**Safety Manual**

***(Enter Company Name Here)***

**REVISED 1- 12**

**(*Enter Company Name Here*)**

**Safety Team**

\* Next revision May 2013.

Please note the insert pages will have the May 2012 date posted at the bottom of each page.

***(Enter Company Name Here)***

**Safety Manual**

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*We the Management and Employees of (Enter Company Name Here) believe that while risks exist:*

*…*Accidents and injuries are preventable.

…Each of us has a personal responsibility for our

safety and the safety of others both on and off the

job.

…No business objective is so important it will be

pursued at the sacrifice of safety.

…Safe conduct of operations is a condition of

employment at *(Enter Company Name Here)*

…A job is well done only if it is done safely.

…*(Enter Company Name Here)* should have the best safety performance in the industry in which we do business.

Section 1

**How to Use this Manual**

**Background** With few exceptions, every safety rule or practice in the *(Enter Company Name Here)* Safety Manual is the result of many years of experience and knowledge by *(Enter Company Name Here)* employees. The Safety Manual is a record of learning about how best to prevent accidents and injuries. Not every hazard that occurs in daily activity is included, but areas of greatest exposure are addressed.

**Purpose** The Safety Manual was developed to:

• assist individuals and teams in carrying out their daily activities in a safe manner

• help personnel identify potential safety hazards and the actions necessary to avoid those   
 hazards

• serve as a resource for other documents that provide procedures, training materials, and   
 job safety analysis, and

• document minimum requirements for safe behavior.

**Organization of** The information in the Safety Manual has been organized for ease of use. It has **the manual** been separated into

• primary groups and sections separated by labeled tabs

• topics listed within section contents, and

• detailed blocks of information.

Block headings that indicate the content of the text appear along the left margin of each page. To find specific information, first locate the pertinent section and topic, and then scan the block headings along the left margin of the page(s).

The Table of Contents lists the section titles and the Index provides an alphabetical listing of key words.

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**How to Use this Manual,** Continued

**Using the rules** Every *(Enter Company Name Here)* employee has a responsibility to be familiar with the Safety Manual content, safety plans and procedures, and to apply it to daily activities.

Rules have been organized within sections; however some rules may apply to more than one section and too many job functions. For example, the rules on Fire Safety also apply at construction sites; drilling sites, work over sites, etc. These rules must be used wherever they apply. In order to assist in finding related rules and safety information, cross-references are provided in the appropriate sections throughout the Safety Manual.

Rules must not be taken out of context. If it is questionable whether a rule applies to a specific activity, consult with your immediate supervisor.

**Rule Changes** The Safety Manual is a dynamic document that must be kept up-to-date with both technology **and Exceptions** and regulations. It is everyone's responsibility to ensure that this document reflects the

current needs of all associates in the *(Enter Company Name Here)* work environment.

The rule change process is described in the Manual Revision Process section. The process includes steps for submitting a request for an addition, deletion, or modification to Safety Manual rules plans and procedures, and a series of review and approval activities that follow each formal change request.

The Safety Manual is not a regulatory compliance document but much effort has gone into ensuring that rules are not inconsistent with regulations. Any inconsistencies between the Safety Manual and other Company documents or regulations issued by federal regulating bodies, such as Cal OSHA and DOT, should be brought to the attention of your immediate supervisor and a rule change request should be made.

The process for obtaining an exception is also described in the Manual Revision Process section. On rare occasions it may be necessary to obtain an exception to a Safety Manual rule. An approved rule exception is *mandatory* prior to beginning any operation, procedure, or activity that conflicts with a "must" or "should" Safety Manual rule. Exceptions may only be granted for deviations that are either temporary in nature or of a limited scope. Exceptions will not be granted for any other rule.

*Reference:* For more information on the rule change and exception process, refer to Manual Revision Process section.

**References** References to other documents that provide additional or more specific information on  
various topics are included throughout the Safety Manual.

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Section 2

**General Safety**

**Overview**

**Section contents** This section contains the following topics.

|  |  |
| --- | --- |
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| Reporting Hazards, Incidents and Near Misses | 2-3 |
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**Basic Requirenents**

**Intervention** Anyone in the workplace who observes an action or condition that is unsafe has an obligation to intervene. This may include

• communicating concerns and asking questions

• correcting the condition or situation

• notifying appropriate supervisors, or

• shutting the job down, if necessary.

**General conduct Never** engages in scuffling, practical joking, or horseplay on the job.

**Never** run on the job unless the situation is life-threatening.

**Never** run on stairways and elevators.

*Continued on next page*

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**Basic Requirements,** Continued

**Safety** To enhance your level of safety awareness and reduce the likelihood of an accident, **preparedness** it is important to have

• adequate rest

• exercise, and

• proper diet.

**Concentrating on** Preoccupation with matters other than the work at hand can cause accidents.

**work at hand** When performing a job, concentrate on the immediate assignment; do not allow yourself to be distracted.

**Communication** Good communication is essential for safe operations. Each individual has the responsibility to ensure that all safety instructions, directions, and other communications are clearly understood.

