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Section I

Introduction

Introduction

Prompt medical attention in case of injury on the job is critical to ensure the health and well being of Hilscher-Clarke employees. This safety policy and procedure provides guidelines to determine what first aid requirements are applicable for various operations at Hilscher-Clarke. It includes provisions for training, discussion on posting requirements, first aid requirements, first aid locations, and first aid supply requirements.

To achieve these requirements, Hilscher-Clarke shall, as far as is reasonably practicable, provide medical and first aid services such as:

- ***Trained & Certified First Aid Providers;***
- ***First Aid Supplies, in accordance with 29 CFR 1910.151; and***
- ***Emergency/Evacuation procedures for injured person(s).***

It is the policy of Hilscher-Clarke to provide a place of employment that is free from recognized hazards that cause or are likely to cause death or serious physical harm to employees or the public. Because hazards may exist, Hilscher-Clarke will endeavor to ensure, that as far as is reasonably practicable, First Aid Providers are available at all times to achieve and maintain the desired level of first aid coverage.

This document also details the areas of responsibility for Management, Supervisory Personnel, and Employees of Hilscher-Clarke

It is the responsibility of the President, Safety Manager, Supervisors and all employees (regardless of status) to ensure implementation of Hilscher-Clarke's safety policy and procedure on Medical Services and First Aid. It is also the responsibility of each Hilscher-Clarke employee to report immediately any injury to any person on a Hilscher-Clarke Construction/Work Site, or permanent facility, to his or her Supervisor and to become familiar with the names of the First Aid Providers and location of first aid supplies. Specific responsibilities are found in Section II (General Program Management).

This safety policy and procedure is established in accordance with Occupational Safety and Health Standards for General Industry (29 CFR 1910.151) and Occupational Safety and Health Standards for Construction Industry (29 CFR 1926.50).

Section II
General Program
Management

Program Administration

- The **President** is responsible for the control of this program and ensuring that all training meets the requirements of this program. The President will review and update the written Medical Services/First Aid Program at least annually and whenever necessary to include new or modified tasks, procedures and/or equipment.
 - Review and update of Hilscher-Clarke's Medical Services/First Aid Program to conform to current CFR standards.
 - The President may delegate the responsibility of various aspects of the Medical Services/First Aid Program to a Qualified Organization (as approved by the President). However, the President's ultimate responsibility for his/her aspects of the program cannot be delegated.
- The **Safety Manager** is responsible for:
 - Insure compliance with standards set forth in this program by periodic inspection of worksites.
 - Assisting Supervisory Personnel with:
 - Providing training as set forth in the program and policies;
 - Providing consultative and audit assistance to ensure effective implementation of this safety policy and procedure;
 - Ensuring that standard operating procedures, described in this supplement, are included in specifications and contract documentation for work to be performed by subcontractors.
 - Assuring that appropriate first aid facilities and supplies, as outlined in this plan, accompanying procedures and appendices, are readily available at each Hilscher-Clarke work site and/or permanent facility.
 - Designating which employees will receive first aid training and the level of training.
 - Obtaining and coordinating the required training for Affected Employees.
 - Training Program and Documentation of Training.
 - Making the written Medical Services/First Aid Plan available to employees, OSHA & NIOSH representatives
 - With the approval of the President, the Safety Manager may delegate the responsibility of various aspects of the Medical Services/First Aid Program to a Qualified Organization (as approved by the President). However, the Safety Manager's ultimate responsibility for his/her aspects of the program cannot be delegated.
- **Supervisory Personnel** are responsible for:
 - Assisting the Safety Manager as needed.
 - Inspecting all First Aid Kits, prior to their being released to a specified work site, to insure that adequate supplies are in place (these requirements will be evaluated by the President, re: Section 2.1 of this plan).
 - Assisting trained and certified First Aid Responders as needed.
 - Assuring that an adequate number of first aid stations for each work site/area are in place and adequately supplied (according to this policy and procedure).

Supervisory Personnel (cont.)

