSE Manager.

All drivers involved in an accident/incident **SHALL** complete all the required reporting forms and submit them to their On-Site Field Supervisor, On-Site HSE Coordinator, Operations Manager, and **REPOWER USA** HSE Manager within twenty-four hours (24 hrs.) of the accident/incident.

2.5 Responsibility

Each assigned driver operating a **REPOWER USA** owned or a **REPOWER USA** operated, owned vehicle **SHALL** be directly responsible for adhering to all motor vehicle operation rules and regulations

2.6 Rules and Regulations Violation

A violation of Rules and Regulations resulting from, but not limited to, the following will warrant disciplinary action:

- Repeated or serious rule/regulation violations and the involvement in a preventable accident/incident that is clearly the fault of the employee, such as:
 - Gross negligence
 - Hit and run
 - Driving while under the influence of alcohol or narcotics
 - Excessive speeds
 - Reckless operation of a motor vehicle

2.7 Motor Vehicle Violation Disciplinary Action and Enforcement

An accident/incident involving a company owned, leased or rented, and/or client owned-company operated motor vehicle that is preventable, but clearly the fault of the employee resulting from a violation of **REPOWER USA** Rules and Regulations, **SHALL** result in but not limited to, the following disciplinary action. These disciplinary actions will depend on the severity of the accident/incident:

- **First Offense**
 - Written reprimand and/or two days off without pay.
 - Immediate Discharge.
- **Second Offense**
 - Immediate Discharge

3.0 Safety Policies and Procedures

The **REPOWER USA** Policies and Procedures are developed by **REPOWER USA** by using the appropriate Federal, State, and/or Local Regulations as the basis for this manual. These Policies and Procedures are to be used and adhered to by all **REPOWER USA** Employees and contractors, as applicable, in the performance of their jobs. These Policies and Procedures are **NOT** intended to supersede any Federal, State, and/or Local Regulations but are to provide guidance and structure to all **REPOWER USA** Employees and contractors in the safe execution of their jobs.

In the unlikely event any of these Policies and Procedures differ from the associated regulation, the **regulation shall prevail** and supersede the policy or procedure. Anyone noticing any discrepancies in the policies and procedures **SHALL** notify their On-Site Field Supervisor and/or On-Site HSE Coordinator immediately, who then **SHALL** notify the **REPOWER USA** HSE Manager at the appropriate **REPOWER USA** office.

4.0 Disciplinary Action Forms Procedures**4.1 Cited REPOWER USA Employee's Report of Incident:**

This form is to be filled in by the affected **REPOWER USA** Employee at the time of the notification of pending action for being cited on a non-compliance or violation of policies, procedures, and best industry work practices. The non-compliance and/or violation of the **REPOWER USA** HSE Policies and Procedures will constitute the reason for the notification and the pending action under the "**REPOWER USA** Progressive Disciplinary" Program.

The affected **REPOWER USA** Employee is to fill in the form by following the instructions on the form. The form is to then be forwarded to their immediate On-Site Field Supervisor and/or On-Site HSE Coordinator.

4.2 Witness Incident Report

One copy of this form is to be filled in by each individual Witness to the non-compliance and/or violation after the notification of the On-Site Field Supervisor and/or On-Site HSE Coordinator. The non-compliance and/or violation of the **REPOWER USA**/Client HSE Policies and Procedures will constitute the reason for the notification and the pending action under the "**REPOWER USA** Progressive Disciplinary" Program.

The affected Witness is to fill in the form by following the instructions on the form. The form is to then be forwarded, if they are an employee of **REPOWER USA**, to their immediate On-Site Field Supervisor with copies to the Operations Manager, the On-Site HSE Coordinator, and the **REPOWER USA** HSE Manager.

4.3 On-Site Field Supervisor Incident Investigation Report

The form is to be filled in by On-Site Field Supervisor at the location of the non-compliance and/or violation after the notification of the Operations Manager, the On-Site HSE Coordinator, and/or the **REPOWER USA** HSE Manager.

The non-compliance and/or violation of the **REPOWER USA**/Client Policies and Procedures will constitute the reason for the notification and the pending action under the "**REPOWER USA** Progressive Disciplinary" Program.

The On-Site Field Supervisor is to fill in the form by following the instructions on the form. The form is to then be forwarded to their immediate Operations Manager with copies to the On-Site HSE Coordinator and **REPOWER USA** HSE Manager.

4.4 On-Site HSE Coordinator Incident Investigation Report

The form is to be filled in by the On-Site HSE Coordinator at the location of the non-compliance and/or violation after the notification of the Operations Manager and the **REPOWER USA** HSE Manager. The non-compliance and/or violation of the **REPOWER USA** Policies and Procedures will constitute the reason for the notification and the pending action under the "**REPOWER USA** Progressive Disciplinary" Program.

The On-Site HSE Coordinator is to fill in the form by following the instructions on the form. The form is to then be forwarded to the **REPOWER USA** HSE Manager with a copy to the Operations Manager responsible for the location at which the cited incident occurred.

4.5 Operations Manager Incident Investigation Report

The form is to be filled in by the Operations Manager responsible for the location at which the non-compliance and/or violation occurred after the notification of the **REPOWER USA** President and the **REPOWER USA** HSE Manager. The non-compliance and/or violation of the **REPOWER USA** Policies and Procedures will constitute the reason for the notification and the pending action under the “**REPOWER USA** Progressive Disciplinary” Program.

The Operations Manager will make every effort to visit the site where the non-compliance and/or violation occurred within a reasonable time period and/or send a competent delegate to investigate the reported situation.

The Operations Manager is to fill in the form by following the instructions on the form. The form is to then be forwarded to the **REPOWER USA** President and the **REPOWER USA** HSE Manager.

4.6 REPOWER USA HSE Manager Incident Investigation Report

The form is to be filled in by the **REPOWER USA** HSE Manager after the location investigation of the situation at the location where the non-compliance and/or violation occurred following the notification of the **REPOWER USA** Manager of Administration/Finance and the **REPOWER USA** President. The non-compliance and/or violation of the **REPOWER USA** Policies and Procedures will constitute the reason for the notification and the pending action under the “**REPOWER USA** Progressive Disciplinary” Program.

The **REPOWER USA** HSE Manager will make every effort to visit the site where the non-compliance and/or violation occurred within a reasonable time frame and/or send a competent delegate to investigate the reported situation. The **REPOWER USA** HSE Managers are to fill in the form by following the instructions on the form. The form is to then be forwarded to the **REPOWER USA** President and the **REPOWER USA** HSE Manager.

4.7 Final Disposition and Notification of Results of Investigation to Employee

The form is to be filled in by Operations Manager responsible for the location at which the non-compliance and/or violation after notifying the **REPOWER USA** President and the **REPOWER USA** HSE Manager of the final concurrent decision and action to be taken

The Operations Manager responsible for the location is to fill in the form by following the instruction on the form. The form is to then be forwarded to the **REPOWER USA** President and the **REPOWER USA** HSE Manager for the concurring signatures. The **REPOWER USA** Employee that has been cited will be notified verbally of the final decision with a written copy of this notification forwarded to the **REPOWER USA** Employee, one copy to the Operations Manager, and one copy to the **REPOWER USA** HSE Manager for filing in the cited Employees' Personnel File.

4.8 Accident/Injury/Illness Reporting Forms

Forms for properly reporting Accident/Injury/Illness can be found in the **REPOWER USA** HSE Manual.



Section III Forms & Information

Valid from: November 2008

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Disciplinary Action Program

Form 1 - Employee Incident Report Form



Section III Forms & Information

Valid from: November 2008

Employee Incident Report Form

1. Date of the Incident: _____
2. Time of the Incident: _____
3. REPOWER USA Employee being cited: _____
4. Length of employment, at the current location, of the Cited REPOWER USA Employee: _____
5. Length of employment at REPOWER USA of the Cited REPOWER USA Employee: _____
6. Current Position of the Cited REPOWER USA Employee: _____
7. Cited REPOWER USA Employee's Report of Incident: _____
8. Signature of the REPOWER USA Employee: _____
9. Date signed: _____
10. Name of the REPOWER USA Employee the report was submitted to: _____
11. Position of the REPOWER USA Employee the report was submitted to: _____
12. Date the Incident Report was submitted: _____

Instructions

1. Fill in the date the cited incident occurred.
2. Fill in the time the cited incident occurred.
3. Fill in the name of the REPOWER USA Employee being cited.
4. Fill in the total time that the cited Employee has been at the current location.
5. Fill in the total time that the cited Employee has been employed by REPOWER USA.
6. Fill in the current position of the REPOWER USA Employee being cited.
7. The REPOWER USA Employee being cited is to give a full report of what, where, when, why, and how the incident occurred for which they are being cited.
8. The Signature of REPOWER USA Employee completing the Incident Report.
9. Fill in the date the completed REPOWER USA Employee Incident Report was signed.
10. Fill in the Name of the REPOWER USA Employee the report was submitted to.
11. Fill in the position of the REPOWER USA Employee the report was submitted to.
12. Fill in the date Incident Report was submitted.

Original to the On-Site Field Supervisor

One Copy to the Department/Operations Manager

One Copy to the REPOWER USA HSE Manager

One Copy to the REPOWER USA Employee being cited

NOTE: Use additional paper to report the incident fully.



Section III Forms & Information

Valid from: November 2008

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Disciplinary Action Program

Form 2 - Witness Incident Report Form

Witness Incident Report Form

1. Date of the Incident: _____
2. Time of the Incident: _____
3. Witness reporting the Incident: _____
4. Length of employment of the Witness at the current location: _____
5. Is the Witness a REPOWER USA Employee? Yes: _____ No: _____
6. By Whom is the Witness employed? _____
7. Witness's Report of Incident: _____
8. Signature of the Witness: _____
9. Date signed: _____
10. Name of the REPOWER USA Employee the report was submitted to: _____
11. Position of the REPOWER USA Employee the report was submitted to: _____
12. Date the Incident Report was submitted: _____

Instructions

1. Fill in the date the cited incident occurred.
2. Fill in the time the cited incident occurred.
3. Fill in the name of the Witness reporting the incident.
4. Fill in the total time that the Witness has been at the current location.
5. Is the Witness employed by REPOWER USA.
6. By whom is the Witness employed if not a REPOWER USA Employee.
7. The Witness reporting the incident is to give a full report of what, where, when, why, and how the incident occurred for which they are reporting.
8. The Signature of Witness completing the Incident Report.
9. Fill in the date the completed Witness Incident Report was signed.
10. Fill in the Name of the REPOWER USA Employee the report was submitted to.
11. Fill in the position of the REPOWER USA Employee the report was submitted to.
12. Fill in the date the Incident Report was submitted.

Original to the On-Site Field Superintendent/Supervisor

One Copy to the Department/Operations Manager
One Copy to the REPOWER USA HS&E Manager
One Copy to the REPOWER USA Employee being cited
NOTE: Use additional paper to report the incident fully.