**Housekeeping** Good housekeeping practices are conducive to a safe working environment.

Equipment, materials, and work areas **should** be maintained in such a fashion as to minimize hazards.

**Lighting** Lighting levels **should** be adequate to perform work safely.

Burned out light bulbs **should** be replaced as necessary to maintain proper lighting levels.

Light bulbs and diffusers **should** be kept clean.

**Safety devices Promptly** report all safety device malfunctions to your supervisor and flag the device immediately to warn relief and other personnel of the hazard.

Before placing equipment back into service, all associated safety devices **should** be checked to ensure they are operational.

**Makeshifts Makeshifts** **should** only be used in rare instances when it is necessary to continue operations. Additional safety measures may be required to ensure that safety is not  
compromised.

The use of makeshifts **should** be communicated to appropriate supervisors prior to use whenever possible, and marked or otherwise identified for other personnel who may be impacted.

The makeshift **should** be replaced or corrected with the appropriate equipment or procedure as soon as possible.

*Continued on next page*

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**Basic Requirements,** Continued

**Working alone** When working alone, you **should**

• notify another person of your work location, and

• try to anticipate any hazards you might encounter.

Do **not** attempt to do a job alone which requires more than one person to do safely.

**Ergonomics** In order to allow personnel to interact with the work environment effectively and safely, ergonomics and human factors **should** be considered when

• designing and installing equipment, or

• developing work practices and procedures utilized in the work environment.  
Considerations include, but are not limited to the following:

• workstation design

• minimizing impact of repetitive motion

• body positioning

• valve/equipment location and orientation, and

• control panel design.

*Reference:* For more information on computer workstation design and safety, refer to the topic "Computer Workstations" in the Office Safety section.

**Reporting Hazards, Incidents and Near Misses**

**Being Alert to** Personnel **should** be alert to hazardous conditions and actions by other people

**hazards** which might cause accidents, and **should** correct or eliminate the hazardous condition themselves whenever possible.

**Communicating** Personnel coming on duty **must** be informed of any changes or conditions that **hazards** might present a hazard.

**Addressing** Hazards and hazardous conditions **should** be addressed as soon as practical. If a

**hazards** hazard cannot be corrected immediately; it **must** be appropriately marked until it can be corrected.

*Continued on next page*

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**Reporting Hazards, Incidents and Near Misses,** Continued

**Hazard reporting** Each work groupshould use a system for hazards which includes:   
**Systems**   
 - reporting   
 - communicating  
 - assigning responsibilities  
 - documenting, and  
 - following up.  
 Hazard documentation **should**  
 - describe the hazard  
 - give the location of the hazard, and  
 - describe the hazard resolution, or possible remedial action that may be taken.

**Incident** The following must be promptly reported to your immediate supervisor.

**reporting**

- all work-related injuries or illnesses

- all vehicle accidents in

-company owned, leased, or rented vehicles, or

-personal vehicles when being used on Company business

-any injury sustained off the job that could result in lost time.

All near misses (safety incidents which did not result in personal injury or property damage) should be reported to the immediate supervisor a soon as practical.

*Reference*: For more information on reporting accidents and injuries, refer to the Incident Reporting section.

**Emergency Plans**

# Emergency Currently emergency phone numbers for police, fire, and medical aid preparation should be kept near a centrally located telephone unless 911 emergency guidelines service is available to the site.

***Continued on next page***

# 

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**Emergency Plans,** Continued

**Emergency** Personnel **should** become familiar with the emergency procedures that pertain to **preparation** their specific work location. Visitors **should** be oriented appropriately.

**Guidelines**

(continue) Personnel **should** become familiar with the location of first aid kits and **should** know those who have been trained to provide first aid and cardiopulmonary resuscitation (CPR).

When conducting a meeting, the person in charge of the meeting **must** explain the evacuation plan and point out the emergency exits before the meeting begins if any of the participants are unfamiliar with the location.

When on a business trip, you **should** become familiar with emergency procedures and escape routes at the work location and at the hotel or motel.

Exits **must** be clearly marked and the signs properly maintained. Designated emergency exits **must** be functional at all times.

*Reference:* For more information, refer to the Emergency Preparedness and Survival section.

**Drugs, Firearms, and Weapons**

**Prohibited** The unauthorized use, possession, distribution, or sale of the following is

**Activities**  **prohibited** on Company property:

• alcoholic beverages • firearms

• illegal drugs • explosives

• drug related paraphernalia • weapons, and

• narcotics • other hazardous items

**Medical** You **must** inform your supervisor of any medication you are taking that could affect **Information** your ability to perform your work.

You **should** inform your supervisor of medical information that may be useful during a medical emergency, such as allergies to medication, contact lens use, etc.