- With the approval of the Safety Manager, a Supervisor may delegate the responsibility of various aspects of the Medical Services/First Aid Program to a Qualified Organization (as approved by the Safety Manager). However, the Supervisor's ultimate responsibility for his/her aspects of the program cannot be delegated.
- **First Aid Trained Employees (First Aid Responders)** are responsible for:
 - Inspecting contents of First Aid kits immediately upon their arrival at the work site to insure that contents meet the minimum specifications of this policy and procedure.
 - Administering First Aid/CPR as conditions and circumstances dictate.
 - Ensuring that First Aid Supplies are replenished when used.
 - Inspection (at a minimum, weekly) of all First Aid Supplies and Kits.
 - Maintaining a clean and orderly First Aid area.
- **All employees** are responsible for:
 - Complying with all applicable guidelines contained in this safety policy and procedure. Reporting any and all injuries (no matter how minor) to his or her Supervisor and/or designated First Aid Provider
- Personnel employed by Hilscher-Clarke, and all contractors and subcontractors working at any and all construction/work sites operated by Hilscher-Clarke, are required to comply with the procedures and work practices outlined in this Medical Services/First Aid Plan. The President is responsible for ensuring that said individuals/organizations, operating under the supervision of the Safety Manager and/or Supervisors, are informed of and adhere to Hilscher-Clarke's Medical Services/First Aid Plan.
- **NOTE: Employees who have not been trained will not attempt to administer First Aid treatment to any injured individual, but will immediately seek out a qualified First Aid Provider and/or contact emergency services as outlined in this plan.**

Section III

Training

Requirements

Training

- ❑ It is the responsibility of the Safety Manager to ensure that the designated First Aid Responder(s) have received the training necessary to safely perform his or her duties on their Work Site. This training will be given via classroom and/or on-the-job instruction and is to be documented.
- ❑ The Affected Employee(s), designated to be trained, in First Aid/CPR will be trained upon their initial designation. Individuals certified in the American Red Cross First Aid and/or an equivalent First Aid training program must provide this training. Red Cross approved, or equivalent, refresher training must be done every three years in order for the First Aid Provider to retain their First Aid/CPR certification.
- ❑ For units and work crews in near proximity to medical providers, two individuals per work site/or work crew shall be trained in First Aid/CPR. For work crews and work sites that are not in close proximity to medical care and/or are outside metropolitan areas, a *minimum* of two individuals per work crew or work site shall be trained in First Aid/CPR.
NOTE: First Aid course instructors are required to receive training to qualify and authorize them to teach the First Aid/CPR course. First Aid/CPR instructors must teach one standard First Aid/CPR course every three years to retain their teaching qualification.
- ❑ **Outside Personnel (sub-contractors, vendors, etc.)** – Will be trained as a Hilscher-Clarke Affected Employee(s) or First Aid/CPR providers, as deemed appropriate to the individual situation(s). A Hilscher-Clarke First Aid/CPR Provider (as outlined in this plan) may be assigned to oversee all activities of Outside Personnel to ensure compliance with the scope and applicability of this plan.
- ❑ Hilscher-Clarke, reserves the right to render final judgment on any and all outside personnel as to their status, and as a result any additional required training and/or retraining, before assigning status on an individual as a “First Aid/CPR Provider” with respect to the scope and requirements of this plan. An individual will not be allowed to commence with any activity, on the work site, until his or her status has been established to the satisfaction of the Safety Manager and/or Supervisor.

Section IV
Medical Services
First Aid

1.0 Posting Requirements

1.1 The Supervisor and/or First Aid Provider(s) will post information throughout the jobsite advising employees where the first aid station(s) is located. In addition, the Supervisor and/or designated First Aid Provider(s) will assure that all emergency phone numbers and names of treatment providers will be posted at each telephone and/or throughout the job site for quick reference. The local emergency numbers for :

- Police;
- Fire Department;
- Ambulance Service;

These numbers shall always be listed, even in areas with a 911 emergency system.

Emergency Instructions		
The following people are responsible in the event of an emergency situation:		
Specific Area of Responsibility	Name	Extension
Emergency Phone Numbers		
Fire Department: (Insert Specific Agency Name)	(number)	
Police Department: (Insert Specific Agency Name)	(number)	
Ambulance Service: (Insert Specific Agency Name)	(number)	
Universal Emergency: (Insert Specific Agency Name)	(number)	
First Aid Responders & First Aid Stations		
Primary 1st Aid Station is located at:		Secondary 1st Aid Station is located at:
1st Aid Provider & Hours Available:	1st Aid Provider & Hours Available:	1st Aid Provider & Hours Available:
1st Aid Provider & Hours Available:	1st Aid Provider & Hours Available:	1st Aid Provider & Hours Available:
When an emergency evacuation is announced and if time permits:		
<ol style="list-style-type: none"> 1. Shut off all power to machinery, fans, and equipment. 2. Turn off all natural gas operations (heaters only). 3. Close all windows (if applicable) and clear all blocked aisles. 4. Walk rapidly, DO NOT RUN, to the nearest "EXIT". 5. Wait in designated meeting areas for further instructions. 		
Each Hilscher-Clarke Construction/Work Site will have trained and authorized Fire Personnel assigned to fight incipient or small fires with a fire extinguisher. Do not attempt to fight an incipient or small fire, with a fire extinguisher unless you have been trained and authorized.		
Designated Meeting Area (Except During Tornadoes):		

