

Risk Control Bulletin

Emergency Planning

RISK CONTROL



Introduction

The pre-emergency plan is usually thought of as a pre-plan for fires since fire is one of the emergencies most frequently encountered. However, dealing with fire emergencies is only one of the situations a pre-emergency plan should include. The pre-emergency plan should spell out a course of action that directs personnel in acting immediately and correctly during all types of emergencies such as fire, explosion, bomb threats, tornadoes, hurricanes, etc. The local fire department should be invited to tour your facility and should offer assistance in developing your pre-emergency plan.

The main objective of any pre-emergency plan should be to provide a safe environment for employees during an emergency.

The pre-emergency plan should include a diagram of the facility showing construction, occupancy, utility shut-offs, hazardous materials, flammable liquids storage and use areas, and fire protection equipment. This diagram should be provided to the local fire department and CNA. Any time it is necessary to evacuate the facility due to an emergency the emergency team is responsible to make sure everyone is out of the building. Therefore, there should be a meeting place for groups and a headcount should be taken.

The pre-emergency plan outlined should include an emergency team with detailed duties during an emergency. The size of emergency team will vary with the size and complexity of the company it protects. The emergency team must be custom fitted to a company's needs so that enough people are assigned to handle all emergency functions adequately. While team members should be specifically trained to handle any emergency and minimize injury to employees and damage to property, all employees should have basic and general knowledge of the entire pre-emergency plan and what is expected of them. The basic emergency team will include an emergency

coordinator, floor captain/group leader, exit guide, searcher, notifier, and salvage squad. In certain cases, some of the duties may not be applicable or there may not be enough personnel for a separate individual to fill all of the above mentioned assignments. Therefore, the fire squad may double as the salvage squad or a person may have more than one responsibility. If the facility operates more than one shift, emergency team members should be present on every shift. Also, alternates should be trained in case regular emergency team members are on vacation or out sick.

Emergency Coordinator

It is very important that management appoints an emergency coordinator who will report directly to top management. The emergency coordinator need not be an expert on every hazard, but the person can learn more about the hazards from department heads, engineers, process developers or installers, and CNA representatives. The selection of the emergency coordinator must be done with great care, since most of the success of the emergency team will depend upon the emergency coordinator's skills. The individual should be familiar with the facilities, understand any special hazards, as well as care and operation of all fire protection systems, know the location of all exits, know the location of light switches, and know the location of all handicapped individuals who will need special assistance during emergencies.

In addition, the emergency coordinator must know the limits of exposure to hazardous operations, and should be familiar with the NFPA Life Safety Code.

Floor Captain/Group Leader

Facilities that have over 50 employees, or are multi-story buildings, may have a need for a floor captain or group leader. This person should understand the duties of the emergency coordinator. During an emergency, the group leader/floor captain will form the group and move them to



designated exits on signal from the emergency coordinator. The group leader will stay with the group and lead them out of the building if evacuation is necessary. The group leader should pay attention to the exit guide's instructions before using stairwells or elevators, and assign specific persons to remain with and aid handicapped individuals if evacuation becomes necessary.

Exit Guide

The exit guide is responsible for insuring that no bottlenecks occur as people exit into stairwells. Each exit guide should know the duties of the emergency coordinator. During an emergency, the exit guide should be in position at an assigned exit, assist in the orderly evacuation of personnel, instruct personnel using stairwells to form two single files, one line along each railing. When descending or ascending stairs according to instructions from the emergency coordinator, the exit guide should position his or herself on the floor landing in such a manner as to be able to view upper and lower areas between floor landings.

Searcher

Searchers are responsible for evacuation of personnel from storerooms, toilets, and other remote areas. Searchers must understand the same duties of the emergency coordinator as well as their own. During an emergency, the searcher should check all rooms, toilets, and remote areas. Employees found in such areas should be instructed on the nature of the emergency and what action should be taken. If evacuation is required, the searcher should instruct employees to join a group at the nearest exit.

Notifier

When an alarm is sounded, it is the responsibility of this person to contact the proper emergency unit (e.g., fire department, police, bomb squad, etc.). Unless someone has been specifically designated for this function, there may be a delay in reporting the emergency. Switchboard operators or those with easy access to a telephone are logical choices for this position.

It is very important that the notifier receives explicit and

correct information on the type of emergency. After making contact with the emergency unit, the notifier should inform the emergency coordinator or group leader that the call has been completed and at what time the call was made.