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**Lifting and Carrying Objects**

**Lifting** Lifting and/or carrying objects manually are a major cause of strains and sprains. **Guidelines** Care **must** be taken to prevent injury when performing these activities.

Consider these guidelines to prevent injury when lifting and carrying objects:

• Look the object over and decide where and how to hold it.   
 *Note:* Check for grease, oil, moisture, and sharp edges.

• Get help if you have any doubt about lifting the object yourself.

• Avoid carrying loads that extend above eye level or obstruct vision.

• Clear your path of obstructions and possible tripping hazards prior to lifting the object.

• Know where and how you will set the object down.

• Avoid twisting and awkward body positions.

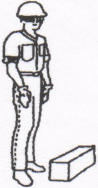
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**Lifting and Carrying Objects,** Continued

**Proper lifting techniques for all situations**

**PROPER LIFTING TECHNIQUES**

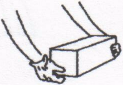




**GENERAL RULES FOR ALL SITUATIONS**

**1. Stand close**

To the object. Have firm footing, with feet spread comfortably and one foot slightly forward.



**2. Squat down**

—straddle the load somewhat. Keep back straight; *bend knees.*



**3. Grasp**

object firmly; be sure grip won't slip.

**4. Breathe in**

—inflated lungs help support the spine.



**5. Lift with legs**

—slowly straighten them. After legs are straight, bring back to vertical position.



**6. Hold**

Object firmly, close to body.

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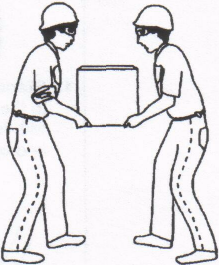
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**Lifting and Carrying Objects,** Continued

**Proper lifting techniques for special situations**

**PROPER LIFTING TECHNIQUES**





**SPECIAL RULES FOR SPECIAL SITUATIONS**

**Limiting Overhead**

The maximum load you can lift is lighter because you can't use your legs. Use extra care. Spread feet, with one foot slightly forward. Use firm platform or sturdy ladder for extra-high lifts...not chair or box. When in doubt—GET HELP.

**Lifting heavy objects**

If an object is too heavy, large or hard to handle, do one of these:

1. Get others to help.

2. Use a mechanical aid—forklift, winch, jack, etc.

3. Do it in pieces, one step at a time.

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# Slips, Trips, and Falls

**General Hazards** Slips, trips, and falls are a major contributor to injuries and accidents. You **should** take action to correct tripping and slipping hazards where possible.

The following are potentially hazardous conditions that may require precautions to avoid slips, trips, or falls:

• oily or slick floors and decks

• waxed or polished floors

• icy or wet surfaces

• worn or slick stair treads with round edges

• throw rugs and carpet that is wrinkled, torn, or frayed

• small items on the floor such as paper, pencils, paper clips, and push pins

• other items such as extension cords, loose tools, equipment, etc.

• footwear that does not provide good traction.

**Spilled liquids** You **should** remove spilled liquids from the floor as soon as possible.

If immediate removal is not possible, you **must** barricade or mark the spill to protect others.

*Note:* It may be necessary to consult the *Materials Safety Data Sheets (MSDS)* prior to attempting clean up.

**Icy conditions** Icy conditions represent a slipping hazard. Always use caution when walking on icy surfaces, especially when wearing leather soled shoes. You **should** also

• walk slowly

• use handrails where available, and

• keep hands free and out of pockets whenever possible.

**Snow and ice** Where needed, remove snow and ice from walkways.

**removal**

*Note:* Salt or sand can be used to clear icy walkways.

**Stable footing** When using wrenches or performing similar work activities, you **should** make sure that your footing is stable.

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**Slips, Trips, and Falls,** Continued

**Deck and floor** Every opening in a deck or floor into which a person could accidentally step  **openings must** be:

• constantly attended by a guard, or .

• protected by adequate barricades (with appropriate flagging) or standard

railings.

*Reference:* For more information, refer to the topic "Excavations" in the Construction and Maintenance section.

**Fall protection** Appropriate fall protection **must** be utilized when working

• in a location without handrails such as

- rooftops

- tank tops, and

- well heads with cribbing removed, etc.

• outside of handrails, and

• near stairway openings.

*References:* For more information, refer to the topic "Climbing and Fall Protection" in the Personal Protective Equipment section

**Stairs, Walkways, Doors, and Elevator**

**Stairway and** Stairways **should** be well illuminated by either fixed/portable lighting or flashlight.

**walkways**

When walkways and stairs are provided, they **should** be used. Do **not** take shortcuts.

The use of colors to mark elevation changes is encouraged.

Secure hoses and electrical cords to the floor or ground whenever they are laid across walkways.

**Elevators Read** and comply with elevator safety rules.

Let others exit an elevator before you enter.

Keep your hands and feet clear of closing elevator doors.

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**Stairs, Walkways, Doors, and Elevators,** Continued

**Opening doors** Open doors slowly; expect someone on the other side.

If a door opens toward you, approach it from the side.