2.0 Requirements For First Aid Facilities And/Or Supplies

2.1 Prior to the commencement of any work activity on any Hilscher-Clarke work site, the Safety Manager, along with the site Supervisory Personnel will assess the First Aid requirements using the following:

- How many persons will be employed at the work site?
- Is the work site isolated?
- What specific hazards are at this particular work site?
- Where is the nearest available and appropriate occupational health, medical or ambulance service? What distance is involved?
- What types of injury, disease or illness might occur at the work site?
- How many first aid supply boxes are needed?
- Who will have responsibility for the contents of first aid boxes and weekly (minimum) inspections?
- What supplies are needed in the first aid boxes?
- Are supplies specific for identified hazards (of the work site) included?
- How many First Aiders are needed?
- What level First Aider is needed (see Section 5.0 of this plan)?
 - Level 1
 - Level 2
 - Level 3
- Is a first aid room needed?
- Who will be responsible for the first aid room?
- Has contact or consultation taken place with:
 - Supervisor for the work site?
 - First Aid Providers for the work site?

3.0 First Aid Access For Work Site Personnel

- 3.1** All work site employees will have access to first aid supplies. This will be achieved by ensuring each work site/operation is equipped with a minimum of one first aid kit that meets (at a minimum) *ANSI Standard Z308.1 1998* or *Appendix A of CFR 1910.151 (Aug. 98)* requirements.
- 3.2** In addition to first aid supplies, Hilscher-Clarke will ensure that an adequate number of field employees are trained in First Aid/CPR. This number will be determined by size of work site crew, scheduled employee vacations, FmLA leave, etc...
- 3.3** As far as is practicable, first aid boxes shall be provided and located to ensure:
- That they are readily accessible to all employees;
 - That the name(s) and contact number(s) of First Aid Providers are provided on or near the box;
 - Additional information, such as name, address and phone number of the nearest medical or emergency services, are supplied on or near the box. (This information will be provided and maintained by the Supervisor and/or the designated First Aid Providers).
- 3.4** In addition, first aid boxes will be:
- Unlocked, but securely closed;
 - Dust and moisture proof;
 - Under the control of a trained First Aid/CPR Provider.
- 3.5** **If working on an existing structure where 150 or more employees are present and under the direct supervision of Hilscher-Clarke,** Hilscher-Clarke will establish and provide a First Aid Room. This room will consist of (at a minimum) the following:
- A folded stretcher and blanket;
 - A telephone and posted instructions for calling a physician and notifying the hospital the patient is in route;
 - Posted method of transporting ill or injured employees and instructions for calling an ambulance;
 - A log of all first aid cases and the treatment, medication, or procedure for each employee treated;
 - A covered trash receptacle operated by a foot pedal;
 - Dispensers for soap, towels, cleaning towels, and disposable cups;
 - A bed;
 - A supply of clean blankets;
 - A supply of clean sheets and pillow cases;
 - Emergency oxygen equipment;
 - First aid manual;
 - Lavatory with hot and cold water.
- Additionally, there will be a wall-mounted first kit on all floors with the exception of the floor on which there is a first aid room.
- 3.6** **In existing buildings with less than 150 employees present,** the following is required to ensure that employees have access to medical supplies and services.
- Emergency telephone numbers posted by each telephone;
 - Signs directing employees to the location of the first aid kit(s);
 - A First Aid Kit that meets sections 3.1 and Section 4.0 of this plan;
 - First Aid/CPR Manual.