Salvage Squad

Lost business due to an emergency can be very detrimental to a company. Studies have shown that most business lost, while clean-up or rebuilding takes place, is never recaptured. Therefore, getting back to normal should be the primary objective after an emergency, and restoration should begin as soon as practical. Salvage has to do with the covering or removal of goods which may be damaged by fire or water. It includes the diversion and removal of water from floors and stairways and includes the protection of property saved from fire.

Salvage operations usually begin on the floor in which the emergency occurred or the floor below the emergency floor. Whatever the case may be, salvage operations should begin as quickly as possible.

Some fire departments have equipped their apparatus with salvage covers and various other salvage equipment. When the local fire department tours the facility, the emergency coordinator should determine what salvage equipment is available and what fire department salvage operations are available. Salvage operations for a fire have two major objectives: (1) to protect the contents against water and (2) to contain or discharge the water as far as possible outside the premises to prevent further damage. Where business interruption is a major concern, adequate contingency plans should be implemented to reduce the business interruption exposure.

Fire Squad/Fire Brigade

CNA is not advocating the use of a "full stage" fire brigade as that is beyond the scope of this program. However, employees should be given training in the use of portable fire extinguishers. This training can be administered by the local fire department or anyone who is knowledgeable in the use of extinguishers. The training should include the proper use of Class A, B, C, D, K, or clean agent extinguishers, along with hands-on training, if possible.



Also, employees should be educated about any types of special extinguishing systems which may exist within their work area. Special extinguishing systems include CO2 systems, clean agent systems, dry chemical systems, foam systems and water spray systems. Employees should be instructed on how these systems operate and what they should do upon automatic activation of these systems.

Employees should be made aware of the manual operation of any special extinguishing systems and they should be instructed on when they should operate the system manually.

Fire

When a fire occurs, the emergency coordinator must double check the emergency team to see that all members are in place and performing as they have been trained to do. The emergency coordinator must check with the notifier to be sure that the fire department has been called.

The first priority during a fire is the safety of employees. It must be determined whether a total or partial evacuation is necessary. If the facility is sprinklered, the maintenance department must check to make sure the valve(s) is (are) open. If there is a fire pump, the maintenance staff should make sure the pump is on. At first, the fire may not be big enough to cause the fire protection system to activate. However, the fire equipment should be checked in case the fire does grow out of control of the fire squad/brigade.

The emergency coordinator should station a person at the main entrance to guide the public fire department to the fire area. This person should be kept informed on progress of the situation so they can inform the fire department upon their arrival.

Once the fire has been controlled and extinguished, the emergency coordinator has several follow-up duties. The first priority is to get the fire protection system back in service whether it be sprinklers, clean agent, CO2, etc. Remember, that while the fire appears to be out, it could rekindle. If the fire was extinguished by plant personnel, a complete overhaul of the area/object should be undertaken to ensure that the fire has been completely extinguished.

At the order of the fire department, the maintenance staff should close the sprinkler valve(s) and replace any fused sprinkler heads. During this procedure, have someone stand by ready to re-open the valve, should the fire rekindle. After replacement of the heads, all valves should be locked in the open position and a drain test should be conducted to make sure there are no obstructions. The maintenance staff should make sure that the pump is in good running order with adequate water in the suction or gravity tank. All hoses should be drained, all portable equipment should be replaced and all extinguishers should be recharged as soon as possible. The salvage squad should begin clean up.

Tornadoes

A tornado is a violent storm with whirling winds of up to 300 miles per hour. It appears as a rotating, funnel shaped cloud, from gray to black in color, which extends toward the ground from the base of a thunder cloud.

A tornado watch implies that a tornado could develop in or near the area. A tornado warning means that a tornado has been sighted in the area.

If a tornado watch is issued, the emergency coordinator should assign someone to listen to local radio, television, or National Oceanic and Atmospheric Administration (NOAA) weather radio for information and advice.

If a tornado warning is issued for the area, take shelter immediately. The warning means that a tornado has actually been sighted, or has been indicated by radar, and may strike in the vicinity.

The lowest floor is usually the safest place during a tornado. Upper floors receive full strength of the winds. In some cases, tornado funnels hover near the ground, but hit upper floors only. Below ground space is almost always the safest location for shelter. If a building has no basement, ground floor interior spaces can provide a form of a protective core. A completely interior room protects against missiles and the wind tunnel effect. The best interior partitions although somewhat massive, fit tightly to the roof or floor structure above, and are securely fastened to the floor. Interior partitions that contain windows should be avoided. Those areas within the facility, that will be the



safest spots during a tornado, should be determined and designated prior to an emergency.