Avoid balancing a load with one arm while opening a door.

**Using handrails** You **must** keep at least one hand free for holding the handrail when using stairs or escalators.

Standard handrails **must** be provided for stairways containing four or more steps.

Wooden walkways and handrails **should** be periodically inspected to ensure that they are in good repair.

Stairs to attic areas in warehouses **must** be equipped with adequate railings.

*Reference:* For more information, refer to the *Code of Federal Regulations 29 CFR 1910.23.*

**Obstructions** All steps, walkways, aisles, doors, base of ladders and stairs **must** be kept free of:

• obstructions such as tools, equipment, and materials, and

• oil, grease, and other slippery fluids and materials.

Minimum width requirements **must** be maintained on hallways and aisles. Walkways and aisles **must** be kept free of obstructions which may represent a tripping hazard.

*Reference:* For more information, refer to the *Code of Federal Regulations 29 CFR 1910.36.*

**Blind corners** You **should** approach blind hallway corners slowly, especially near

• coffee rooms

• copier rooms, and

• other highly traveled areas.

*Note:* When corner mirrors are installed, use them to see if other people are approaching.

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**Employee Safety Responsibilities**

**Safe conduct** Safe conduct of operations is a condition of employment at *(Enter Company Name Here)*.

**Injury and** All *(Enter Company Name Here)* employees are responsible for performing **accident duties in a** safe manner in order to prevent accidents and injuries to oneself and **prevention** and others. No business objective is so important that it will be pursued over safety.

**Before beginning** Accident and injury prevention is an essential part of planning and execution of every **work activities** job. Prior to beginning any job, task, operation, or activity, employees **must**

• understand the safe working conditions of the job by

- reviewing appropriate sections(s) of the Safety Manual

- participating in any pre-job planning meetings including meetings where task-specific procedures or job safety analyses are developed and reviewed

- asking for explanation of special hazards or risks associated with unfamiliar or hazardous activities

• assess the hazards and risks involved in the job and ensure that appropriate safety precautions are taken before, during and after the job, and

• communicate with other affected personnel about activities which may represent a hazard or risk to them.

**Safety** Employees **must**

**Responsibilities**

• know and use the Safety Manual rules applicable to their work as well as all applicable local safe work practices

• intervene if hazards or unsafe behavior is observed in the workplace

• promptly report hazards, safety incidents, and near misses to their immediate supervisor

• comply with all federal, state, and local safety and health related regulations.

**General** Supervisors and other *(Enter Company Name Here)* representatives in **responsibility** charge are responsible for:

• understanding the safe working conditions of the job, and

• ensuring that employees are familiar with the specific work to be performed.

Supervisors **must** ensure that *(Enter Company Name Here)* employees follow safety rules by *managing safety.* Managing safety includes, but is not limited to

• monitoring • advising as to the *(Enter Company Name Here)* safety • training

• enforcing • rules and procedures. • communicating

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# Supervisory Safety Responsibilities

**Management of** Supervisors **must** ensure that all additions, deletions, or alterations to **change *(Enter Company Name Here)* and a** operated equipment and procedure carried out consistent with “Management of Change" procedures.

**Safety briefings** Field supervisors (plant, drilling, work over, construction, etc.) **should** ensure that daily safety briefings are conducted.

When hazardous work or a new type of operation is to be undertaken, the supervisor **must** hold briefings to

• review the potential hazards and appropriate safety procedures, and

• give the affected personnel an opportunity to ask questions and make suggestions.

**Reporting** Supervisors **must** inform all employees under their supervision that accidents **accidents** and injuries of any nature are to be reported to the supervisor as soon as

possible on the same date of the occurrence. Supervisors, in turn, **must** ensure that appropriate communications and reporting are completed.

*Reference:* For more information refer to the Incident Reporting section

**Contractor Safety**

**Expectations** Safety is a prime consideration in all operations conducted by *(Enter Company Name Here)* including working with independent contractors. The detailed means employed by the independent contractor to meet that end are the responsibility of the contractor.

While working for *(Enter Company Name Here)* the contractor is responsible for abiding by *(Enter Company Name Here)* safety requirements.

Nothing stated or implied in these safety rules shall be construed to make a contractor an employee of the Company or any of its affiliates.

**Contractor** Contractors are responsible for

**Responsibilities**

• ensuring the safety of their employees while working for *(Enter Company Name Here)*

• ensuring that their employees are familiar with the work to be done and applicable sections of emergency response plans,

• training their employees in all areas necessary to ensure safe operations, and

• ensuring that their employees have and utilize all necessary personal protective equipment, and other safety equipment.

*Continued on next page*

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**Contractor Safety,** Continue

**Contractor** Contractors performing work on *(Enter Company Name Here)*

**Responsibilities premises MUST:**

(continued) • comply with all health and safety laws and regulations including, but not limited to, those of the California Occupational Safety and Health Administration Cal/ OSHA, the Environmental Protection Agency, and the Department of Transportation.