4.0 First Aid Kits

- 4.1 First aid kits utilized at Hilscher-Clarke work site(s), should contain *(italicized & bolded items are a mandatory requirement in all kits)*:

Quantity	Description
1	<i>First Aid/CPR Handbook</i>
2	<i>Eye Wash 4 oz.. with 4 Eye Pads</i>
1	Instant Ice Pack
1 box 10	3:1 Antibiotic Ointment
2 boxes	Compress
10	2" x 3" Non-Stick Gauze Pads
10	<i>4" x 4" Non-Stick Gauze Pads</i>
5	<i>8" x 10" Non-Stick Gauze Pads</i>
1	<i>2" Rolled Gauze</i>
2	<i>Triangular Bandage</i>
2	<i>Roll of ½ inch x 2.5 yards Adhesive Tape</i>
1 box 50	<i>Elastic Strip Bandages (i.e., band-aids)</i>
1 box 6	Splinter Probes Disposable
2	<i>Elastic Wraps</i>
1	<i>Sams Splint</i>
1 box 10	<i>Antiseptic Swabs</i>
1 box 10	<i>Alcohol Swabs</i>
1	<i>Scissors Surgical blunt/sharp (1 pair)</i>
1	<i>Tweezers Kit</i>
1	<i>Rescue Blanket, silver/silver (space type)</i>
2 boxes	<i>Disposable Gloves (2 per Box)</i>
1	<i>CPR Micro Shield Rescue Breather</i>

- 4.1.1 **Eye:** Where any of the following points applies to a Hilscher-Clarke worksite, an eye module must be added – in a clearly labeled container - to the Basic 1st Aid Kit:
- Chemical liquids or powders are handled in open containers.
 - Spraying, hosing, compressed air or abrasive blasting operations.
 - There is ***any*** possibility of flying particles.
 - Welding, cutting or machining operations are conducted.

The Eye Module must contain, at a minimum:

Quantity	Description
1 Roll	Crepe Bandage 7.5 cm
10	Eye-Wash Containers Single Use
4	Sterile Eye Pads
1	Eye Treatment Guidance Notes

4.0 First Aid Kits (cont.)

4.1.2 Burn: Where any of the following points applies to a Hilscher-Clarke Worksite, a burn module must be added – in a clearly labeled container - to the Basic 1st Aid Kit:

- Heat or flame is used in the work activity.
- Flammable liquids or gases are used.
- Chemical acids or alkalis are used.
- Other corrosive chemicals are used.

The Burn Module must contain, at a minimum:

Quantity	Description
4	Burn Dressings Sterile Non-Adherent Absorbent 7.5 cm x 5 cm
2	Burn Dressings Sterile Non-Adherent Absorbent 7.5 cm x 10 cm
1 Box 10	Burn Gel (Individually Packaged)
1	Burn Treatment Guidance Notes

4.2 *It is the responsibility of the First Aid Provider to monitor, and inspect (at a minimum weekly), the contents of the First Aid Box, and individual modules. Likewise it is the First Aid Responder who is responsible for ensuring that all supplies have not exceeded their expiration date.*

5.0 Levels of Training in First Aid/CPR

- 5.1** The level of training required for First Aid Providers, at the workplace, will be determined when first aid facilities and services are being planned (see Section 2.0). The hazard identification and risk assessment process will determine the level of training required.
- 5.2** In deciding training levels and the number of First Aid Providers required, employees located in isolated areas or mobile workplaces should be taken into account. Arrangements must also be made to cover absences of First Aid Providers from the work site.
- 5.3** Where a particular hazard or risk has been identified a First Aid Provider must be trained to deal with the type of injury or illness that may result. The various levels of training for First Aid Providers are:

<p style="text-align: center;">Level 1 <i>Basic Workplace First Aid</i></p>	<p>At this level the First Aid Provider should be able to:</p> <ul style="list-style-type: none"> ▪ Perform basic emergency first aid procedures.
<p style="text-align: center;">Level 2 <i>Workplace First Aid</i></p>	<p>At this level the First Aid Provider should be able to:</p> <ul style="list-style-type: none"> ▪ Perform emergency first aid procedures; and ▪ Undertake the first aid treatment of injuries and illnesses (i.e. heart attack, fainting).
<p style="text-align: center;">Level 3 <i>Occupational First Aid</i></p>	<p>At this level the First Aid Provider should be able to:</p> <ul style="list-style-type: none"> ▪ Meet the requirements of a Level 2 First Aid Provider; ▪ More effectively deal with first aid problems in the workplace, particularly in an isolated area; ▪ Demonstrate a broad knowledge of the hazards of the working environment, first aid room requirements, techniques of emergency care, and on-site assessment of injured person(s) condition.