Section III:

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Disciplinary Action Program

Form 3 - On-Site Field Supervisor Incident Report Form

On-Site Field Supervisor Incident Report Form

1. Date of the Incident: _____
2. Time of the Incident: _____
3. Name of the REPOWER USA Employee being cited: _____
4. Witness to the reported Incident: _____
5. Location at which the incident occurred: _____
6. Is the Witness a REPOWER USA Employee? Yes: _____ No: _____
7. By Whom is the Witness employed? _____
8. On-Site Field Supervisor's Report of Incident: _____
9. The Signature of On-Site Field Supervisor: _____
10. Date signed: _____
11. Name of the REPOWER USA Employee the report was submitted to: _____
12. Position of the REPOWER USA Employee the report was submitted to: _____
13. Date the Incident Report was submitted: _____

Instructions

1. Fill in the date the cited incident occurred.
2. Fill in the time the cited incident occurred.
3. Fill in the name of the REPOWER USA Employee being cited.
4. Fill in the name of the Witness reporting the incident.
5. Location at which the cited incident occurred.
6. Is the Witness employed by REPOWER USA (Yes or No)?
7. By whom is, the Witness employed if not an REPOWER USA Employee.
8. The On-Site Field Supervisor investigating incident is to give a full report of what, where, when, why, and how the incident occurred for which they are investigating. Include the interview with the REPOWER USA Employee being cited and the Witness.
9. Signature of the On-Site Field Supervisor completing the Incident Report.
10. Fill in the date the completed On-Site Field Supervisor Incident Report was signed.
11. Fill in the Name of the REPOWER USA Employee the report was submitted to.
12. Fill in the position of the REPOWER USA Employee the report was submitted to.
13. Fill in the date the Incident Report was submitted.

Original to the On-Site Field Supervisor

One Copy to the Head of Service/Operations Manager

One Copy to the REPOWER USA HSE Manager

One Copy to the REPOWER USA Employee being cited

NOTE: Use additional paper to report the incident fully.

	Section III Forms & Information	Valid from: November 2008
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Disciplinary Action Program

Form 4 – HSE Coordinator Incident Report Form

On-Site HSE Coordinator Incident Report Form:

1. Date of the Incident: _____
2. Time of the Incident: _____
3. Name of the REPOWER USA Employee being cited: _____
4. Witness to the reported Incident: _____
5. Location at which incident occurred: _____
6. Is the Witness a REPOWER USA Employee? Yes: _____ No: _____
7. By Whom is the Witness employed? _____
8. On-Site HS&E Coordinator's Report of Incident: _____
9. Signature of the On-Site HSE Coordinator: _____
10. Date signed: _____
11. Name of the REPOWER USA Employee the report was submitted to: _____
12. Position of the REPOWER USA Employee the report was submitted to: _____
13. Date the Incident Report was submitted: _____

Instructions

1. Fill in the date the cited incident occurred.
2. Fill in the time the cited incident occurred.
3. Fill in the name of the REPOWER USA Employee being cited.
4. Fill in the name of Witness reporting the incident.
5. Location at which the cited incident occurred.
6. Is the Witness employed by REPOWER USA (Yes or No)?
7. By whom is the Witness employed if not an REPOWER USA Employee.
8. The On-Site HSE Coordinator investigating incident is to give a full report of what, where, when, why, and how the incident occurred for which they are investigating. Include the interview with the REPOWER USA Employee being cited and the Witness.
9. Signature of the On-Site Field Supervisor completing the Incident Report.
10. Fill in the date the completed On-Site Field Supervisor Incident Report was signed.
11. Fill in the Name of the REPOWER USA Employee the report was submitted to.
12. Fill in the position of the REPOWER USA Employee the report was submitted to.
13. Fill in the date the Incident Report was submitted.

Original to the On-Site Field Supervisor

One Copy to the Head of Service/Operations Manager

One Copy to the REPOWER USA HSE Manager

One Copy to the REPOWER USA Employee being cited

NOTE: Use additional paper to report the incident fully.

	Section III Forms & Information	Valid from: November 2008
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Section III:

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Disciplinary Action Program

Form 5 - Head of Service /Operations/HSE Manager Incident Report Form

Head of Service/Operations/HSE Manager Incident Report Form

1. Date of the Incident: _____
2. Time of the Incident: _____
3. Name of the REPOWER USA Employee cited: _____
4. Witness to the reported Incident: _____
5. Location at which incident occurred: _____
6. Is the Witness a REPOWER USA Employee? Yes: _____ No: _____
7. By Whom is the Witness employed: _____
8. Department/Operations Manager's Report of Incident: _____
9. Signature of Date of the Incident: _____
10. Date signed: _____
11. Name of the REPOWER USA Employee the report was submitted to: _____
12. Position of the REPOWER USA Employee the report was submitted to: _____
13. Date the Incident Report was submitted: _____

Instructions

1. Fill in the date the cited incident occurred.
2. Fill in the time the cited incident occurred.
3. Fill in the name of the REPOWER USA Employee being cited.
4. Fill in the name of Witness reporting the incident.
5. Location at which the cited incident occurred.
6. Is the Witness employed by REPOWER USA (Yes or No)?
7. By whom is the Witness employed if not an REPOWER USA Employee.
8. The On-Site HSE Coordinator investigating incident is to give a full report of what, where, when, why, and how the incident occurred for which they are investigating Include the interview with the REPOWER USA Employee being cited and the Witness.
9. Signature of the On-Site Field Supervisor completing the Incident Report.
10. Fill in the date the completed On-Site Field Supervisor Incident Report was signed.
11. Fill in the Name of the REPOWER USA Employee the report was submitted to.
12. Fill in the position of the REPOWER USA Employee the report was submitted to.
13. Fill in the date the Incident Report was submitted.

Original to the On-Site Field Supervisor

One Copy to the Head of Service/Operations Manager

One Copy to the REPOWER USA HS&E Manager

One Copy to the REPOWER USA Employee being cited

NOTE: Use additional paper to report the incident fully.



Section III RPSHSE 7.1.16

Valid from: November 2008

Revision Profile

Rev.	Date	Name	Approval Signature	Remarks
0	11/08	Owens O'Quinn QHSSE Consultant	On File	ORIGINAL
0	11/08	Tammy Conekin	On File	ORIGINAL
1				
2				
3				
4				
5				

Original Review Progress

Date	Reviewer	Signature
11/08	J.K. Barrilleaux – Grammar/Technical Format <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Owens O'Quinn – QHSSE Consultant <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Tammy Conekin – Head of Service	On File



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First Aid and Cardiopulmonary Resuscitation (CPR)

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1.0 Introduction

Injuries are one of the most serious public health problems. Injuries are the leading cause of death and disability in children and young adults. They destroy the health, lives and livelihoods of millions of people.

- Each year more than 140,000 Americans die from injuries (including accidents, suicides, and homicides), and one person in three suffer a nonfatal injury.
- Preceded by heart disease, cancer, and strokes, injuries are the fourth leading cause of death.
- An injured patient occupies one of every eight hospital beds.
- Every year more than 80,000 Americans suffer, unnecessarily, permanently disabling injuries of the brain or spinal cord.
- Injuries are the leading reason for physician contacts. In addition, more than 25% of hospital emergency room visits are for the treatment of injuries.

Because of the size and magnitude of the injury problem, everyone must expect to eventually be present when an injury or sudden illness strikes. The outcome of such misfortune frequently depends not only on the severity of the injury or illness but also on the first aid rendered.

First aid is the immediate care given to an injured or suddenly ill person. Remember that first aid does not take the place of proper medical treatment. It consists only of furnishing temporary assistance until competent medical care, if needed, is obtained or until the chance for recovery without medical care is assured.

Properly applied, first aid may mean the difference between life and death and rapid recovery and long-term hospitalization or temporary disability and permanent injury.

2.0 General

The American Red Cross defines first aid as "the immediate and temporary care given the victim of an accident or sudden illness until the services of a physician can be obtained." Effective first aid consists primarily of common sense and a few simple rules.

The following conditions require that basic life support procedures be used immediately:

- **Severe bleeding-** If a large blood vessel is severed, enough blood can be lost in one or two minutes to cause death.
- **No breathing/circulation-** Death or brain damage can occur in four to six minutes if breathing or circulation is not restored.
- **Poisoning-** Every second counts in preventing further injury.

The **REPOWER USA** HS&E Manual on First Aid includes the Medic First Aid documents that will be the **REPOWER USA** primary Policies and Procedures for First Aid and training. Keep a copy of these booklets, along with this information, at each work location. Certified Medic First Aid instructors will administer all training.

- Immediately report all accidents, injuries, or illnesses to your Supervisor. Minor injuries should be properly treated and not neglected.
- Never move a badly injured person without assistance from a qualified medical attendant or first aid representative, unless it is to protect him/her from further injury.
- **The primary objective in first aid is to sustain life by utilizing basic life support techniques to:**
 - Maintain an airway
 - Maintain breathing
 - Maintain circulation
 - Control bleeding
 - Treat for shock
 - Get medical care for the victim
- **Our goal with First Aid treatment is to:**
 - Prevent death
 - Prevent further injury
 - Relieve pain
 - Prevent or Reduce Shock
- First Aid training is required for **ALL** field employees (except the office staff) and
- employees who are involved in confined space activities. Department Managers are urged to provide the opportunity for office staff employee training.
- The First Aid provider must avoid panic, offer reassurance, inspire confidence, and do no more than necessary until medical help arrives.
- If there is no dispensary, clinic, or hospital in near proximity of the worksite to treat employees, one or more of the employees must be adequately trained to render First Aid. First Aid supplies approved by the HS&E Department
- First Aid kits will be kept on-site at every job location. The HS&E Department recommends that the contents of the first aid kits be limited to the basic supplies of bandages and compresses and that the minimal oral medication (non-emergency) be included in the kits. However, for employees that may be sensitive to insect bites and/or stings, Benadryl should be included as the only oral medication necessary for the First Aid kit. Individuals who are hypersensitive to insect stings should carry their own personal physician prescribed kit at all times.
- Oxygen equipment should be kept at field sites for use in the event of a heart attack or exposure to noxious fumes.

It should be the type that delivers oxygen on demand. The pressure-demand resuscitator should only be used when the site is extremely remote and individuals are present who have received advanced first aid training and know how to properly use resuscitators. A resuscitator in the hands of an untrained person can further complicate the victim's condition.

3.0 Severe Bleeding

Severe bleeding results from wounds to large vessels. Bleeding must be controlled quickly. Immediately apply direct pressure over the wound. The following procedures should be used in the event of severe bleeding:

- Apply pressure directly over the wound. Place a clean pad, handkerchief, or cloth over the wound and press firmly with your fingers or palm of hand. If you do not have a pad or bandage, close the wound with your hand or fingers.
- Hold the pad firmly in place with a bandage, necktie, cloth strip, etc.
- Raise the bleeding part higher than the rest of the body unless bones have been broken.
- Keep the victims lying down.
- Keep the victim warm. Cover the victim with blankets or coats and put something under the victim when lying on a cold or damp surface.
- If the victim is conscious and can swallow, and if abdominal injury is not suspected, give plenty of liquids (such as water, tea, or coffee). Get medical help.
- A tourniquet should only be used to treat severe, life-threatening bleeding that cannot be controlled by other means (usually an amputated, mangled, or crushed arm or leg or when bleeding involves several arteries).