• adopt safety practices equivalent to or exceeding those applicable to *(Enter Company Name Here)* employees.

• ensure that all machinery and equipment is

- maintained in safe running order, and

- inspected regularly to ensure safe, continued operation.

• report all on the job contractor injuries, accidents, and near misses to the *(Enter Company Name Here)* representative (s) as soon as possible on the same date of the occurrence.

• participate in investigations of injuries, accidents, and near misses which occur on *(Enter Company Name Here)* jobs.

Safety Training The *(Enter Company Name Here)* representative(s) on location

OSHA Plans

Representative

Safety responsibilities • is responsible for confirming that a contractor has adopted safety practices equivalent to or exceeding those applicable to *(Enter Company Name Here)* employees.

**• must** immediately take appropriate action in situations where safety is, or has been compromised. These actions include

- notifying appropriate contract supervisors, and

- if necessary, shutting the job down.

**• must** follow up on identified problems to ensure that appropriate action has been taken.

**• must** appropriately communicate and report all accidents and injuries involving contractor personnel to the *(Enter Company Name Here)* Supervisor.

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Section 3

**Emergency Preparedness & Survival**

Overview

Section content **This section contains the following topics.**

|  |  |  |
| --- | --- | --- |
| Topic | | Page |
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| **Tornadoes** | | **3-4** |
| **Earthquakes** | | **3-5** |
| **Cold Environments** | | **3-7** |
| **Travel Guidelines for Cold** | **Environments** | **3-9** |
| **Survival Situations in Cold** | **Environments** | **3-11** |

Emergency **To prepare for an emergency or survival situation, personnel** should **become** procedures **familiar with the emergency procedures that pertain to the specific work location.**

**For weather-related emergencies and natural disasters such as landslides or flooding, refer to the *Emergency Action and Risk Management Manual.***

First Aid **Personnel expected to render first aid in an emergency situation** should **be trained in first aid, CPR, and bloodborne pathogens.**

Emergency **A current list of emergency phone numbers** should **be kept near a centrally** phone numbers **located telephone.**

Hurricanes and Tropical Storms

Description **Hurricanes originate in tropical waters and may bring heavy rain, high winds and tides, and sometimes tornadoes. The hurricane season is from June through November, but the majority of hurricanes occur in September.**

***Continued on next page***

January 2012 *(Enter Company Name Here)* Safety Manual  **3-1**

**Hurricanes and Tropical Storms,** Continued

**Weather alerts** The Weather Bureau broadcasts major types of weather alerts, including those **and advisories and** described in the following table.

|  |  |  |  |
| --- | --- | --- | --- |
| **Alert** | **Wind Velocity (mph)** | **Advisories** | **Definition** |
| **Tropical storm:**  • Gale Warning  • Whole Gale | 39-54  55-73 | Small Craft Warning | Advises small craft to take precautions and not venture out into open water. |
| **Hurricane** | 74 + | Hurricane Watch | Warns of a threat to a designated coastal/inland region. |
|  |  | Hurricane Warning | Identifies a coastal area where winds of 74+ mph are expected to occur. |

|  |  |  |
| --- | --- | --- |
| **Phase**  **Hurricane alert phases** | **Description** | **Actions to be Taken** |
| 1 | A tropical depression, storm, or hurricane begins to form and is judged to have a potential for affecting operations. | Initiate preparations for shut­down of the affected area. |
| 2 | The hurricane is approaching operations, and is judged to have a probability for affecting operations. | Evacuate non-essential personnel. |
| 3 | The hurricane is judged as certain to have an effect on operations. | Shutdown operations and evacuate personnel. |

**Hurricane** When you hear a warning of a potential hurricane:

**preparations**

• Be sure motor vehicles are in good running condition and have at least three- fourths of a tank of fuel. (It could be difficult to obtain fuel within 100 miles of your

evacuation site or assembly point.)

• Drive carefully during an evacuation, since risk is increased due to high winds, rain, and traffic conditions.

*Continued on next page*

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**Hurricanes and Tropical Storms**, Continued

Hurricanes **• Be sure that emergency survival supplies are available, such as**

preparations

**(Continued) - fire extinguishers**

**- a portable AM/FM radio with extra batteries**

**- a three-day supply of non-perishable food and water for each individual**

**- blankets**

**- first aid supplies**

**- water purification supplies, and**

**- flashlights with extra batteries**

During a **Stay in touch with the movement of the hurricane through radio and television** Hurricane **advisories, and**

**Remain in the shelter — do** not **travel during a hurricane.**

***Warning.* If the center ("eye") of the hurricane passes directly over your location, a lull in the wind occurs, which may last from five minutes to half an hour? Then the wind velocity will increase suddenly, perhaps with greater force.** Remain in the shelter.