6.0 Eye Washes & Emergency Showers

Protecting the skin and eyes from exposures to hazardous materials requires good planning, proper personal protection equipment (PPE), and effective supervision and training. However, since accidents can still occur, safety showers and eye-wash stations shall be installed in flammable-liquid dispensing areas, battery-charging rooms, and all indoor and outdoor areas where significant amounts of corrosive, flammable, or other hazardous materials are regularly used.

6.1 Safety showers and eye washes are required, but are not limited to:

6.1.1 Areas where the following chemicals are used:

- Inorganic and organic acids;
- Solutions of inorganic or organic acids or bases with a pH of less than 2.0 or more than 12.
- Other organic or inorganic materials that are corrosive or irritating to eyes or skin.
- Organic or inorganic materials that are significantly toxic by skin absorption.

6.1.2 Areas where the chemicals above are used in a closed system that can catastrophically fail and cause the chemicals to leak (i.e., lead-acid battery charging areas, or areas where pressurized systems with caustic or other strong irritant liquids are used.

6.1.3 Storage areas where breakable containers (1 gal. or more) are handled outside their original shipping cartons.

6.1.4 All chemical storage and handling areas, including waste accumulation areas that contain types of materials listed above.

6.1.5 Areas where dip tank operations are performed and the possibility of a splash exists.

6.1.6 Areas where operations involve the use of air or water reactive liquids or solids.

6.2 When the chemicals listed above are used in small quantities (less than 500 ml) and the likelihood of exposure is limited, only an eyewash may be required. When the quantities are larger and significant splashing or spraying may occur, a safety shower shall also be required.

6.3 Generally, eye washes are not required in areas where:

6.3.1 The chemicals previously listed are stored in quantities of less than 8 ounces, and used at room temperature at a rate of less than 2 ounces per day.

(NOTE: perchloric acid, hydrofluoric acid, and the alkali metals are exempt from this requirement).

6.3.2 Compounds hazardous to eye or skin are used in sealed systems at or below atmospheric pressure and catastrophic failure or leakage is unlikely. However, an eyewash, or shower, may be appropriate if the system is filled, topped-off, or drained in other than a totally enclosed manner.

6.3.3 Materials hazardous to the eye or skin are stored in bulk in metal or plastic containers and not decanted.

6.3.4 The President should be consulted for specific determinations or exceptions.

6.4 Equipment – Existing Structures. Eye washes and safety showers installed in 1990, or later, must comply with the installation requirements in ANSI Z358.1-1990. Those installed earlier than 1990 that do not meet the requirements of ANSI standard requirements should be modified (or replaced) if there is the potential for significant hazards to the eye or skin during use.

6.0 Eye Washes & Emergency Showers (cont.)

- 6.5 Preferred Equipment** – A combination deluge shower and foot-operated eyewash fountain that fully drenches a contaminated person, but allows free use of the hands to assist opening the eyes while washing them.
- 6.6 Location** – Safety showers and eye washes shall be located as close as possible to the working area, but far enough away from the work area so that if a major spill or fire occurs the contaminated person can leave the immediate danger area and use the equipment safely. The maximum distance is 100 ft. (or 10 seconds of travel time), but smaller distances may be warranted depending on the nature of the hazard (i.e., large amounts of corrosives in open containers). Before installing a shower, consider the path to the shower with respect to contact with other hazards (i.e., stairs, hot surfaces, closed doors w/latches). In addition, make sure that safety showers and eyewashes are not located near electrical contacts, this can be a hazard when the shower is in use.
- 6.7 Installation** – Plumbing of safety showers and eyewash fountains shall be connected to potable water systems. The minimum pressure required is 30 psi. The pipe size shall be large enough to supply water, as specified in the manufacturer’s installation instructions. Floor drains should be installed near the shower if flooding will create a serious hazard. The location for all plumbed eyewash or safety shower must be well lighted and identified with a highly visible sign.
- 6.8 Non-Plumbed or Portable** eye washes and safety showers shall not be used unless a plumbed unit is infeasible. If these units must be used, they shall meet the performance and access requirements in ANSI Z 358.1-1990 (or latest version). Hand-held eyewash bottles *do not* take the place of a portable eyewash.
- 6.9 Testing, Maintenance, and Training** – Supervisor and/or First Aid Trained Employees are responsible for:
- 6.9.1** Ensuring all safety showers are inspected quarterly and that eyewashes are inspected weekly. Inspections shall include:
 - Visual Check;
 - Activation of the devices and flushing of the water lines (1-minute minimum, 3 minutes recommended). Note: Piping configuration for each system should be taken into consideration when flushing the water lines to ensure that stagnant water is thoroughly flushed out.
 - 6.9.2** Documenting the test results of all inspections.
 - 6.9.3** Maintaining all safety showers and eyewashes, including portable eyewashes, in the area. The water in nonplumbed eyewashes should be replaced quarterly with clean, potable water (preferably 140 degrees or hotter to kill any Acanthamoeba) and a commercial biocide added in accordance with the manufacturers instructions.
 - 6.9.4** Training employees in the use of all equipment.
- 6.10 Out Of Service Equipment** – Facilities, work areas, or units that are no longer in use, or tested, shall be posted with an “Out of Service/Untested” sign. These areas and units will be evaluated before they can be activated for operations requiring the use of hazardous chemicals and emergency deluge. Thereafter, the normal testing program shall resume.