The procedure for applying a tourniquet is as follows:

- Use only a strong, wide piece of cloth. Never use wire, rope, twine, or other narrow materials.
- Place the tourniquet immediately above the wound, between the body and the edge of the wound. Some normal skin should be left between the tourniquet and the wound. If the wound is near a joint, place the tourniquet at the closest possible point above the joint.
- Make sure the tourniquet is just tight enough to stop the bleeding. If possible, attach a card to the victim showing the time and place the tourniquet was applied.
- Once the tourniquet has been applied, the victim should be taken to a medical facility immediately. Only a physician or medical personnel should remove the tourniquet as they are prepared to control the bleeding.

4.0 No Breathing and/or No Circulation

A person whose breathing and circulation has stopped will die or suffer brain damage if these functions are not restored in four to six minutes. The initial evaluation of a victim should follow the procedures developed by the American Red Cross for basic life support, called the **ABC evaluation**.

- **Airway** -After assuring yourself that the victim is unconscious, open the airway by tilting the head back. Look into the mouth and remove anything that is blocking or could potentially block the airway. This includes gum, partial plates, and chewing tobacco.
- **Breathing** -Determine whether the victim has stopped breathing or if there is no circulation. Do this by placing your cheek next to the victim's nose and mouth to feel an exchange of air and, at the same time, watch for any chest movement.
- **Circulation** -Initially, place the tips of two fingers on the larynx (voice box) and slide them gently into the groove between the voice box and the large muscle of the neck. This is the location of the carotid artery where you can feel if the heart is circulating blood.

If breathing has ceased, begin mouth-to-mouth or mouth-to-nose resuscitation. If circulation has stopped, begin external cardiac massage. When combined, these procedures are known as Cardiopulmonary Resuscitation (CPR). To perform Cardiopulmonary Resuscitation (CPR) effectively, these techniques must be learned in a certified course. Although the procedures will be briefly discussed in this section, the discussion is not intended to replace an official course.

A single rescuer should perform the following CPR procedures after an evaluation indicates that breathing and circulation have stopped:

- Deliver four quick breaths using mouth-to-mouth or mouth-to-nose breathing. Do this in a way the victim does not have a chance to completely exhale.
- Place the heel of one hand over the lower half of the sternum (breastbone) and place the other hand on top of the first hand. Keeping the arms straight, deliver a quick, downward, piston-like thrust to compress the victim's chest 1-1/2 to 2 inches. This procedure compresses the heart between the sternum (breastbone) and the backbone, forcing it to circulate blood. Deliver this thrust 15 times at the rate of approximately 80 times per minute.
- After 15 compressions, immediately tilt the victim's head back and deliver two quick breaths mouth-to-mouth.
- Repeat the cycle of delivering 15 compressions and two breaths until medical help arrives.
- Once every minute, check the carotid artery for a pulse. Do this between the compressions and the two breaths.

- If you feel a pulse, deliver one breath every five seconds while ensuring that circulation is still present. If breathing and circulation return, keep a close watch over the victim in case these processes stop again.

The following CPR procedures are used if a situation involves two rescuers:

- One person does the **ABC evaluation** while the other rescuer prepares to deliver external cardiac massage.
- The rescuer who has done the evaluation and found no breathing or circulation delivers four quick breaths by mouth-to-mouth resuscitation.
- When the four breaths are completed, the other rescuer starts delivering compressions at the rate of 60 times per minute.
- After every fifth compression, the first rescuer delivers one breath mouth-to-mouth. The ratio then becomes five compressions to one breath until help arrives or a pulse is restored.
- **NEVER** practice CPR procedures on real people. These violent maneuvers may injure a person if improperly executed. These procedures are learned in a formal CPR course in which life-size mannequins are used for practice.

The following conditions can cause the breathing and/or circulation to stop:

- Electric shock
- Inhalation of a gas such as H₂S
- Inhalation of smoke and the lack of oxygen
- Heart attack, drowning, or a hard blow to the chest

For victims of any of these conditions, do the Airway, Breathing, and Circulation (**ABC**) evaluation and support the life process that has ceased by using CPR procedures.

5.0 Heart Attack

For heart attack victims, use the following procedures:

- Perform the **ABC evaluation**.
- Begin CPR if breathing and circulation have ceased.
- Continue CPR until the vital signs have been restored.
- If breathing and circulation are present, keep calm and reassure the victim.
- Loosen the clothing and help the victim get into a comfortable position (usually halfway between lying and sitting).
- **DO NOT** carry or lift the victim more than necessary. Have someone call for medical help.
- **DO NOT** give the victim any liquids without a doctor's advice.

6.0 Choking

DO NOT interfere with a choking victim who can speak, cough, or breathe. However, if the choking continues without lessening, call for medical help.

If the victim cannot speak, cough, or breathe take the following actions until medical help arrives:

6.1 For a Conscious Victim

- Stand just behind and to the side of the victim, who can be standing or sitting. Support the victim with one hand on the chest. The victim's head should be lowered. Deliver four sharp blows between the shoulder blades.
- If that technique does not less choking, stand behind the victim, who can be standing or sitting. Wrap your arms around the victim's middle just above the navel. Clasp your hands together in a doubled fist and press in and up in quick thrusts. Repeat this maneuver several times. If choking continues, repeat a cycle of four back blows and four quick thrusts until the victim is no longer choking or becomes unconscious.

6.2 For an Unconscious Victim

- Place the victim on the ground and deliver rescue breathing. If the victim does not start breathing and if it appears that your air is not going into the airway. Roll the victim onto one side, facing you, with the chest against your knee. Then, deliver four sharp blows between the shoulder blades.
- If the victim still does not respond, roll the victim face-up and deliver one or more manual thrusts. To deliver the thrusts, place one hand on top of the other, with the heel of the bottom hand in the middle of the abdomen, slightly above the navel and below the rib cage. Press into the victim's abdomen with quick upward thrust. **DO NOT** press to either side.
- Clear the airway.
- Hold the victim's mouth open with one hand, using your thumb to depress the tongue.
- Use the middle finger of your hand as a hook, and, in a gentle sweeping motion, reach into the victim's throat and feel for a foreign object that may be blocking the air passage. Repeat the following procedure until the air passage is clear:
 - Administer four back blows, four abdominal thrusts, probe in the mouth, and try to inflate the lungs.
- If the object has not been retrieved, but the victim suddenly recover, take the victim to the hospital anyway. This is particularly important if the swallowed object is a fish bone, chicken bone, or other jagged object that could cause internal damage as it passes through the victim's digestive system.

7.0 Inhalation of Toxic Gas or Smoke

Remove the victim from the contaminated area. **DO NOT** enter the contaminated area without respiratory protection. Never try to rescue a person by holding your breath and entering the contaminated area.

Even with the proper respiratory protection, it is dangerous to enter a contaminated area alone or without standby help. **DO NOT** attempt rescue by yourself if you can obtain assistance quickly.

As soon as you have the victim in a safe area, perform the following procedure:

- Perform the Airway, Breathing, and Circulation (ABC) evaluation.
- If the breathing and or circulation has stopped, begin CPR.
- If breathing and circulation are present, keep the victim lying down until medical help arrives.

8.0 Electric Shock:

For a victim of electric shock, perform the following procedure:

- Throw the switch to turn off the current or use a dry board or stick to remove the electric contact from the victim.
- Perform the ABC evaluation and begin CPR if breathing and/or circulation have ceased,
- If breathing and circulation are present, remain with the victim until medical help arrives. It is important that a physician evaluate an individual who has suffered an electric shock, as electric shock can severely injure many parts of the body.

9.0 Burns

Burns can result from extreme temperatures (thermal burn) or from chemicals (chemical burn).

Burns are very painful and can be complicated by shock, contamination, and dehydration.

9.1 Extensive Thermal Burns

For victims of extensive thermal burns, use the following procedures:

- Wet the victim's remaining clothing with cool or cold water as quickly as possible to reduce burning.
- Place the cleanest available cloth over all burned areas to keep air away from the burn. Wet the burn with cool or cold water to reduce heat.
- Make the victim lie down.
- Place the victim's head and chest a little lower than the rest of the body and raise the legs, if possible.

- If the victim is conscious and can swallow, give them plenty of nonalcoholic liquids to drink (water, tea, soft drink, etc.).
- Obtain the services of a physician as soon as possible.

9.2 Small Thermal Burns

Use the following procedures on victims of small thermal burns:

- Soak a sterile gauze pad or clean cloth in cool or cold water, preferably water with ice in it. Place the cold pad over the burn.
- **DO NOT** disturb or open blisters.
- If the skin is not broken, immerse the skin in clean, cold water or apply clean ice to relieve the pain.

9.3 Liquefied Petroleum Gas (LPG) or Cold Burn

Liquefied Petroleum Gas (LPG) is composed of ethane, propane, butane, and their isomers. These gases are colorless and flammable. They are low in toxicity, slightly anesthetic, and have a mild odor ranging from aromatic to slightly disagreeable. LPG produces injuries by freezing, as does dry ice. Flushing the skin with water should treat simple burns on the skin. The burn may be either bandaged or left open. A doctor should examine extensive burns. LPG is most destructive when it gets into the eye, therefore, flush the eye with large amounts of water and refer the victim to a physician as soon as possible.

9.4 Chemical Burns of the Skin

Use the following procedures for victims of chemical burns :

- Immediately flush the burn with water. Speed helps reduce the extent of the injury.
- Apply a stream of water to the burn while removing the victim's clothes.
- Place the cleanest available material over the burned area.
- If the burn area is extensive, make the victim lie down. Place the head and chest a little lower than the rest of the body and raise the legs, if possible. A doctor should examine extensive burns.

9.5 Chemical Burns of the Eyes

Check the victim's eyes for contact lenses. Remove them if they are present. Wash the eyes by plunging the head into a vessel of clean water and having the victim blink rapidly or by allowing water from a drinking fountain or hose to flow into and flush the eyes. If neither of these procedures can be done immediately, pour clean water into the victim's eyes from a drinking cup.

It is a good practice to keep an eyewash bottle filled with clean water available for emergency use. If the victim's eyelids will not remain open, get another person to hold the lids open, and wash the eyes for 15 minutes.

Use only water to wash chemical burns. Never use another chemical to flush the burns because this can increase the extent of the injury.

10.0 Exposure to Crude Products (oil, gas or condensate)

An individual overcome by vapors must be removed from exposure immediately. A physician should be called. If the breathing is irregular or stopped, administer artificial respiration. If a liquid petroleum product is swallowed, do not induce vomiting. Call a physician promptly. For skin contact, remove the contaminated clothing and wash the skin with soap and water. If the petroleum liquids splash into eyes, wash the eyes with clear water for 15 minutes.

11.0 Shock

Whenever someone suffers from trauma or emotional upset, shock may be present. Shock must be considered as a possible complication of every injury and severe illness. Shock occurs when the circulation to the vital organs of the body (especially the brain) slows down. This condition is severe and can be life threatening if it is not corrected.

The symptoms of shock include the following:

- Cold, clammy skin
- Shallow breathing
- Rapid pulse
- Victim feels cold; may even be shaking
- Weakness
- Confusion or disorientation

Shock should be treated as follows:

- Make the victim lie down.
- Keep the airway open. If the victim vomits, turn the head to the side so the neck is arched with the chin pointing down.
- If the victim complains of being cold, use a blanket or coat for a cover.
- Increase circulation to the brain by elevating the victim's legs so that the head is lower than the body.
- Reassure the victim.
- If the victim is conscious and can swallow, administer fluids (water, tea, soft drink, etc.).
- Never give the victim alcoholic beverages.
- **DO NOT** give the victim fluids if you think the abdomen may be injured.