After a hurricane **After the hurricane has passed:**

**• Check the condition of refrigerated food for spoilage due to possible power outage during the hurricane.**

**• Avoid low-hanging and downed electrical wires because the wires may still be energized.**

**• Follow the directions of local law enforcement agencies in traveling. Soil may be washed out beneath roads in coastal areas and the weight of a vehicle may cause collapse.**

**• Be aware of the increased potential for snakes and other wildlife in unexpected areas.**

**• If contaminated water is suspected or reported, treat each gallon of drinking water with one of the following:**

**- four water-purifying tablets, or**

**- 12 drops of two percent tincture of iodine, or**

**- eight drops of liquid chlorine household bleach. *Warning".* Only use bleach which contains hypochlorite as the only active ingredient.**

January 2012 *(Enter Company Name Here)* Safety Manual **3-3**

**Tornadoes**

**Description** A tornado is a funnel-shaped cloud that spins rapidly and extends toward the ground from the base of a thundercloud.

Tornadoes occur most frequently in the months of March and September in the Midwestern, southern, and central states.

**Tornado** The table below describes the conditions under which tornado advisories are **advisories** issued, and the actions to take for your own safety.

|  |  |  |
| --- | --- | --- |
| **Advisory** | **Weather Condition** | **Actions to Take** |
| **Tornado Watch** | Weather conditions are judged as having a potential for forming a tornado. | Listen to radio or television for current information.  *Caution:* Do not tie up phone lines by calling the Weather Bureau, except to report a tornado. |
| **Tornado Warning** | A tornado has been sighted or detected by radar. | Prepare to take immediate cover. |

**Tornado shelters** Select a shelter in advance. The best tornado shelter is provided by a tornado cellar or underground excavation with an air outlet to equalize the air pressure. The shelter **should** be free from water, gas, or debris and equipped with a pick and shovel if possible.

*Warning:* Be cautious when selecting a shelter. Flash flooding caused by thunderstorm rains could make some locations dangerous.

**Before a tornado** Seek a tornado shelter.

If a tornado shelter is not close, seek an inside shelter in a strongly reinforced building, if possible. *Note:* The southwest corner of the basement usually provides the best protection. In a building without a basement, stay against the inside wall of a lower floor, and if possible take cover under heavy furniture.

Avoid auditoriums, gymnasiums, or other structures with large, poorly supported roof structures.

If you are in an open area, move at right angles to the path of the tornado to avoid it if possible. Tornadoes travel at about 25 to 40 mph. If there is no time to escape, lie flat in a depression, ditch, or ravine.

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**Tornadoes**, Continued

**During a tornado** **Remain calm.**

**Do** not **leave your shelter to go out during the storm.**

**Stay away from windows.**

**Lie face down, draw your knees up under your body, and cover the back of your head with your hands. This position helps prevent head injuries*,* the most common cause of death during tornadoes.**

**Thunderstorm** **To avoid being struck by lightning, stay indoors and away from electrical** precautions **appliances and telephones during the thunderstorm that accompanies the tornado. If you are outdoors, avoid elevated and metal structures.**

Be prepared for possible flash flooding, very strong winds, and hail from the thunderstorms that accompany most tornadoes.

**Earthquakes**

**Earthquake**  **Most casualties from an earthquake do not result from the actual movement of hazards the ground, but rather from objects and debris falling from buildings, bridges,**

**and other structures that are shaken, damaged, or demolished by the shock of the earthquake.**

**Landslides, ocean waves, or seismic sea waves triggered by earthquakes can also cause damage.**

**Earthquake** **Prepare for an earthquake, as follows:**

**precautions**

**• *Potential hazards:* Periodically check all offices, storage areas, production areas, and other work locations for earthquake hazards:**

**- Mount all pictures, mirrors, etc. securely on walls so that they would not fall during an earthquake.**

**- Secure gas lines and gas appliances to prevent leaks, and keep a shut-off tool**

**close to the source valve.**

**- Secure top-heavy equipment, file cabinets, and bookshelves, and other heavy items that might tip over during an earthquake.**

**• *Evacuation:* Be familiar with alternate routes of evacuation from the various**

**parts of the building.**

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**Earthquakes,** Continued

**Earthquake** • *Family communication plans:* Have a prearranged plan for communication with **precautions** your family, including a designated contact person outside the catastrophe area for (continued) telephone communication during an emergency. *Note:* Local phone networks may

be overloaded or inoperative.

• *Emergency supplies:* In areas where personnel may not be able to leave the building, it is recommended that the following emergency survival supplies be maintained:

- fire extinguishers

- a portable AM/FM radio with extra batteries

- a radio for communication purposes

- a three-day supply of non-perishable food and water for each individual

- blankets

- first aid supplies

- water purification supplies, and

- intrinsically safe flashlights with extra batteries.

**During an** Remain calm and assure others. By doing so, you can help avoid actions that are not **earthquake** well thought out or that may incur unnecessary risk.

If you are outside, move to an open area to avoid the danger of falling trees, power poles, walls, electric lines, etc.