After the tornado has passed:

1. Be prepared to start search and rescue operations immediately.
2. Prepare a damage report and initiate temporary repairs in an effort to prevent further damage.
3. Pay special attention to possible fire, flooding, or impairment of fire protection equipment.
4. Temporarily repair openings in the building or cover the contents of the building with tarpaulins to minimize rain damage.
5. Initiate salvage operations.
6. Exercise extreme care around damaged power lines. The utility company should be advised of necessary repairs.
7. Clear roof drains of debris to prevent water from ponding on the roofs, which could lead to roof collapse.
8. Caution emergency crews and salvage teams not to smoke or use heat producing devices if there is a possibility that flammable liquids or gases are present.

Flooding

Flooding is commonly defined as the rise and overflow of a body of water that covers land not usually under water. Detailed information, about the susceptibility of a site flooding in the United States, has been compiled by the U.S. Department of Housing and Urban Development. The Army Corps of Engineers provides information and assistance in flood related matters. They maintain a file of flood plain information, surveys and other reports. During flood emergencies, the Corps can assist states and communities by providing materials, equipment, and personnel for flood fighting and construction of temporary levees or other protective structures.

During floods, the greatest effort should be made to keep water out, rather than planning to remove it once it fills the building. In planning for floods, a detailed list should be developed indicating the order in which processes are to be shut down and the facility secured. Flood shields will keep water out. These are permanent parts of a structure,

but need to be slid into place or bolted on before the flood waters rise. If your facility doesn't have flood shields, sandbags or sheet metal coverings can be used to seal openings but these supplies must be on hand. It is important to keep boiler houses and pump rooms as dry as possible.

Stored goods might have to be raised off the floor or moved to higher floors, especially in basement areas. Storage tanks either within the building or nearby should be filled if they are not anchored securely enough to keep from floating. Barriers can be placed around sprinkler risers and gravity tank risers to keep them from being damaged by floating debris. The emergency team should turn off all open flames, shut off the main gas valve and close discharge valves on all tanks that contain flammable liquids or dangerous chemicals. Those chemicals that produce heat or noxious gases when reacted with water should be raised or moved to upper stories.

When the flood waters recede, the emergency team should supervise the following activities:

1. An immediate damage assessment should be made.
2. Special attention should be paid to possible fire or impairment of fire protection equipment.
3. Salvage operations should be initiated.
4. Care should be exercised around damaged or submerged power lines. The utility company should be advised of necessary repairs.
5. Drains should be cleared of debris.
6. Emergency crews and salvage teams should be cautioned not to smoke or use heat-producing devices if there is a possibility that flammable liquids or gases are present.

Hurricane

A hurricane is defined as a storm with pronounced rotary circulation, winds exceeding 74 mph and are normally accompanied by torrential rains and flooding. The majority of hurricanes occur from mid-June to mid-November.

In planning for hurricanes, a detailed checklist should be developed indicating the order in which processes are to be shut down and the facility secured. The length of time



needed to accomplish these tasks should be determined in advance so that appropriate actions can be initiated at the proper time.

The emergency coordinator should monitor the storm advisories issued by the National Weather Service and decide if conditions warrant a shut down. Precautions should be taken and appropriate actions implemented as soon as a hurricane warning has been announced.

When the worst of the storm has passed:

1. An immediate damage assessment should be made.
2. Special attention should be paid to possible fire, flooding, or impairments to fire protection equipment.
3. Openings in walls or roofs should be temporarily repaired or the contents of the building covered with tarpaulins to minimize rain damage.
4. Salvage operations should be initiated.
5. Roof drains should be cleared of debris to prevent water from ponding on the roofs which could lead to roof collapse.
6. Extreme care should be exercised around damaged power lines. The utility company should be advised of necessary repairs.
7. Emergency crews and salvage teams should be cautioned not to smoke or use heat producing devices if there is a possibility that flammable liquids or gases are present.

Winter Storms/Cold Weather

Cold weather and associated winter storms are normal occurrences each year for most of North America. In some areas, however, cold weather is not usually considered a matter of concern. In those areas, the temperatures seldom reach freezing and, when they do, they linger for a relatively short period of time. Such lack of concern may not be justified as loss experience illustrates that shifts in the jet stream can cause bitterly cold arctic air masses to press deeply into the warmer climates.