Appendix

If an injury occurs, the First Aid Provider should:

- 1 Evaluate the accident area to ensure he/she does not become involved in the same accident situation. The injured person should not be moved unless a life threatening condition exists (i.e., a person's car catches on fire after a wreck and they could be burned up.)
- 2 Remain calm and take charge of the situation until professional medical help arrives.
- 3 Direct others briefly and clearly as to how they can help or secure help.
- 4 Conduct a primary survey of the victim to detect life threatening conditions that require immediate attention. These include:

Respiratory Arrest

- Ensure Adequate breathing by establishing and maintaining an open airway.
- If there are no signs of breathing, give artificial breathing (mouth-to-mouth using by-pass resuscitator is preferred method).
- If victim experiences circulatory failure, start CPR if trained to perform it.

Severe Bleeding

- Determine if from capillaries, veins or arteries.
- If artery or vein is involved, use the following methods in this order:
 - 1 Apply direct pressure using a sterile bandage or the cleanest material available.
 - 2 Elevate the bleeding part of the body above the head if no fractures are involved and injury will not be aggravated.
 - 3 Apply pressure at closest available pressure point.

Shock

Be prepared to treat for shock even when there is little or no injury. First aid procedures are:

- 1 Keep victim lying down.
- 2 Provide as much fresh air as possible.



- 3 Loosen tight clothing at the neck, waist and chest.
 - 4 Keep the victim warm and dry by wrapping in blankets or similar materials.
 - 5 Do not give victim anything by mouth.
 - 6 Help victim maintain a good positive attitude by remaining calm, using reassuring tones and keeping onlookers away.
- Determine if transportation is necessary. Transportation of the injured person will depend on the judgment call of the First Aid Provider. In many cases, particularly with

fractures, back and similar injuries, it is wiser to call the rescue squad or EMS for professional help. They have backboards, inflatable splints and other equipment that can be used to move the victim without causing additional injuries.

Only after the life threatening injuries have been addressed and medical help has been requested, should the First Aid Provider proceed to the following steps. Most of the additional steps may not be necessary if medical help can get to the site.

- 1 Dress any open wounds with bandage compresses, cravat bandages or any other clean materials that are available. It is only necessary for this material to last until the victim can be moved to professional medical help.
- 2 Splint any fractures with the best available material. Shovel handles, sticks, rolled up newspaper, etc., can be used as improvised splints.

"When all else fails, the First Aid Provider should use his or her best judgment and do whatever is necessary to save the life."

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What to do About Electrical Shocks and

An electrical shock can severely burn soft tissue, stun muscles and nerves and stop the life supporting systems of the human body such as the heart and pulmonary functions. Quick, decisive action to electrical emergencies saves lives. But a haphazard response will do more harm than good. Take a few moments to review and become familiar with the following procedures. By following the response procedures we have outlined below, hopefully it will make it easier for you to think clearly and act quickly if an electrical shock or burn occurs to a fellow worker.



Responding To Electrical Shock

- ▶ To protect yourself from shock, turn off the power before touching the victim or equipment.
- ▶ If you can't turn off the power, use a non-conducting tool, such as a dry wooden stick, to move the person; then call for help.
- ▶ Make sure you don't complete a circuit between the source and the ground.
- ▶ If the victim is touching a power line, stay clear and call for help.
- ▶ Before giving any treatment, check the victim's breathing and pulse.
- ▶ If breathing has stopped, give artificial respiration.
- ▶ If you don't detect a heartbeat, start CPR, if you've been trained to do so.
- ▶ Continue CPR until medical help arrives or until the victim begins to breathe on his or her own.