12.0 Heat Exhaustion

The symptoms of heat exhaustion include the following:

- Pale, cold, clammy skin

- Rapid, weak pulse
- Weakness, headache, or nausea
- Cramps in abdomen or limbs
- Excessive perspiration
- **Heat exhaustion should be treated as follows:**
- Move the victim to a cool place in the shade
- Make the victim lie down so the head is lower than the rest of the body
- Give the victim water to drink and, if available, stir one-quarter teaspoon of salt into the water
- Get medical help

13.0 Heat Stroke

Heat stroke is life threatening and immediate measures must be taken to cool down the victim and get medical care.

The symptoms of Heat Stroke include the following:

- Flushed, dry, hot skin
- Rapid, strong pulse
- Temperature is well above normal and skin feels hot to the touch
- Headache, dizziness, nausea
- Often, the victim is unconscious

Heat Stroke should be treated as follows:

- Move the victim to a cool place
- Treat for shock
- Cover the entire body with cold water using either a sponge or a hose
- Cover the victim with ice, if it is available
- Obtain medical help immediately
- If the victim is fully conscious and can swallow, administer water and, if available, one-quarter teaspoon of salt stirred into a glass of water
- **DO NOT** give the victim alcoholic beverages

14.0 Hypothermia

Hypothermia is a reduction in body temperature caused by the insufficient generation of heat. Hypothermia may occur at temperatures both above and below freezing and it is especially common in wet environments. Wind combined with cold weather makes the body temperature drop faster than calm, cold weather does. Wind chill increases the risk of hypothermia. If hypothermia is not recognized and treated quickly, it may result in death.

The following precautions help prevent hypothermia:

- Before going outside, rest and eat properly
- Continue food intake once outside
- Make sure clothing and outerwear are windproof and waterproof
- Carry emergency survival equipment
- Before beginning an outdoor task, think about what you will do if you must remain at the location overnight
- Make sure you have the shelter to carry out that encampment
- When working in a cold environment, reduce sweating by removing clothing layers and then putting them back on when you rest
- Exercise (isometric) to help the body produce heat

The symptoms of hypothermia include the following:

- The signs observed by others are poor coordination, slowness, stumbling, thickness of speech, amnesia, irrationality, poor judgment, hallucinations, bluish or puffy skin, dilated pupils, decreased heart and respiratory rates, weak or irregular pulse, and stupor.
- The symptoms noticed by the victim include intense shivering, muscle tenseness, fatigue, numbness or coldness, poor coordination, stumbling, poor articulation, disorientation, a decrease in shivering followed by muscles going rigid, bluish or puffy skin, and slow, irregular, or weak pulse.

Hypothermia should be treated as follows:

- Reduce heat loss by sheltering the victim from wind and weather
- Isolate the victim from the ground
- Replace wet clothing with windproof, waterproof clothing and have the victim increase the exercise level if possible
- Administer heat by giving the victim hot drinks. Do not give the victim alcohol beverages
- Place the victim in a sleeping bag with another person
- Make the victim huddle with others for body heat
- If you are in a permanent location, immerse the victim in water heated to 100° - 108° F

15.0 Immersion Hypothermia

Immersion in near-freezing water for only a few minutes while inadequately dressed causes rapid and total body cooling. If immediate action is not taken, death may result.

The following precautions help prevent immersion hypothermia:

- Wear an insulated life vest, or preferably, a float coat. The device must be zipped and hooked properly in order to insulate and keep a person afloat.
- Stay alert and out of the water.

- If you should fall into cold water, move as little as possible. Keep your head out of the water, your legs drawn up to your chest, and your arms crossed over your chest. This position conserves body heat and improves your chance of survival.
- The symptoms of immersion hypothermia are identical to those of hypothermia. Victims of immersion hypothermia should be treated gently and warmed immediately.
- Gently remove wet clothing and place the victim in a warm sleeping bag. If the victim is very cold, it may be necessary for one or two other people to remove their clothing and climb into the bag, using body heat to re-warm the victim.
- Do not allow the victim to exercise or move because activity increases the flow of cold blood from the extremities to the heart.
- Warm liquids are only appropriate for immersion victims with a body temperature above 90° F.

16.0 Poison Plants

Skin poisoning can result from contact with poison ivy, poison oak, or poison sumac

- Symptoms include itching, redness, or blisters on the skin after contact with poison plants.

To treat contact with poison plants, take the following steps:

- Remove the victim's clothing from the affected area.
- Be careful not to let the clothing drag across unaffected skin.
- It may be necessary to cut the clothing away from the affected areas.
- Wash the exposed area with mild soap and water. Lather and rinse several times.
- Sponge the affected area gently with rubbing alcohol, if some is available.
- If blisters appear on the skin, call a physician.

17.0 Swallowed Poisons

It is impossible to cover the hundreds of kinds of poisons and their respective guidelines for treatment. Professional advice should be obtained as soon as possible. Ask the telephone operator to connect you with the nearest Poison Control Center. Some Poison Control Centers remain open around-the-clock.

The following guidelines for treatment apply in most cases:

- Try to identify the substance ingested
- Induce vomiting by a putting finger down the victim's throat, unless the substance swallowed is a hydrocarbon
- In that case, do not induce vomiting, as this may aggravate the condition
- Call a physician, emergency room, or poison control center for advice
- If you cannot identify the poison, have the victim drink milk or a solution of milk and raw eggs to coagulate the material

- Try again to induce vomiting by forcing the victim to gag

18.0 Inhalation of Hydrogen Sulfide (H₂S)

The toxicity limits for hydrogen sulfide (H₂S) are as follows:

- Up to 10 PPM (1/1,000 of 1%) - This amount can be smelled and is safe for 8 hours of exposure
- Up to 150 PPM (1/150 of 1%) - This amount may sting the eyes and throat. It kills the sense of smell in 3 -15 minutes
- 500 PPM (5/100 of 1%) - This amount can cause a loss of balance. It may cause respiratory paralysis in 30 -40 minutes. It may require artificial respiration
- 1,000 PPM (1/10 of 1%) - This amount may cause instantaneous unconsciousness. It can cause death or permanent brain damage as a result of oxygen deficiency

H₂S inhalation should be treated as follows:

- First, be sure the rescuers have the proper respiration protection before they enter a contaminated area
- Carry the victim into fresh air immediately. If the victim is breathing, you may not need to do anything else
- Perform an Airway, Breathing, and Circulation (ABC) evaluation. If the victim is not breathing, begin mouth-to-mouth resuscitation. If circulation has stopped, commence external cardiac massage.

19.0 Insect Sting

- To prevent insect stings, the work area where these insects make nests should be inspected and sprayed frequently with an approved insecticide.
- A person who is stung by a wasp, bee, yellow jacket, ant, fire ant, or other stinging insect will suffer pain and mild swelling.
- To treat insect stings, the stinger should be removed if it can be done easily and ice should be applied to the area. Normally, nothing more needs to be done.
- Some people are hypersensitive to insect stings. These people react to stings with great swelling or they develop hives beyond the area of the sting. Some hypersensitive people have difficulty breathing or collapse entirely. Usually, these people are aware that they react more severely to each new bite.
- A hypersensitive person should obtain a kit to carry at all times, to be used in the event of a sting. Associates and the person's supervisor should be told the person is hypersensitive to insect stings.

20.0 Venomous Snakebites

The snake belt for venomous snakes lies mainly in the South and Southwest, but all states, with the exceptions of Alaska, Hawaii, and Maine have poisonous snakes.

Venomous snakes in the United States include the rattlesnake, copperhead, cottonmouth (water moccasin), and coral snake. The first three snakes are all members of the pit viper family. The most prevalent of these is the rattlesnake, which accounts for almost 60 percent of all bites and virtually all fatalities. The fangs of the pit viper leave puncture wounds, usually two. (NOTE: All non-poisonous reptiles leave a row of teeth marks when they bite.) The other venomous snake is the coral snake, which is small, multicolored and highly toxic. Fortunately, this snake is not aggressive and has a small mouth, therefore, harder for the reptile to inflict a wound.

Basic first aid for the pit vipers (rattlesnake, copperhead, and cottonmouth) consists of the following:

- **DO NOT** elevate the bite because this hastens the spread of the venom. Keep the bite at the level of the heart.
- Assure the victim that everything will be all right.
- Keep the victim warm but do not apply heat to the wound.
- Keep the victim calm and quiet.
- Transport the victim to a medical facility as soon as possible.
- Attempt to identify the snake by a method that will not expose anyone to additional danger. Kill it if possible.

The following procedure should be performed if less than 15 minutes have elapsed since the victim was bitten and if it would require more than one hour to reach a medical facility:

- Place a constricting band (not a tourniquet) two to three inches above the bite. This band is not intended to restrict the flow of blood and you should be able to insert at least one finger between the band and the skin.
- Make two incisions with a sharp knife, razor blade, or blade from a snakebite kit, one through each fang mark. **DO NOT** make an X. The incisions should be 1/4 inch long and 1/8 inch deep, just deep enough for blood to start oozing.
- Apply suction to the wound using the rubber suction cup from the snakebite kit. If nothing else is available, use mouth suction. **DO NOT** use mouth suction if you have open sores in your mouth.

To treat the bite of the coral snake, use the following procedure:

- Wash the area promptly with clear water, if some is available.
- Transfer the victim to a medical facility as soon as possible. (Suction and a constricting band are ineffective for coral snakes.)

Additional points that should be remembered include the following:

- Remain calm. Very few people actually die from snakebites.
- If you have a radio or telephone, notify someone of your exact location.
- **DO NOT** elevate the bite because this hastens the spread of the venom. Keep the bite at the level of the heart.
- **DO NOT** apply ice or a cold pack to the bite. In order to get human tissue cold enough to stop the spread of venom, it must be frozen, and the tissue would therefore be destroyed.
- **DO NOT** give the victim alcoholic beverages.
- **DO NOT** sacrifice safety for speed on the way to the medical facility
- **DO NOT** allow the victim to run because this will speed up circulation and hasten spread of the venom.

21.0 Spider Bites

There are over 1,000 species of spiders, the majority of which produce venom. However, very few spiders can penetrate human skin to inject venom. Two that can, and whose venom may be as poisonous as the venom of snakes, are the black widow and the brown recluse (fiddleback). The black widow spider is usually found in dark, moist places. It is usually jet black in color and has a red, hourglass mark on its abdomen. The bite of this spider immediately causes severe pain at the bite site.

The brown recluse (fiddleback) is normally found in sheds, houses, closets, and under leaves. It has a violin-shaped mark on its back. The bite of this spider causes little or no immediate pain. Many times, the victim is not aware of the insect bite until several hours have passed and a crusted wound surrounded by a black bulls-eye appears at the bite site. This wound is an indication that tissue damage caused by the venom has occurred. This may cause tremendous disability to the victim as the venom literally destroys all the tissue it encounters.

One or all of the following symptoms can occur from either spider bite or a venomous snakebite:

- Swelling and pain at bite site
- Headache
- Nausea or vomiting
- Joint pain
- Muscle cramps

To treat a spider bite, use the following procedures:

- Make the victim lie down.