Therefore, it is of vital importance, that facilities located in all but tropical areas give careful consideration to precautions which must be taken before the cold season each

year. All heating equipment should be inspected every fall before the cold weather sets in. All safety controls and combustion safeguards should be inspected to avoid overheating, sudden breakdowns, or other accidents. Adequate building heat should be provided during cold weather to prevent freeze-up of sprinkler and other interior water piping. It may be helpful to slightly open faucets to let a trickle of water flow to help prevent freezing of domestic piping.

In planning for winter storms, the emergency coordinator should:

1. Assign specific internal tasks such as:
 - a. Plowing and shoveling (including roof, if necessary, especially if the roof is multi-level).
 - b. Installing snow fences and marker poles at hydrants and fire protection control valves.
2. Establish procedures for calling outside plowing contractors and other assistance.

The emergency coordinator should monitor storm advisories issued by the National Weather Service of the National Oceanic and Atmospheric Administration (NOAA). When a major winter storm warning is issued, precautions should be taken and appropriate action implemented. If a winter storm warning is issued for a time when the facility will be shut down, extremely careful preparations must be made to ensure that shutdown of the facility does not adversely increase the effects of these conditions.

During a major winter storm, the emergency coordinator should:

1. Determine if an early closing or delayed opening is necessary.
2. Request outside plowing as needed.
3. Establish communication with employees on the premises, snowplow operators and emergency crews.
4. Continue to monitor National Weather Service advisories.
5. Initiate clean-up procedures on a continuing basis. Particular emphasis should be placed on:
 - Clearing snow from exits, fire protection equipment and utilities.



- Removing snow from roofs in areas subject to drifting. Typically, these areas are at the junction of buildings with different roof heights.
 - Inspecting roof drains to be sure there is no ice build-up.
6. Check all areas of the facility to be certain that sufficient heat is being maintained to prevent protective systems, process equipment and piping, and other systems from freezing. Particular attention should be given to areas such as concealed spaces above suspended ceilings that contain sprinkler and/or water piping. Also, entryways and remote stair towers should be given special attention when protected by sprinklers.

After the storm has ended, the emergency coordinator should see to it that:

1. An immediate damage assessment should be made and temporary repairs undertaken.
2. The remaining snow should be removed, with priority given to valves, hydrants, pump houses, exits, and fire department access routes.
3. Once the temperatures begin to rise, those areas within the facility that were most likely to suffer freeze damage, should be promptly inspected to detect, as early as possible, any cracks or leaks in piping.

Earthquakes

An earthquake is defined as a "shaking or trembling of the earth that is volcanic or tectonic in origin."

Most earthquakes are due to abrupt rupturing of great masses of rock beneath the earth's surface. Many parts of the United States are susceptible to earthquakes. The earthquake potential of any area can be evaluated on the basis of its proximity to known earthquake faults or by using seismic activity maps.

Earthquakes usually occur without warning. Therefore, it is important to have designated areas of safety assigned to the employees by the emergency coordinator. These areas can be underneath a heavy desk, table, bench, in a supported doorway, or along an inside wall. Stay away from glass.

If in a high-rise building, get under a desk or similar heavy furniture. Do not dash for exits, since stairways may be broken and jammed with people. Never use elevators since power may fail. Also, never use any candles, matches, or other open flame either during or after the tremor because of possible gas leaks. All able-bodied employees should be grouped into teams under the supervision of the emergency coordinator.

Team members should be assigned to:

1. Reassure people that the emergency is under control.
2. Shut off all power and hazardous liquids and gases at their source.
3. Extinguish any small fires.
4. Communicate with Civil Defense to advise them of conditions at the facility, the need for any outside assistance and to determine the extent and severity of the earthquake.
5. Assess the damage sustained to utilities in order to formulate and initiate contingency plans.
6. Initiate salvage operations.

Aftershocks can be as dangerous as the initial earthquake. Therefore, it is important to keep non-emergency personnel out of weakened structures until the damage has been thoroughly evaluated.

Sprinkler Leakage

Sprinkler leakage is commonly defined as the sudden and accidental discharge of water from sprinkler systems and/or from their water supply pipes. Leakage from interior piping, including sprinkler heads, is usually caused by one of the following:

1. Mechanical damage due to careless operation of forklift trucks or other equipment.
2. Excessive heat near the sprinklers. This can result in their activation operation or a weakening of the operating element known as "cold flow" that causes the phenomenon of unpredictable premature operation.
3. Inadequate heat in the area. This results in frozen water and broken pipes, fittings, and sprinkler heads.