Responding To Burns

- ▶ Burns suffered in electrical accidents may affect the skin, muscles, organs and bones.
- ▶ The first hour is crucial for treating burns.
- ▶ Look for two wounds: an entrance and exit burn.
- ▶ Treat minor burns to the skin with cool water, then cover it with a clean dry cloth.
- ▶ Never use ointment or ice on a burn.
- ▶ Serious burns require immediate medical attention.
- ▶ If the victim goes into shock, keep him or her lying down with feet elevated until help arrives.
- ▶ Never try to pull charred clothing off of burned skin.

Think Before You Act!

No matter what type of electrical emergency confronts you, always stop to notice what's going on and think about a safe plan of action. Although your instinct may be to rush in and grab the person who's being shocked, that type of action could cost you your life.

How Shock Happens

Electricity follows the easiest path to the ground. It will flow through any conductive material, such as water, metal, certain chemical solutions and the human body. If you come into contact with electricity while you're in contact with the ground, you become part of an electrical circuit and current passes through your body, causing a shock. Even a small shock can kill you if it passes through your heart and lungs. Deep internal burns can also occur.

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Responding To Chemical Burns

What Are Chemical Burns?

Chemical burns are different than heat burns in two ways:

- They usually produce no heat, though the victim may feel a burning sensation; and
- They go on burning until every bit of the chemical is removed.

This is because the chemical reacts with body tissue to cause the burn. The longer the chemical remains on the body, the deeper and more serious the burn.

First Aid

- Know the quickest route to the emergency shower and eyewash station. You should be able to get there in 15 seconds or less.
- Get under the running water as fast as possible and stay there for at least 15 minutes.
- Remove contaminated clothing after you're in the shower.
- Use tap water or a garden hose only if a shower is not available.
- Cover the burn with dry, sterile dressings.
- Get medical attention immediately.
- Avoid using neutralizing solutions or ointments on the burn.
- Watch for shock symptoms: clammy, pale skin; rapid pulse; irregular breathing; nausea; confusion; and enlarged pupils.
- Treat shock by keeping the victim warm and lying down with feet and the burned areas raised. Turn the victim's head to one side if he or she is vomiting and give cool water if medical help is more than an hour away.

Eyes

- ♦ Go to the eyewash station and turn your head sideways, with the affected eye below; so that chemicals won't wash into your other eye.
- ♦ Remove contact lenses and let water flow for 15 minutes or more.
- ♦ If you must use water from other sources, avoid spraying the water directly on your eye; the pressure can cause damage.
- ♦ A helper should pour water over the bridge of your nose, letting it flow over your eye.

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Know Your Chemicals

The following chemical groups can cause chemical burns:

- **Reducing Agents** such as sodium, potassium and lithium used in metal cleansers and soldering processes.
- **Strong Acids** such as sulfuric, muriatic, tannic and hydrofluoric.
- **Bleaching Agents**
- **Strong Bases** such as lye.

Prevention

- ☑ Follow safety procedures to prevent chemical burns.
- ☑ Read the label before using any chemical and know the hazards involved.
- ☑ Follow instructions for the chemical's use, storage and disposal.
- ☑ Always wear the appropriate protective equipment.
- ☑ Know how to react quickly to a chemical emergency.

DRINKING A CUP OF WATER EVERY 15 TO 20 MINUTES IS ONE OF THE BEST DEFENSES AGAINST HEAT-RELATED INJURIES.

BEATING THE HEAT!

How To Protect Your Workers

Forms of Heat Stress

- **Heat Cramps**
Mild

Result from dehydration and a slight imbalance in electrolytes. Victims respond well to rest and rehydration with fluids.

- **Heat Exhaustion**
More Severe

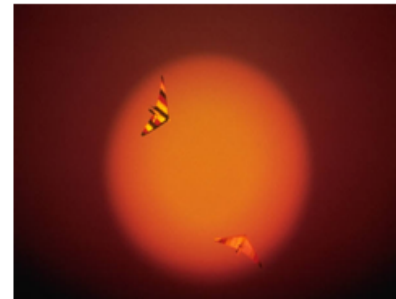
Involves removing the person from the hot environment to a cool, shaded location and rehydrating with cool fluids. Treatment may require intravenous fluids to replace lost fluids if drinking water does not relieve the condition.