If you are inside, crouch under a solid object such as a desk or table, and cover your head with arms and hands. If no solid object is near, stand in a doorway or against an interior wall.

Do **not** stand near windows, exterior walls, or near any objects that may fall such as light fixtures, bookcases, etc.

Do **not** run outside where falling objects may present a hazard.

Do **not** use the elevator which might be damaged.

If driving, stop the vehicle. *Warning:* Do **not** stop on or under any overpass or elevated roadway, because of the possibility of a structural collapse.

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**Earthquakes,** Continued

**After an** Make your area as safe as possible by taking the following actions:

**earthquake**

• Check for injuries among other personnel. Administer first aid as needed.

• Check the building for damages, such as fire, gas leaks, damaged electrical wires,

• Shut off utilities, if required.

• Clean up hazardous materials and dangerous spills.

• Evacuate the building when directed to do so, and do **not** reenter it until a safety inspection is performed.

• Move to a clear area away from falling objects.

• Conserve water.

• Contact the emergency response agency when appropriate.

• Do **not** restore gas or electric service until authorized personnel have checked the facility.

• Do **not** use the elevators until they have been inspected and approved.

Be prepared for additional earthquake shocks, called "after shocks." Most of them are smaller than the main shock, but some may be large enough to cause additional damages, especially to buildings already weakened by the main quake.

If contaminated water is suspected or reported, treat each gallon of drinking water with one of the following:

• four water-purifying tablets, or

• 12 drops of two percent tincture of iodine, or

• eight drops of liquid chlorine household bleach, **if** the label states that hypochlorite is the only active ingredient.

Be prepared for a delay in civil service response of as long as 72 hours.

**Cold Environments**

**General Personnel** working in extremely cold environments are expected to carry a copy and **precautions** be familiar with thecontents of the API publication, *Staying Alive in* extremely cold

environments*.* Personnel working in other extremely cold environments **should** be familiar with this publication.

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**Cold Environments,** Continued

**General** Wear appropriate clothing to prevent exposure that can cause frostbite and **precautions** hypothermia. (Refer to the Wind-Chill Chart presented below.)

(continued)

Protect clothing from wetness, both externally (from rain, water, or wet snow) and internally (from perspiration). Wet clothing does not provide adequate insulation and causes body heat to be lost at extremely high rates.

Protect yourself from intense light reflection from ice, snow, and water. Light reflection can cause snow blindness and sunburn. Wear sunshades and protective screens.

Protect yourself from wind which can cause severe burns.

*Reference:* For more information on the symptoms and treatment of frostbite and hypothermia, refer to the First Aid section.

**Wind-chill chart** Cold temperatures plus wind speeds can contribute to dangers from frostbite and/or hypothermia. The table below illustrates the dangers.

WIND-CHILD CHART

|  |  |
| --- | --- |
| **Estimated**  **Wind Speed**  **(mph) ACTUAL THERMOMETER READING, ˚F** | |
| Calm  5  10  15  20  25  30  35  40 | 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60  EQUIVALENT TEMPERATURE, ˚F  48 37 27 16 6 -5 -15 -26 -36 -47 -57 -68  40 28 16 4 -9 -21 -33 -46 -58 -70 -83 -95  36 22 9 -5 -18 -36 -45 -58 -72 -85 -99 -112  32 18 4 -10 -25 -39 -53 -67 -82 -96 -110 -124  30 16 0 -15 -29 -44 -59 -74 -88 -104 -118 -133  28 13 -2 -18 -33 -48 -63 -79 -94 -109 -125 -140  27 11 -4 -20 -35 -49 -67 -82 -98 -113 -129 -145  26 10 -6 -21 -37 -53 -69 -85 -100 -116 -132 -148 |
| Wind speeds greater than 40 mph have little additional effect | INCREASING GREAT DANGER  DANGER |

To use the chart, find the estimated or actual wind speed in the left-hand column and the actual temperature in degrees Fahrenheit in the top row. The "Equivalent Temperature" is found where these two intersect. For example, with a wind speed of 10 mph and a temperature of minus 10° F, the equivalent temperature is minus 33° F. This temperature lies within the zone of increasing danger of frostbite, and protective measures **should** be taken.

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**Cold Environments**, Continued

Protective **The clothing recommended for temperatures of minus 20° F includes**

Clothing for

Minus 20˚ F **• parka with hood**

**(equivalent**

**temperature) • Arctic pants**

**• wool shirt, pants, and extra wool socks (or wool substitutes)**

**• wool hat with wool liner, face mask, and safety hat**

**• insulated mittens, and**

**• winter insulated boots with vapor barrier and rubber bottoms.**

Personal **The personal supplies recommended for temperatures of minus 20° F include**