4. Manufacturing defects in sprinklers or piping. However, sprinklers are thoroughly tested by independent laboratories and defects are the least common cause of sprinkler leakage.

When leakage occurs from interior piping or sprinklers, the following procedures should be taken:

1. After checking to be certain that there is no fire, promptly shut down the valve controlling the leaking system. It may be possible to insert a plug into the frame of any fused sprinkler head to minimize both the water damage and the length of the impairment prior to making repairs (utilize the impairment procedures outlined in CNA's Property Protection Program).
2. Disconnect power to any electrical device which may be getting wet.
3. Begin repairs promptly.
4. Initiate salvage of machinery and stock and clean-up of water.

Leakage from underground piping is usually caused by one of the following:

1. Settling of structures built over it.
2. Pipe freezes due to inadequate depth of burial.
3. Corrosion of ferrous pipe as a result of poor soil conditions.
4. Improperly laid pipe, resulting in abnormal stress when the earth around it settles.
5. Unusually heavy or frequent live loads, such as trains and heavy trucks, which may weaken the pipe.
6. Excavation equipment damaging pipe.

When leakage from underground piping occurs, visual observation may be difficult. Clues to the occurrence would be:

1. Water coming out of the ground.
2. The operation of low water pressure alarms or automatic starting of the fire pumps.
3. The sound of water running through pipes.

If underground leakage has occurred, the following measures should be taken:

1. Isolate the break since it may undermine structures or roadways. This requires knowledge of the fire protection system and sectional valve locations. Close those valves that will result in a minimal impairment to plant sprinkler systems. (Utilize the impairment procedures outlined in CNA's Property Protection Program).
2. If extended sprinkler impairments are unavoidable, arrange temporary cross feeds to affected systems either from unaffected systems or yard hydrants.
3. Proceed promptly with permanent repairs, if possible. When parts are not available, temporary repairs should be made. The goal is to restore sprinkler protection as quickly as possible.
4. If the system cannot be restored immediately, a fire watch must be established throughout the area, and the fire department should be on stand-by.

Public Water Supplies Outage

Planned or emergency interruption of a public water distribution system often results in the loss of both fire protection and service water. In order to minimize the effect of this situation, the emergency coordinator should:

1. Notify the public fire department.
2. Discuss the duration of the shutdown with officials of the water department.
3. Develop a priority list for water usage if it becomes necessary to conserve marginal or private supplies.
4. Reserve all private fire protection water supplies for fire use only.
5. Defer normal sprinkler system maintenance until the water supply is restored.
6. Use the CNA impairment handling procedures when the curtailment results in a loss of fire protection.

Those facilities where service water is critical for life safety should have an outside contract for water during a water shutdown or water emergency.



Electric Power Outage

Loss of electric power at a facility creates many problems. In addition to taking production equipment out of service, this situation can also take fire protection equipment out of service, such as alarms and fire pumps.

If the power outage is local and involves only one building or area at a facility, the emergency coordinator should:

1. Try to determine the duration of the outage.
2. Make sure that the problem or affected circuits are properly isolated and that repairs are under-way.
3. Determine that fire pumps, critical process equipment, and protective signaling systems receive priority treatment when planning restoration.
4. Check to be sure that all circuits are properly repaired before they are restored to service.
5. Have the power load reduced to a minimum before power is restored.

If the power outage is widespread, the emergency coordinator should:

1. Determine the magnitude of the outage and its estimated duration.
2. Make sure the operation of fire pumps or emergency generators is monitored.
3. See that areas are patrolled for security and fire surveillance.
4. Have as many circuits as possible disconnected so that the system will not overload when power is restored.

Bomb Threats

Although many bomb threats turn out to be hoaxes, the small percentage that are not could have disastrous results. Therefore, all bomb threats should be treated as though they are real. Prior to any bomb threat situation, the emergency coordinator should:

1. Contact the local police/sheriff department to determine what services are available and with their help adjust the following procedures for effectiveness.