- Constrictive bands and incision-suction are not effective for a spider bite. Take the victim to a medical facility as soon as possible.
- If the pain is severe, an ice cube can be massaged on the bite site. This will help relieve the pain.
- **DO NOT** apply ice or cold packs to the wound for a prolonged period of time.
- **DO NOT** allow the victim to walk.
- **DO NOT** give the victim alcoholic beverages.



Section III Forms & Information

Valid from: November 2008

Section III:

7.1.16 RPSHSE – 16

First Aid and Cardiopulmonary Resuscitation (CPR)

Form 1 – Approved First Aid Kits Content

Contents of Approved First Aid Kits

This First Aid Kit shall consist of the appropriate listed items and stored in a weatherproof container with each item individually packaged and sealed. MSA, North and ZEE First Aid Kits are on the **REPOWER USA** approved list. The **REPOWER USA** HSE Manager and/or their designee are responsible for checking and maintaining office and field First Aid Kits. Each kit is to be checked weekly and again prior to and post job assignment (as applicable).

Approved for Onshore/Offshore Operations

Item No.	Quantity	Product Description
1	One Unit	0.5 cc Zephiran Chloride Swab
2	One Unit	4" Compress Bandages
3	One Unit	3" Compress Bandages
4	Two Units	2" Compress Bandages
5	Two Units	1" Plastic Adhesive Bandages
6	One Unit	Ammonia Inhalants
7	One Unit	Stingfoe Swabs
8	Four Units	Triangular Bandages
9	Two Units	Plain Sterile Gauze Pads
10	Two Units	Foile Ointment
11	One Unit	Eye Dressing Packet
12	One Unit	Knuckle Bandages
13	Two Units	Polyethylene Disposable Gloves - Medium
14	One Unit	Safe Airway Mask (SAM) Resuscitator (Bloodborne Pathogen)
15	One Unit	24" x 2 yards Gauze
16	One Unit	Eye Irrigation Bottle
17	One Unit	Emergency Blanket
18	One Unit	First Aid Material Instruction Booklet
19	One Unit	Rescue Breather
20	One Box	Polyethylene Disposable Gloves - Large
21	One Unit	3" Slanted Tweezers Kit
22	One Unit	4" Scissors Kit
23	One Unit	Fingertip Bandages
24	One Unit	Eye Dressing
25	One Unit	Small Ice Pak (4" x 2 3/8")
26	One Unit	Adhesive Tape 1" x 10 yards
27	Two Units	Elastic Strips (7/8" x 3")
28	One Unit	Antiseptic Swabs
29	One Unit	Eye Wash (1/2 oz.)
30	One Unit	Extra Large Compress Dressing
31	One Unit	Inflatable Splint Kit
32		



Section III Forms & Information

Valid from: November 2008

Approved First Responder Kit

Item No.	Quantity	Product Description
1	One Unit	4" Compress Bandages
2	One Unit	Knuckle Bandages
3	One Unit	Fingertip Bandages
4	One Unit	Burn Relief Spray
5	Four Units	Triangle Bandages
6	One Unit	Gauze Pads (2" x 2")
7	One Unit	Eye Wash
8	One Unit	Ammonia Inhalants
9	One Unit	Adhesive Tape (1/2" x 2 1/4 yards)
10	Two Units	Sterile Kling
11	One Unit	Tweezers
12	One Unit	Antiseptic Towellettes (Bloodborne Pathogens)
13	Two Units	Elastic Strip Bandages
14	Two Units	Alcohol Prep (package of 5)
15	One Unit	Rescue Breather
16	One Unit	Polyethylene Disposable Gloves
17	One Unit	Inflatable Splints Kit



Section III Forms & Information

Valid from: November 2008

Approved for Office

Item No.	Quantity	Product Description
1	One Unit	0.5 cc Zephiran Chloride Swab
2	One Unit	4" Compress Bandages
3	One Unit	3" Compress Bandages
4	Two Units	2" Compress Bandages
5	Two Units	1" Plastic Adhesive Bandages
6	One Unit	Ammonia Inhalants
7	One Unit	Stingfoe Swabs
8	Four Units	Triangular Bandages
9	Two Units	Plain Sterile Gauze Pads
10	Two Units	Foile Ointment
11	One Unit	Eye Dressing Packet
12	One Unit	Knuckle Bandages
13	Two Units	Polyethylene Disposable Gloves - Medium
14	One Unit	Kling - Sterile (3" x 5')
15	One Unit	24" x 2 yards Gauze
16	One Unit	Eye Irrigation Bottle
17	One Unit	Emergency Blanket
18	One Unit	First Aid Material Instruction Booklet
19	One Unit	Rescue Breather
20	One Box	Polyethylene Disposable Gloves - Large
21	One Unit	3" Slanted Tweezers Kit
22	One Unit	4" Scissors Kit
23	One Unit	Fingertip Bandages
24	One Unit	Eye Dressing
25	One Unit	Small Ice Pak (4" x 2 3/8")
26	One Unit	Adhesive Tape 1" x 10 yards
27	Two Units	Elastic Strips (7/8" x 3")
28	One Unit	Antiseptic Swabs
29	One Unit	Eye Wash (1/2 oz.)
30	One Unit	Extra Large Compress Dressing
31	One Unit	Safe Airway Mask (SAM) Resuscitator
32	One Unit	Cotton Tip Applicator
33	One Unit	Large Patch Bandages
34	One Unit	Small Patch Bandages
35	One Unit	Vaseline Gauze (3" x 18")
36	One Unit	Clean Wipes
37	One Unit	Tincture of Green Soap (8 oz.)
38	One Unit	Antiseptic Aerosol (3 oz.)
39	One Unit	Burn Septic (3 oz.)
40	One Unit	Inflatable Splints Kit

	Section III RPSHSE 7.1.17	Valid from: November 2008
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Revision Profile

Rev.	Date	Name	Approval Signature	Remarks
0	11/08	Owens O'Quinn QHSSE Consultant	On File	ORIGINAL
0	11/08	Tammy Conekin	On File	ORIGINAL
1				
2				
3				
4				
5				

Original Review Progress

Date	Reviewer	Signature
11/08	J.K. Barrilleaux – Grammar/Technical Format <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Owens O'Quinn – QHSSE Consultant <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Tammy Conekin – Head of Service	On File



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Bloodborne Pathogens Exposure Control Program

Contents

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1.0 Introduction

In the past, you could aid or rescue a co-worker without much thought for your own safety. However, today it is not that easy. Deadly diseases can stand between you and your response to a co-worker who has been injured. Such diseases include Hepatitis "B" Virus (HBV) and the Human Immunodeficiency Virus (HIV), which causes AIDS. Although there are many other diseases carried by blood, it's especially important to know about these two.

2.0 Regulatory Background

The proposed standard is designed to reduce the occupational exposure to human blood and certain body fluids and tissues that are potentially infectious for HBV, HIV, and other Bloodborne Pathogens. Blood is the major source of exposure for employees in the workplace.

The Federal Occupational Safety and Health Administration's (OSHA) Final Rule Governing Occupational Exposure to Bloodborne Pathogens (29 CFR 1910.1030, December 6, 1991) affects health care facilities, including the health units in industry, as well as non-volunteer fire and rescue squads and first aid responders.

The Center for Disease Control (CDC), under the authority of Public Law 100-607, the Health Omnibus Programs Extension Act of 1988, Title II, and Programs with Respect to Acquired Immune Deficiency Syndrome ("AIDS Amendments of 1988"), has issued "Guidelines for Prevention and Transmission of HIV and HBV to Health-Care and Public Safety Workers" which is used to ensure exposure control.

3.0 Policy

Since it is possible to become infected with diseases such as Acquired Immunodeficiency Syndrome (AIDS), malaria, syphilis, brucellosis, and hepatitis B (HBV) through a single exposure, only trained and qualified personnel shall administer emergency and/or first aid medical care.

All human blood and the body fluids contaminated with blood should be considered infectious for Hepatitis B Virus (HBV), AIDS or HIV, and other Bloodborne Pathogens. Unprotected contact with blood and other potentially infectious material shall be avoided. Engineering controls will be used, whenever possible, to eliminate the potential exposure.

All regulated waste shall be disposed of in the appropriate containers and removed by a state-approved medical waste disposal company.

This Exposure Control Plan applies to all employees who, as a part of their job duties, can reasonably anticipate a potential exposure to Bloodborne Pathogens and it sets forth the minimum requirements for those who may be exposed or come in contact with blood or other potentially infectious materials to the skin, eyes, and mucous membranes.

Examples:

- You forget to put gloves on before taking care of a bleeding co-worker and you have a cut on your hand.
- Blood splashes into your eyes.
- You have a cut on your upper arm (above your gloved hand) and blood gets on this area.

All **REPOWER USA** Employees shall have access to the **REPOWER USA** Exposure Control Plan through training classes, on-site copies of the Exposure Control Plan provided in the **REPOWER USA** HS&E Manual, and upon request, as set forth in 29 CFR 1910.1020 (e).

4.0 Key Requirements

4.1 Exposure Determination

The exposure determinations in this procedure shall be made without regard to the use of Personal Protective Equipment (PPE), as identified in 29 CFR 1910.1030 (c)(2)(C)(ii).

- Personnel whose duties require emergency response and rendering first aid have been identified as the employees with potential exposure.
- Blood from open wounds or other body fluids contaminated with blood would be the major area of concern for exposure to Bloodborne Pathogens.
- The potential routes of exposure would be through hand contact while treating minor wounds or mouth contact while performing CPR.
- All human blood and other potentially infectious materials are to be treated as if they are infectious.

4.2 Personal Protective Equipment (PPE)

- **Gloves** - Gloves shall be worn when an employee has the potential for their hands to have direct skin contact with blood, other potentially infectious materials, mucous membranes, non-intact skin, and when handling items or surfaces soiled with blood or other potentially infectious materials. Gloves shall be replaced as soon as possible when visibly soiled, torn, punctured, or when their ability to function as a barrier is compromised. Disposable gloves shall not be re-used.
- **Masks, Eye Protection, and Face Shields** - Masks and eye protection or chin-length face shields shall be worn whenever there is a potential for eye, nose, or mouth contamination due to splashing, spraying, spattering, etc.

- **Gowns, Aprons and Other Protective Body Clothing** - The appropriate protective clothing shall be worn if there is a potential for the employee's clothing to be soiled with blood or other potentially infectious materials.
- **Surgical Caps or Hoods** - Caps or hoods shall be worn where there is a potential of infectious materials getting on the head.
- **Mouthpieces and Resuscitation Bags** - These items shall be utilized, where practical, for the administration of cardiopulmonary resuscitation (CPR).

4.3 Engineering/Environmental Controls

The elimination of workplace Bloodborne Pathogens and the associated hazards shall be approached through the application of Engineering and Work Practices utilized at the work place, with these applied controls and workplace practices being utilized to minimize employee exposure. After the appropriate engineering and work practices have been applied, the remaining hazards shall be identified and the appropriate Personal Protective Equipment (PPE) shall also be used.

The engineering controls and Workplace Practices shall be examined, maintained, and/or replaced on a regular basis to provide the maximum effectiveness for the protection of employees.

A pro-active approach to Employee Safety is our first line of defense in the elimination of the hazards at their source(s).