- **Heat Stroke**
Most Severe

A medical emergency that requires extensive intervention and support. Occurs most often when workers perform strenuous work in hot, humid weather for an extended period.

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- Encourage workers to drink plenty of water - about a cup of cool water every 15 to 20 minutes, even if they are not thirsty - and to avoid alcohol, coffee, tea, and caffeinated soft drinks that dehydrate the body.
- Help workers adjust to the heat by assigning a lighter workload and longer rest periods for the first 5 to 7 days of intense heat. This process needs to start all over again when a worker returns from vacation or absence from the job.
- Encourage workers to wear lightweight, light-colored loose-fitting clothing. Workers should change their clothes if they get completely saturated.
- Use general ventilation and spot cooling at points of high heat production. Good airflow increases evaporation and cooling of the skin.
- Train first-aid workers to recognize and treat the signs of heat stress and be sure all workers know who has been trained to provide aid. Also train supervisors to detect early signs of heat-related illness and permit workers to interrupt their work if they become extremely uncomfortable.
- Consider a worker's physical condition when determining fitness to work in hot environments. Obesity, lack of conditioning, pregnancy, and inadequate rest can increase susceptibility to heat stress.



Wind Chill

Frostbite occurs in 15 minutes or less

		Temperature (° F)											
		30	25	20	15	10	5	0	-5	-10	-15	-20	-25
Wind (mph)	5	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40
	10	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47
	15	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51
	20	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55
	25	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58
	30	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60
	35	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62
	40	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64
	45	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65
	50	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67
	55	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68
	60	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69

Wind Chill is the term used to describe the rate of heat loss on the human body, resulting from the combined effect of low temperature and wind.

As winds increase, heat is carried away from the body at a faster rate, driving down both the skin temperature and eventually the internal body temperature.

Wind cools because of the evaporative cooling effect of water. For people and animals, the cooling effect of wind depends entirely on the amount of exposure. People of different shapes, and animals are affected differently. Well-protected persons do not experience any factor, no matter what wind speed.

While exposure to chills can be life threatening to both humans and animals alike, the only effect that wind chill has on inanimate objects, such as vehicles, is that it shortens the time that it takes the object to cool to the actual air temperature (it cannot cool the object down below that temperature.)

The Wind Chill Index takes into account the wind speed in miles per hour and the temperature in degrees Fahrenheit. To determine the wind chill, find the outside air temperature on the top line, then read down the column to the measured wind speed. This "equivalent wind chill temperature" indicates what the actual air temperature would be had the winds been calm.

- Since wind chill is a measure based upon the effect of wind and cold on living things, these numbers do not apply to objects.

When the wind-chill temperature drops to -25 to -39 or colder the National Weather Service issues a "Wind Chill Advisory" to alert the public to the danger of spending prolonged periods of time outside. A "Wind Chill Warning" is posted when the Wind Chill Index drops to -40 or below.

Hypothermia

If your body becomes so cold that it can not produce enough heat to keep it warm you are in danger of becoming hypothermic. Hypothermia usually happens slowly and the signs can go unrecognized until it is life threatening. There are four major factors that cause hypothermia: Cold, wind, water, and fatigue. Cold is the most common factor of hypothermia. Cold air cools down the body and along with other factors such as wind chill and dampness it can be a serious problem. The addition of wind contributes to rapid heat loss. The stronger the wind, the faster ones body cools. Water immersion also speeds up body cooling. Water conducts heat away from the body 25 times faster than cold air so that severe hypothermia can develop even faster when one is wet or even damp from perspiration. Finally, fatigue also contributes to the advent of hypothermia.

The basic principle to treating hypothermic victims is to stop heat loss, and slowly help the individual regain a normal, non-hypothermic, core body temperature. In all cases of hypothermia it is important to handle the victim VERY gently as it is possible to cause heartbeat irregularities and even death when moving the victim. In cases of mild hypothermia it is usually enough to remove all wet clothing and get the victim into warm, dry clothing, or a dry, warm body wrap. Do NOT attempt to suppress shivering as this is one of the ways the body generates heat. Do NOT massage any of the extremities, you want to warm the body from the core outwards, and not from the extremities inwards. Medical treatment should be sought for all, but the most mild cases of hypothermia - if in doubt, contact your local emergency room.

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