2. Determine who will look for the bomb. Many public fire departments feel their responsibility is to stand by, should their services be needed, and do not join the search.
3. Identify likely places in which to hide a bomb. Bombs are usually placed in areas where they will be most likely to cause disruption, such as boiler rooms, electrical substations, control rooms, and computer rooms.
4. Make sure that employees are instructed to report but not handle suspicious packages, actions, or conditions.
5. Train telephone operators how to handle calls from suspected bombers. If a bomb threat is received over the telephone, the operator should:
 - A. Obtain as much information as possible from the caller. The operator should attempt to find out how many devices are involved, at what time the devices are due to explode, and the reason for the bombing.
 - B. Fill out a bomb threat checklist.
 - C. Caution caller that many innocent people may be injured.
 - D. Notify the emergency coordinator.

When an actual bomb threat has been received, the emergency coordinator should:

1. Notify local outside agencies such as police and fire departments.
2. Supervise the emergency team members in a search of all areas of the premises.

If a bomb is found, searchers should immediately notify the emergency coordinator. They should not touch the bomb. The emergency coordinator should:

1. Notify trained disposal experts.
2. Alert medical personnel to stand by.

Emergency plans for dealing with bomb threats should not be widely publicized. Only those key personnel who are assigned specific duties should be made aware of them. This will reduce the possibility of panic and confusion that could cause injury to employees.



Riot and Civil Commotion

There are many different disturbances to which a facility may be subjected, ranging from the acts of pranksters to mass armed aggression. Some of the more common causes of these disturbances are labor problems, racial tension, or public displeasure with company policy.

The emergency coordinator should try to anticipate all potential causes of civil disorder as they relate to the facility and be prepared to take appropriate action. In the event of such minor disturbances as rock throwing and other acts of localized vandalism, the steps taken should include:

1. Alerting the facility's security force.
2. Requesting special patrols from local law enforcement officials.
3. Encouraging employees and neighbors to alert the security force or local law promptly of any suspicious persons in the area.
4. Seeing that building damage is repaired promptly, since unrepaired damage could invite further vandalism.

In the event of major disturbances in which groups threaten life and property, it may be necessary to:

1. Notify local police, state police, or other law enforcement agencies.
2. Make utilities and fire protection equipment as secure as possible. Institute daily inspections to reduce the possibility of sabotage.
3. Shut down the facility. Be certain employees:
 - a. Lock up all vital information.
 - b. Secure their work areas as they would for an extended holiday.
 - c. Draw curtains on windows.
 - d. Lock their desks and doors.
4. Lock and patrol all points of entrance.
5. Make sure that employees can safely leave the facility. Escorts to cars or buses may be necessary.

Summary

A pre-emergency plan must be tailored for each individual facility. The following questionnaire (Emergency Preparedness Questionnaire) and forms (Hurricane Checklist, Hurricane Tracking Data with Map, Arctic Freeze Checklist with Cold Weather Precautions, Flood Checklist, Typical Bomb Threat Checklist with Military Ordnance Disposal Control Centers, Fire Brigade Annual Training Progress and Report of Fire Brigade Drill), should be used, along with the preceding information as a reference guide in preparing a sound and effective pre-emergency plan.

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Emergency Preparedness Questionnaire

A. Emergency Plan Organization and Communications

1. Who is delegated decision making authority?
 - a. Name
 - b. Title
 - c. Home address
 - d. Home telephone number
2. List order of delegation as indicated in plan.
 - a. Name
 - b. Title
 - c. Home address
 - d. Home telephone number
 - 1) Who is delegated authority after normal working hours and how is this person contacted?
 - 2) Is one organization functional for decision making with regard to all emergencies?
3. What are criteria for determining at the time of the emergency whether the location will be:
 - a. Operating on a normal basis (possibly with some modification to guard and protection tours)?
 - b. Operating on a limited basis (designate functions that will operate)?
 - c. Closed down and manned solely by supervisory and plant protection personnel?
 - d. Closed down and unmanned for the duration of the emergency?
4. Is there a procedure for advising employees of the decision to activate the plan?
 - a. What method is used?
 - b. Describe.
5. What is the possibility of a disaster or emergency affecting your company?
 - a. What is the geographic proximity to troubled, sensitive, or potentially hazardous areas that might cause emergencies or disasters?