They may include, but are not limited to, the following:

- Biological safety cabinets
- Waste containers for contaminated sharps

If an area becomes contaminated, the fluid shall be absorbed with an absorbent disposal material and placed in a biohazard bag. The area should then be cleaned **IMMEDIATELY** with an EPA-approved disinfectant. Gloves shall be worn when cleaning any bloodstained areas. If the area cannot be cleaned up immediately, a biohazard sign must be affixed to the area until it is disinfected. Bloodstained carpeting shall be replaced if adequate decontamination is not possible.

4.4 Work Practices

Workplace Work Practices shall be utilized to minimize employee exposure to workplace hazards. Employee and management participation in the **REPOWER USA** provided HS&E Training, the Job Site Safety Inspections (JSSIs), the Job Safety Analyses (JSAs), the daily, weekly, and monthly work site HS&E meetings, the equipment preventative maintenance methods, and the Hazard Identification and Evaluation Reporting will identify safeguards against and eliminate the potential hazards.

Affected Employees shall follow these specific procedures to reduce their exposures to pathogens:

- Certain process procedures for handling blood or other infectious materials in a manner that minimizes splashing, spraying, etc. **Example :** Covering the stopper with gauze before removing it can minimize the spattering of blood or serum that occurs when rubber stoppers are pulled out of specimen tubes.
- Employees shall wash their hands immediately, or as soon as possible, after the removal of gloves and after any hand contact with potentially infectious materials.
- **REPOWER USA** shall provide accessible hand-washing facilities to the employees. In the event that hand-washing facilities are not feasible, due to remote locations; etc., **REPOWER USA** shall furnish an appropriate antiseptic hand cleaner in addition to clean cloth towels and/or towelettes. Through information and training, **REPOWER USA** shall keep employees informed of the necessity for immediate hand washing with soap and water following the contact of body areas with blood or other potentially infectious materials.
- Personal protective equipment shall be worn while inside the work area and removed when the employee leaves the work area. In other words, employees shall not be wandering the halls or any other area while wearing protective clothing.
- The first aid facility or lab shall be a restricted area only accessed by the authorized personnel. Doors leading to the work area shall be closed whenever activities are in progress and the universal biohazard warning sign shall be posted on all such access doors.
- Used needles and other sharps shall not be sheared, bent, broken, recapped, or re-sheathed by hand. Used needles shall not be removed from disposable syringes. Discarded needles shall be placed in an approved sharps container. The container shall be placed or mounted so that the employee can see the top of the container and any other discarded sharps in it to prevent an accidental stabbing from a discarded needle.
- Broken glassware shall not be picked up by hand. Instead, it shall be collected with tongs or swept up with a dustpan and brush.
- Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in the work areas where there is a potential for occupational exposure.
- Food and drink shall not be stored in the refrigerators, freezers, or cabinets where blood or other potentially infectious materials are stored or in other areas of possible contamination.
- Mouth pipette suctioning is prohibited.

- All equipment, environments, and working surfaces shall be properly cleaned and disinfected after contact with blood or other potentially infectious materials.
- The work site shall be maintained in a clean and sanitary condition at all times.
- Specimens of blood, urine, or other potentially infectious materials shall be placed in a closable, leak-proof container labeled or color-coded prior to being stored or transported. If outside contamination of the primary container is likely, then a second leak-proof container that is labeled or color-coded shall be placed over the outside of the first and closed to prevent leakage during handling, storage, or transporting.
- All infectious wastes destined for disposal shall be placed in closable, leak-proof containers or bags that are labeled or color-coded.
- Contaminated laundry shall be handled with as little agitation as possible and placed in labeled bags at the location where it is used. Leak-proof bags shall be used to transport wet laundry.
- When any potential occupational exposure is present for **REPOWER USA** personnel "ALL" necessary and appropriate Personal Protective Equipment will be provided to affected employees at no cost to the employees. So the employee elect to use provided PPE it will be documented and placed in appropriate medical files.

4.5 Hepatitis "B" Vaccination

The Hepatitis "B" vaccine is made available to employees under these three circumstances:

- If they are exposed to potentially infectious material at least once a month
- Following any exposure incident
- When traveling outside the United States in areas that have a potential of exposing employees to the Hepatitis "B" Virus
- **REPOWER USA** employees are provided Hepatitis "B" Virus vaccine at no cost to the employee.

4.6 Signs and Labels

The precautionary signs and labels required by 29 CFR 1910.1030 (e)(1)(ii)(iii), other statutes, regulations or ordinances, and/or in combination with other signs and labels that are required shall be used. It shall be ensured by **REPOWER USA** that other signs and/or labels that could distract employees from the purpose of the required signs and/or labels shall not be placed near the required signs and/or labels.

REPOWER USA shall, through HS&E work practices, maintain the signs and labels to ensure that the information and legends are readily visible.

- Warning labels shall be affixed to containers of infectious waste, refrigerators and freezers containing blood and other potentially infectious materials, and other containers used to store or transport blood or other infectious materials.

- The labels shall display the universal biohazard symbol and include the word “Biohazard.” They must be fluorescent orange or orange-red in color with the lettering and symbols in a contrasting color.
- Red bags or red containers may be substituted for the labels on containers of infectious waste.

4.7 Information and Training

REPOWER USA will ensure that each employee with the potential of an occupational exposure participates in the **REPOWER USA** Training Program provided to each employee at no cost. The **REPOWER USA** Training Program provides training during pre-employment HS&E Orientation and annually thereafter.

The **REPOWER USA** Training Manual is reviewed on an annual basis, upon the notification of the recognition of a potential hazard through the **REPOWER USA** Hazard Identification and Evaluation Reporting System or when new information or regulations are placed in effect.

The provided training shall cover, but is not be limited to, the following items

- An explanation of the contents of the Bloodborne Pathogen standard
- A general explanation of the epidemiology and symptoms of bloodborne diseases
- The modes by which bloodborne diseases are transmitted
- An explanation of the Exposure Control Plan
- Recognition of exposure situations
- Practices to prevent exposure
- Selection and handling of personal protective equipment
- Information on the HBV vaccine
- Emergency procedures
- Explanation of the appropriate disposal procedures of personal protective equipment
- Procedures for reporting an exposure incident and the medical follow-up that would be required
- Signs and labels

4.8 Recordkeeping

REPOWER USA will establish and maintain an accurate record for each employee with occupational exposure in compliance with 29 CFR 1910.1020. These records will be made available upon the request of the employee for examination and copying and by furnishing a copy to the employee’s representative and to OSHA, in accordance with 29 CFR 1910.1020.

- All information will be kept confidential and will not be released to anyone within or outside the company, unless required by law, without written permission from the employee.

- **Medical Records include:**
 - The name and social security number of the employee
 - A copy of the employee's Hepatitis B vaccination records and the medical records relative to the employee's ability to receive the vaccination or the circumstances of an exposure incident
 - A copy of all medical results
 - A copy of the physician's written opinion
- The portion of the medical record required under this standard will be made available, upon request, to the subject employee, to anyone having written consent of the subject employee, and to OSHA, in accordance with 29 CFR 1910.1020, for examination and copying.
- The medical records shall be maintained for the duration of employment plus 30 years.
- **Training Records** - All training records will be kept in the **REPOWER USA** Training Files at least 3 years. These records shall include, but are not limited to:
 - The dates of the training sessions
 - The contents or a summary of the training sessions
 - The names of the persons conducting the training
 - The names of all the persons attending the training session and their Social Security Numbers and/or other appropriate identification methods

5.0 Definitions

- 5.1 **Blood** - Human blood, human blood components, and products made from human blood.
- 5.2 **Bloodborne Pathogens** - Pathogenic microorganisms that are present in human blood and can cause disease in humans.
- 5.3 **Contaminated** - The presence or the reasonably anticipated presence of blood or other potentially infectious materials or materials that might contain sharps.
- 5.4 **Engineering Controls** - Controls that isolate or remove the hazard from the workplace.
- 5.5 **Exposure Incident** - Any time blood or infectious body fluids come in contact with non-intact skin (skin that has a cut or scrape on it) or the mucous membrane (lips, mouth, nose) or the eyes.
- 5.6 **Exposure Incident Investigation** - If an exposure incident occurs, each location shall follow their normal process for investigating occupational injuries. The HS&E Department will be available for consultation, as needed, during the investigation.
- 5.7 **Hand-washing Facility** - A facility providing an adequate supply of running potable water, soap, and single use towels or hot air-drying machines. An alternative method is the use of antiseptic cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes.

- 5.8 Occupational Exposure** - Reasonably anticipated skin, eye, mucous membrane, or parental contact with blood or other potentially infectious materials that might result from the performance of an employee's duties.
- 5.9 Other Potentially Infectious Materials**
- HIV or HBV containing cell or tissue cultures
 - Organ cultures, culture media, or similar solutions
 - Blood, organs, and tissues from experimental animals infected with HIV or HBV
 - Unfixed tissues other than intact skin
 - Any other body fluids that become contaminated with blood
- 5.10 Parental** - Piercing mucous membranes or the skin barrier through such events as needlesticks, human bites, cuts, and abrasions
- 5.11 Sharps** - Any object that can penetrate the skin
- 5.12 Source Individual** - Any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee
- 5.13 Sterilize** - The use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores
- 5.14 Universal Precautions** - An approach to infection control
- 5.15 Work Practice Controls** - Controls that reduce the likelihood of exposure by altering the manner in which a task is performed

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Section III:

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Bloodborne Pathogens Exposure Control Program

Form 1 - Hepatitis “B” Vaccination Declination Form

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Hepatitis "B" Vaccination Declination Form

Date: _____

I, the undersigned, fully understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring the **Hepatitis "B" Virus (HBV)** infection. I have been given the opportunity to be vaccinated with the **Hepatitis "B" Virus (HBV)** vaccine, at no charge to myself. However, I decline the **Hepatitis "B" Virus (HBV)** vaccination at this time. I fully understand that by declining this vaccine, I continue to be at risk of acquiring the **Hepatitis "B" Virus (HBV)**, a serious disease. If in the future, if I continue to have an occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with the **Hepatitis "B" Virus (HBV)** vaccine, I can receive the vaccination series at no charge to me.

Employee: _____

Print full name in block letters

Employee Social Security Number: _____

Employee Signature: _____

Date entered into the Employee Personal Medical File: _____

Person who entered it into the Employee Personal Medical File: _____

	Section III RPSHSE 7.1.18	Valid from: November 2008
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Revision Profile

Rev.	Date	Name	Approval Signature	Remarks
0	11/08	Owens O'Quinn QHSSE Consultant	On File	ORIGINAL
0	11/08	Tammy Conekin	On File	ORIGINAL
1				
2				
3				
4				
5				

Original Review Progress

Date	Reviewer	Signature
11/08	J.K. Barrilleaux – Grammar/Technical Format <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Owens O'Quinn – QHSSE Consultant <i>Evergreen QHSSE Solutions LLC</i>	On File
11/08	Tammy Conekin – Head of Service	On File



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Illness and Injury Prevention Program (CAL/OSHA)

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INTRODUCTION

REPOWER USA COMMITMENT TO SAFETY AND HEALTH

Safety and Health Policy

REPOWER USA is firmly committed to maintaining a safe and healthful working environment. To achieve this goal, **REPOWER USA** has implemented this comprehensive Injury and Illness Prevention Program. This program is designed to prevent workplace accidents, injuries, and illnesses. A complete copy of the program is maintained in the Human Resource Department and is available for your review.