Supplies for

Minus 20˚ F **• first aid kit and manual • nylon cord**

**(equivalent**

**temperature) • waterproof matches in a waterproof container • plastic trash bags**

**• flashlight, with extra batteries • mirror**

**• candles, sterno, and metal cups • compass**

**• a three-day supply of non-perishable food • sunglasses, and**

**• signaling cloth strips, in orange or red • whistle**

## Travel Guidelines for Cold Environments

Basic **Check weather conditions before making plans to travel.**

requirements

**Prepare a written trip plan, giving**

**• the intended route of travel**

**• expected time of arrival, and**

**• the names of all members of your group.**

**Always inform appropriate personnel at** both **the origin and destination points of the trip plans.**

**You** should not **travel without properly operating two-way communication equipment.**

**Use only vehicles, boats, and aircraft that are equipped with government-required and other appropriate survival equipment. (See the lists that follow in this section.)**

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**Travel Guidelines for Cold Environments,** Continued

**Basic** Check the condition of the transportation equipment regularly. Prior to use, check all **requirements** vital fluids and operation of the equipment.

(Continued)

In the Arctic regions, drive **only** on designated roads and trails.

If traveling by helicopter or airplane over open water where the water temperature is less than 50° F, a cold-water survival suit **must** be worn at all times.

**Personal Survival** The Personal Survival Kit **should** be designed to meet the needs of an individual in **Kit** an arctic environment and include:

• a manual • whistle • seasick tablets

• mirror • flashlight • sun blockers

• knife • extra batteries • waterproof matches

• plastic bags (for flotation or shelter)

• personal medication and eye wear

**Survival** The survival equipment listed below **should** be kept in all motor vehicles operating in **equipment:** cold environments to meet both personal needs and to allow for vehicle repair.

**Motor vehicle**

*For Personal Needs:*

*•* Personal Survival Kit (Refer to "Personal Survival Kit" earlier in this section.)

• first aid kit and manual

• two wool blankets in plastic bags

• insulated mittens or gloves

• small stove, metal pans, cups, and utensils

*For vehicle repair:*

*•* spare tire, with proper inflation

• jumper cables

• shovel, with an 8-inch blade and 36-inch handle

• motor oil and fan belts

• tow chain or cable

• tool box with wrenches, screwdrivers, and pliers

• assorted nuts, bolts, springs, and nails

• map

• carbon monoxide monitor

• flashing amber light

• backup communication device

• wire and electrical tape

• fuses and flares

• nylon cord (30 feet)

• tire chains and sand

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**Travel Guidelines for Cold Environments**, Continued

Survival **The survival equipment to have aboard boats in cold environments includes** equipment boats the following:

**• Personal Survival Kit (Refer to "Personal Survival Kit" earlier in this section.)  
• first aid kit and manual • radio**

**• personal flotation devices • ring buoys**

**• wool blankets in plastic bags • flares**

**• bell, fog horn, or siren • transmittal locator and GPS device**

**• fire extinguisher**

Survival **The survival equipment to have aboard aircraft in cold environments includes the** equipment **following:**

aircraft

**• Personal Survival Kit (Refer to "Personal Survival Kit" earlier in this section.)**

**• first aid kit and manual • life rafts**

**• inflatable flotation device • transmittal locator and GPS device**

**Survival Situations in Cold Environments**

Winter storm **Winter storms can develop quickly, creating situations in which you can become** survival **disoriented and lost. If you are in a developed area, remain close to buildings or** guidelines **other fixed reference points. If you are in an open area, stay within a safe distance**

**— and in** **sight of — a vehicle. If visual reference no longer exists, so that safe movement is** **impossible,** stay put.

**Stay with a downed aircraft, boat, or stalled vehicle whenever possible, because rescuers can locate them more easily than an individual. Use the vehicle or aircraft for your survival needs.**

**Conserve heat. Avoid overexerting yourself. This prevents excess perspiration, which reduces the insulating value of your clothing.**

Do not eat snow. **Eating snow accelerates body cooling and increases the chance of hypothermia. Melt the snow and ice, and consume the resulting warm water.**

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**Survival Situations in Cold Environments,** Continued

**Survival times in** The table below lists the average survival time at different water temperatures.

**Cold water**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Personal Flotation** | **Posture** | **40° F** | **50° F** | **60° F** |
| No | Drown proofing (floating) | 1 hr. | 1 hr. 30 mins. | 2 hrs. 15 mins. |
| No | Treading water | 1 hr. 30 mins. | 2 hrs. | 3 hrs. |
| Yes | Swimming | 1 hr. 30 mins. | 2 hrs. | 3 hrs. |
| Yes | Holding still | 2hrs. | 2 hrs. 40 mins. | 4 hrs. |
| Yes | Huddling | 3hrs. | 4 hrs. | 6 hrs. |
| Yes | Wearing immersion suit with high insulation | 12 hrs. plus | 12 hrs. plus | 12 hrs. plus |

**References** For information on

• symptoms and treatment of frostbite and hypothermia, refer to the First Aid section

• carbon monoxide hazards, refer to the Chemical and Product Safety section, and

• water survival; refer to the table presented previously and to the Transportation section.

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**END OF SAMPLE**

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