Objectives of the Injury and Illness Prevention Program

REPOWER USA's Injury and Illness Prevention Program is designed to reduce the number of accidents to an absolute minimum, create an attitude of safety consciousness in general management, field, shop supervision, employees, provide a safety program consistent with good construction practices.

Safety Responsibility for and Health

All employees of **REPOWER USA** are responsible for working safely and maintaining a safe and healthful work environment.

1.0 PERSONS WITH RESPONSIBILITY AND AUTHORITY FOR IMPLEMENTING THE PROGRAM.

1.1 Program Administrators

The Program Administrator is **REPOWER USA** HSE Manager. The **REPOWER USA** HSE Manager is responsible for overall implementation and maintenance of **REPOWER USA** Injury and Illness Prevention Program.

Of course, all employees, supervisors, and managers are responsible for assisting in this safety effort. If anyone is aware of an unsafe or hazardous condition, he should bring it to the attention of his supervisor or other management personnel immediately. Only through a team effort by all employees can we make this a safe work environment.

1.2 Management

The ultimate responsibility for implementing and administering an injury and illness prevention program for the **REPOWER USA's** employees rests with management. Their specific areas of responsibilities are as follows:

- Development and implementation of a safety program.

- Assignment of appropriate persons to administer and enforce the program.
- Periodic review and evaluation of accident records for **REPOWER USA** employees.
- Periodic shop/field inspection to note safety conditions.
- Periodic participation in safety meetings.
- Set policy for the hiring and training of new employees.

1.3 HSE Manager

- Assist Management in establishing and maintaining an effective safety program as set forth below:
 - Development of techniques, ideas, and topics for presentation of safety program to employees at all levels.
 - Maintain liaison with field and shop supervisors, regulatory agencies and Workers' Compensation Insurance carrier.
 - See that accidents are reported and investigated promptly and that corrective action is taken.
 - Provide agenda topics for safety meetings.
- Provide training and guidance to supervisors in enforcement of the safety program.
- Be available for consultation on all matters relating to safety.
- Assist in new employment selection, training and safety indoctrination.
- Maintain safety records and reporting requirements.
- Provide a program for disciplinary action for violations of safe work practices/safety policies (Warning Notice).

1.4 On-site Field Supervisors

They, more than any other persons, carry the burden of implementing, maintaining, and enforcing the safety program at the jobsite and in the shop. Their attitude toward safety will determine the accident record of the REPOWER USA.

All of the supervisors are expected to reflect a positive attitude regarding accident prevention. They are the "Key Individuals" in the safety program. Their responsibilities include:

- Training and safety orientation of employees as to:
 - Understanding requirements of the job.
 - Mental (knowledge)
 - Physical
 - Proper clothing.
 - Proper personal protective equipment.
 - First Aid and doctor's treatment.
 - Encourage safety suggestions from workmen. Ask them to report unsafe practices, conditions, or equipment.
 - Injury and Illness Prevention Program.
 - Safety policy rules card - signed.

- Conduct "tailgate" or "tool box" safety meetings. It is directed that each
- On-Site Field Supervisor/Supervisor hold a safety meeting once a week, or more often if circumstances warrant.*
- Being alert to recognize possible accident-producing conditions in work practice and equipment operation and maintenance.
- Inspection of the work place each day to see that safe conditions and safe working methods are being used.
- Follow up on compliance with safety recommendations made by
- Management, HSE Manager, or Insurance Safety Representative.
- Accident investigation and reporting.

1.5 Worker's Responsibility

- To observe the "Code of Safe Practices."
- To set a good example for fellow workmen.
- To cooperate with supervisors in preventing accidents.
- To make safety suggestions to his supervisor.
- To take good care of REPOWER USA equipment and report unsafe or defective equipment to his supervisor.
- To help keep the jobsite and shop areas clean.
- To report all injuries promptly to his supervisor.

1.6 Subcontractors working for this REPOWER USA are responsible for:

- Observing the safety rules established by the REPOWER USA.
- Safety orientation and training of their employees.
- Providing safety and personal protective equipment for their employees.
- Taking immediate corrective action when notified of a safety problem.
- Accident reporting.

2.0 REPOWER USA SYSTEM FOR ENSURING THAT EMPLOYEES COMPLY WITH SAFE AND HEALTHY WORK PRACTICES.

2.1 Orientation.

REPOWER USA hires and employs union employees who have completed their apprentice training program.

All apprentices will work directly under the On-Site Supervisor in charge.

New employees are trained in the Code of Safe Practices as identified within the **REPOWER USA** HSE Manual and site-specific safety procedures by the HSE Manager or their immediate supervisor. Documentation of receipt of and training in the Code of Safe Practices is to be completed by each employee on the form included in the Employee Safety Orientation Handbook.

2.2 Code of Safe Practices.

The **REPOWER USA** has developed a Code of Safe Practices which sets forth general and specific safety rules and procedures for all employees. A copy of the Code of Safe Practices is given to each employee, and it is posted on the employee bulletin board.

2.3 Retraining.

The Code of Safe Practices and the safety procedures are reviewed during periodic safety meetings for employees and supervisors. Documentation of safety meeting is to be completed by the supervisor or manager conducting the meeting.

A safety meeting at least every five (5) working days shall be held by the department supervisor or jobsite On-Site Field Supervisor, which is designed to:

- Provide an opportunity for employees to bring forward concerns and ideas about safety issues.
- Act as an occupational safety and health training program having as its objective to instill safe and healthy work practices.
- Provide specific instruction with respect to hazards specific to each employee's job assignment.
- Warn employees that they must comply with safe and healthy work practices as instructed, or face disciplinary action.
- Reassure employees that they are encouraged to inform their employer or his designees of hazards at the work site without fear of reprisal.
- Instill a constant sense of safety-consciousness among the supervisor and his or her employee group.
- The HSE Manager shall hold special training programs for all supervisors and employees, in order to give them a framework of safety-consciousness, as well as to acquaint them with new substances, processes, procedures, or equipment that may be introduced into the workplace jobsite, especially when the employer becomes aware of or receives notification of a new or previously unrecognized hazard.

2.4 Discipline

The **REPOWER USA** requires that all employees and supervisors strictly adhere to the safety rules set forth in the Code of Safe Practices.

If anyone violates a safety rule, he or she will be disciplined in accordance with the severity of the infraction. The discipline imposed will be in the sole discretion of the **REPOWER USA** (limited only by contractual or other legal restrictions), and may range from a warning, to a disciplinary suspension without pay, up to and including discharge. The supervisor or manager imposing the discipline will be responsible for documenting it on the form included in RPSHSE 7.1.15 – Progressive Disciplinary Program forms. A copy of the forms should be sent to the HSE Manager.

3.0 SYSTEM FOR COMMUNICATING AND ENCOURAGING EMPLOYEES TO INFORM EMPLOYER OF HAZARDS

3.1 Encouragement of Employee Reporting

REPOWER USA encourages and, indeed, requires all employees to inform management (supervisors, On-Site Field Supervisors, other management personnel, or the HSE Manager) of any unsafe or hazardous condition that could impact personnel.

3.2 No Discrimination for Employee Reporting

No employee shall be disciplined or discriminated against for reporting an unsafe condition to management or for correcting an unsafe condition. Employees should report all unsafe conditions to their supervisors or the management personnel.

If an employee sees an employee or supervisor violating the **REPOWER USA's** Code of Safe Practices as identified within the **REPOWER USA** HSE Manual, he should report this to upper management or the HSE Manager.

3.3 Employee Safety Report Forms

Employees may report unsafe conditions or violation of safety rules anonymously on the Employee Safety Report Forms. Forms will be available in the personnel office and on employee bulletin boards. The forms will also be disseminated at employee safety and training meetings, and employees will be encouraged to use the forms at these meetings.

4.0 SYSTEM FOR IDENTIFYING, EVALUATING, AND PRESENTING WORKPLACE HAZARDS.

4.1 System for Identifying, Evaluating and Preventing Workplace Hazards

REPOWER USA has established a system for identifying, evaluating, and preventing workplace hazards. This system includes the following:

- **REPOWER USA** investigates and records all accidents, injuries, and illnesses that take place during work or on its premises as identified within the **REPOWER USA** HSE Manual.
- **REPOWER USA** makes periodic inspections of the general work areas and specific work stations, and records the results of those inspections as identified within the **REPOWER USA** HSE Manual.

- **REPOWER USA** evaluates information provided by employees on safety and health matters. To this end, the **REPOWER USA** encourages employees to report concerns regarding unsafe or hazardous conditions, and near miss, and has provided a written reporting system as identified within the **REPOWER USA** HSE Manual.
- Based on the foregoing, the **REPOWER USA** has promulgated a Code of Safe Practices as identified within the **REPOWER USA** HSE Manual which is posted and given to each employee. The Code of Safe Practices is reviewed periodically at employee and supervisory safety meetings as identified within the **REPOWER USA** HSE Manual.

5.0 ACCIDENT REPORTING REQUIREMENTS

5.1 Accident/Incident Reporting Guidelines

A written report is to be made promptly for any accident. If an accident occurs in the field, Management must be notified immediately and a copy of the "Supervisor's Report of Injury" will be given to the HSE Manager within 24 hours. Reference RPSHSE 7.1.1 Accident/Injury/Near Miss Incident Investigation and Reporting.

After the occurrence of an accident which is fatal to one or more employees, and/or results in the hospitalization of any employee, a report shall be made to Management immediately. In addition, in the event of a fatality or hospitalization of one or more employees for more than 24 hours, a report to the CAL/OSHA Regional Office must be made within 24 hours.

- **Automobile Accidents**

REPOWER USA employees who may be involved in a motor vehicle accident are required to accumulate pertinent information and to supply this information to **REPOWER USA** Safe Records Clerk who will complete an accident report to be transmitted to **REPOWER USA** Insurance carrier. For all accidents that occur in the office, yard, or warehouse, the Supervisor will immediately report it to the HSE Manager or Management.

5.2 Time Frames for Filing Reports.

- The Workers' Compensation Reform Act of 1989 requires employers to furnish, within one working day, the form "Employee's Claim for Workers' Compensation Benefits."
- This form must be given to the injured employee (or his dependent) by his Supervisor. A completed copy of this form is mailed to the insurance **REPOWER USA** within three (3) days.
- **REPOWER USA** HSE Manager is responsible for obtaining all necessary information to complete the form "Employer's Report of Occupational Injury or Illness." California law requires an employer to file this report within five (5) days of every industrial injury.

5.3 Conclusion.

1. After an accident has been reported to the HSE Manager, he will then follow up with the On-Site Field Supervisor/Supervisor to further investigate the cause of the accident and correct the problem, if possible, to prevent recurrence. The HSE Manager and/or Supervisor could then use all of the known facts surrounding that accident as an example when discussing safety in training meetings.

6.0 ACCIDENT INVESTIGATION

6.1 General

All accidents must be investigated by the On-Site Field Supervisor, Safety Coordinator or HSE Manager. A Supervisors Accident Report form must be filled out, signed by the On-Site Field Supervisor and sent to the Safety Coordinator and HSE Manager for each and every accident. **REPOWER USA** requires that **"ALL"** each accident/incident/near miss be investigated. The main purpose of the investigation is not to determine who was at fault, but to understand what occurred and how to prevent it from happening again.

A sample copy of the Supervisors Accident Investigation Report has been included in RPSHSE 7.1.1 Accident/Injury/Near Miss Incident Investigation and Reporting Forms. Additional copies are available from the HSE Manager or the Main Office.

6.2 Accident Investigation Procedure

- **Purpose**
 - The purpose of accident investigation is to identify those unsafe conditions and acts which contribute to injuries in order that solutions for accident prevention may be proposed.
 - Accident investigation is an invaluable tool in controlling losses.
 - Each accident must be considered a total loss unless its true cause is objectively determined and all contributing deficiencies are corrected. Thorough investigation, reporting, recording and corrective follow-up of each incident/accident can be time consuming. However, putting forth necessary time and effort to prevent the reoccurrence of each accident is an invaluable investment that will pay compounded benefits to employees and management as the number of accidents decrease.
- **Employee Accidents**
 - All accidents regardless of whether or not they result in injury should be thoroughly investigated by the employee's immediate On-Site Field Supervisor and reported to the HSE Manager within 24 hours. This should include "near miss" accidents. The investigation should be extensive enough to allow the On-Site Field Supervisor to suggest practical corrective action.

- A written report should be made which includes:
 - Injured employee's statement concerning the accident.
 - Statements from other witnesses.
 - Complete description of the accident including the type or work in which the employee was involved.
 - Evaluation of unsafe conditions and acts.
 - Recommendations for action to prevent similar accidents.
- **Definitions**
 - Industrial Injury: An injury arising out of an in the course of employment with the **REPOWER USA**.
 - Occupational Illness: A disease caused by specific hazardous conditions or materials when there is a direct relationship between the conditions under which the work is performed and the occupational disease.

6.3 Procedures for investigating an Accident/Loss

- **Check the Scene**
 - Begin where the accident occurred. The first step is to carefully examine where the injury occurred.
 - Reconstruct as much as possible the chain of events leading up to the injury, and attempt to determine the single event that caused the injury. Have the employee tell you what happened. If necessary, have him/her show you up to the point where the injury occurred. **DO NOT** let them do the part of the incident that resulted in the injury.
- **White it Down**
 - Make notes on all facts that may relate to the cause of the injury. As an example: employee had complained of dizziness or employee had not used proper equipment, etc.
 - Write down any procedure used; that is, unsafe act, etc.
 - Write down any unsafe conditions in work area, i.e. defective tools or faulty equipment noted.
 - Write down such other items as: the time of your investigation, the lighting conditions, the weather conditions, if pertinent, a description or supplementary evidence, and conversations having a bearing on the case.
- **Collect the Evidence**

If an injury or near miss occurs when machine parts or structures fail, it is essential to determine what failed and why. This can frequently be done without laboratory analysis and corrective action can be initiated without great expense. If, however, a detailed study is determined to be essential, then all components shall be collected and submitted for study immediately if the cost of analysis is economically feasible.

- **Interview Witness**

It is important to interview witnesses at the scene or as soon thereafter as possible. Use **REPOWER USA** Witness Interview utilize RPSHSE 7.1.1 Accident/Injury/Near Miss Incident Investigation and Reporting Forms for gathering information.

- **Interview the Victim**

- Timing is important. If the injury is minor, the interview should be made as soon as the investigation of the scene and a review of the medical report is complete.
- If the injury is serious, selecting the right time is a judgment factor. Too soon afterward and the victim may be confused and inaccurate; waiting too long may cause them to be cautious and evasive. Let the employee tell the story as they wish without actual interrogation, but a complete picture should be encouraged. The interview must be complete, and it may be necessary to question the employee or witnesses several times in order to verify information and stories.

- **Weigh the Evidence**

- It is essential to eliminate any inconsistencies in the testimony of the injured or witnesses even if further questioning is required.
- When assembled, all facts should be reviewed for completeness before submission of the "Accident Investigation Report" form to the On-Site Field Supervisor or HSE Manager.

7.0 SAFETY INSPECTIONS, INVESTIGATIONS AND CORRECTION OF UNSAFE OR UNHEALTHY CONDITIONS.

7.1 General Inspections

As set forth above, the **REPOWER USA** makes periodic inspections of the general work areas and specific work stations. General inspections are the responsibility of the HSE Manager or jobsite On-Site Field Supervisor. Safety inspections are documented on the Safety Audit Form (See Form #6) or other equipment inspection forms kept by **REPOWER USA** HSE Department.

7.2 Supervisory Inspections

Supervisors are responsible for making daily inspections of the work areas, machinery, equipment, work practices, and job sites of the employees under their authority. All non-compliance with the **REPOWER USA's** Code of Safe Practices and CAL/OSHA is to be corrected immediately as identified within the **REPOWER USA** HSE Manual.

Any unsafe or hazardous machinery, equipment, or area will be "red-tagged" (shut down or evacuated) immediately. In the case of hazardous machinery equipment, maintenance should be called. The machine shall remain shut down until it has been cleared for use by maintenance. Employees who violate the Code of Safe Practices as identified within the **REPOWER USA** HSE Manual RPSHSE 7.1.15 Progressive Disciplinary Program shall be disciplined, and a record of the warning notice or other disciplinary action shall be maintained on the RPSHSE 7.1.15 Progressive Disciplinary Program forms included.

7.3 Employee Inspections and Reports

Employees are responsible for inspecting their work areas and machinery for unsafe or hazardous conditions. Employees should immediately correct all unsafe conditions and report them to their supervisor, On-Site Field Supervisor, or other management personnel. If the supervisor fails to act upon a safety complaint, the employee should bring the matter to the attention of upper management or the HSE Manager. Employees reporting an unsafe condition may also use the Hazard Report Form included in RPSHSE 7.1.8A Identification and Evaluation of Hazards. Employees may make anonymous reports. No employee shall be disciplined or otherwise discriminated against for reporting or correcting an unsafe condition.

7.4 Maintenance Inspections

Maintenance employees will, as a matter of course, be vigilant to the safety considerations of any machine or equipment they are called upon to repair, whether "red-tagged" or not. Maintenance employees shall not sign off on the completion of any machine repairs unless they are certain that the repaired machine has been properly inspected and/or tested for safe and hazard-free operation.

7.5 Special Inspections

In the event of an accident, illness, or injury during work or at the **REPOWER USA's** premises, the HSE Manager, jobsite On-Site Field Supervisor, or other management representative shall make a complete investigation of the incident and inspect the area or equipment involved. A report of the investigation and inspection shall be made on the forms included in RPSHSE 7.1.2 Job Site HSE Inspection – Job HSE Analysis.

8.0 TRAINING AND INSTRUCTION

8.1 New Employee Training

New employees are trained in the Code of Safe Practices as identified within the **REPOWER USA** HSE Manual and site-specific safety procedures by the HSE Manager or their immediate On-Site Field Supervisor. Documentation of receipt of and training in the Code of Safe Practices as identified within the **REPOWER USA** HSE Manual is to be completed by each employee on the form included in the Employee Safety Orientation Handbook.

- Training and safety orientation of employees as to:
- Understanding requirements of the job.
 - Mental (knowledge)
 - Physical
- Proper clothing.
- Proper personal protective equipment.
- First Aid and doctor's treatment.
- Encourage safety suggestions from workmen. Ask them to report
- unsafe practices, conditions, or equipment.
- Injury and Illness Prevention Program.
- Safety policy rules card - signed.

8.2 Code of Safe Practices

The **REPOWER USA** has developed a Code of Safe Practices as identified within the **REPOWER USA** HSE Manual which sets forth general and specific safety rules and procedures for all employees. A copy of the Code of Safe Practices is given to each employee, and it is posted on the employee bulletin board.

8.3 Retraining

The Code of Safe Practices as identified within the **REPOWER USA** HSE Manual and the safety procedures are reviewed during periodic safety meetings for employees and On-Site Field Supervisors. Documentation of safety meeting is to be completed by the On-Site Field Supervisor or manager conducting the meeting. A safety meeting at least every five (5) working days shall be held by the department On-Site Field Supervisor or jobsite On-Site Field Supervisor, which is designed to:

- Provide an opportunity for employees to bring forward concerns and ideas about safety issues.
- Act as an occupational safety and health training program having as its objective to instill safe and healthy work practices.
- Provide specific instruction with respect to hazards specific to each employee's job assignment.
- Warn employees that they must comply with safe and healthy work practices as instructed, or face disciplinary action.
- Reassure employees that they are encouraged to inform their employer or his designees of hazards at the work site without fear of reprisal.
- Instill a constant sense of safety-consciousness among the On-Site Field Supervisor and his or her employee group.

The HSE Manager shall hold special training programs for all On-Site Field Supervisors and employees, in order to give them a framework of safety-consciousness, as well as to acquaint them with new substances, processes, procedures, or equipment that may be introduced into the workplace jobsite, especially when the employer becomes aware of or receives notification of a new or previously unrecognized hazard. On-Site Field Supervisors are to familiarize themselves with the safety and health hazards to which employees under their immediate direction and control may be exposed.

8.4 Discipline

The REPOWER USA requires that all employees and On-Site Field Supervisors strictly adhere to the safety rules set forth in the Code of Safe Practices as identified within the **REPOWER USA HSE Manual**. If anyone violates a safety rule, he or she will be disciplined in accordance with the severity of the infraction.

The discipline imposed will be in the sole discretion of the **REPOWER USA** (limited only by contractual or other legal restrictions), and may range from a warning, to a disciplinary suspension without pay, up to and including discharge. The On-Site Field Supervisor or manager imposing the discipline will be responsible for documenting it on the forms included in RPSHSE 7.1.15 Progressive Disciplinary Program Forms. A copy of the forms should be sent to the HSE Manager.

9.0 RECORD KEEPING

The HSE Manager shall maintain the following records. These records shall be available for inspection at all times.

9.1 California OSHA Reporting Guidelines

REPOWER USA will follow the five (5) important steps required by the CAL/OSHA record keeping system:

- Obtain a report on every injury or illness requiring medical treatment.
- Record each injury or illness on the CAL/OSHA Log and Summary of Occupational Injuries and Illnesses.
- Prepare a supplementary record of occupational injuries and illnesses on recordable cases on OSHA Form No. 101 or Workers' Compensation Reports (Form 5020, etc.), giving the same information.
- Every year, prepare the summary CAL/OSHA Form No. 200, post it no later than February 1st, and keep it posted where employees can see it until March 1st.
- Maintain the last five (5) years of these records.

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10. CAL/OSHA POSTINGS

10.1 Postings California OSHA

REPOWER USA's Main Office will have all the required postings posted 24 hours a day on the employee bulletin board. On all temporary jobsites, it is required that the CAL/OSHA postings are available for employee review. Posting will be located in all **REPOWER USA** Foremen's trucks. Emergency numbers are required to be posted at all times on all temporary jobsites.

	Section III Forms & Information	Valid from: November 2008
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Illness and Injury Prevention Program (CAL/OSHA)

Form 1 – Unsafe Condition or Hazard Report Form