- b. Is the company located in a geographic area that is particularly susceptible to weather related emergencies or disasters?
- c. What is the probability of an internal emergency or disaster?
- d. Can plant be reached by public transportation?
- 6. Have all sources of advance civil disturbance information been explored?
 - a. Local government agencies
 - 1) Name
 - 2) Title
 - 3) Agency
 - 4) Telephone number
 - b. Civil Defense
 - 1) Name
 - 2) Title
 - 3) Agency
 - 4) Telephone number
 - c. Local law enforcement and state police
 - 1) Name
 - 2) Title
 - 3) Agency
 - 4) Telephone number
 - d. Local fire department
 - 1) Name
 - 2) Title
 - 3) Agency
 - 4) Telephone number
- 7. Is location working with neighboring industry in the formation of a mutual aid?
 - a. List neighboring industry involved.
 - b. Who is the company's representative?
 - c. What significant items have developed from these discussions?

B. Security Personnel

- 1. Are all security personnel fully instructed on their responsibilities prior to, during, and after the emergency, whether it is external or internal?
 - a. Verbally?
 - b. Written instructions?
- 2. Are training sessions scheduled so that personnel will be thoroughly familiar with all safeguards and protective devices provided in the plant?
- 3. Are security personnel sufficiently equipped for self-protection?

- a. Emergency lights?
- b. Battery operated megaphones? Public address system?
- c. Transceivers (walkie-talkies)?
- d. First-aid kits?
- e. Battery powered AM/FM receiver tunable to police band?
- f. Metal helmets?
- g. Bulletproof vests?
- h. Other?
- 4. Have emergency procedures been established for both operating and non-operating hours? Do security personnel fully understand these procedures?
- 5. Can guard force be supplemented rapidly?
 - a. Guard contractors?
 - b. Other company locations?
 - c. Company management employees?
- 6. Are living arrangements and supplies available on the premises should circumstances dictate?

C. Interior Protection

- 1. Are all areas protected by automatic sprinkler systems, including outside receiving and shipping platforms?
 - a. What protection is afforded flammables?
 - b. Are flammables inaccessible from outside the building?
 - c. Are extra sprinkler heads on hand to meet any foreseeable replacement requirement?
- 2. Are control valves equipped with central station or proprietary supervision? Are these checked daily?
- 3. Is there adequate distribution of fire extinguishers and hand hoses? Are locations accessible and distinctly marked?
- 4. How are important services secured? (normal/emergency)
 - a. Electricity
 - b. Gas
 - c. Water
 - d. Steam
 - e. Chilled water
 - f. Oil
 - g. Boiler equipment
 - h. Air conditioning equipment
 - i. Switchgear and transformers



- j. Telephone equipment
- k. Vital business records
- l. Data processing and tape storage
- m. Internal communications
- n. Fire protection devices
- o. Fire pumps
- 5. Has an emergency generator been provided?
Does the generator have capacity to handle essential services?
 - a. Elevators?
 - b. Lighting (emergency)?
 - c. Fall-out shelter area?
 - d. Security systems? CCTV? Intrusion alarms?
 - e. Public address systems?
 - f. Fire alarms?
- 6. Are supplies of materials maintained on hand – plywood, lumber, and so forth – sufficient to repair broken doors, windows, roofs, and so forth?
- 7. Does location have sensitive manufacturing operations?
 - a. How would these be protected during a disorder?
 - b. Can areas be isolated?
 - c. Have plans been made to close off any area where an internal disaster has occurred?

D. Emergency Operations

- 1. Has an alternate operating location been established away from the disaster area for use by key management personnel? Where?
- 2. Has the emergency plan included diversion of incoming shipments to locations outside the disaster areas?
- 3. Has an alternate means of carrying on critical functions been established?
- 4. Has a means been established for emergency evacuations?
 - a. Have emergency routes been established for personnel access and egress?
 - b. Have designated employee entrances been established?

[illegible]



Suggested Flood Checklist

When preparing for a flood, a detailed checklist should be developed indicating the order in which processes are to be shut down and the facility secured. The length of time needed (expressed in hours or days) to accomplish these tasks should be determined in advance so that appropriate actions can be initiated at the proper time. Then, as each task is completed during either a flood watch or flood warning, check it off and move on to the next one.

| Action | | | Time Needed | | Done |
|--------|--|---|-------------|--|------|
| 1. | Shut down processes safely, and drain open tanks of flammable or combustible liquids. | | | | |
| 2. | Brace unsupported structural members at construction sites. | | | | |
| 3. | Update important back-up records, and move them to a location not vulnerable to flooding. | | | | |
| 4. | Anchor yard items that can be moved by flood waters, such as trailers, lumber, or loose yard storage. Move stored materials inside if practical. | | | | |
| 5. | Assemble the following supplies and equipment at a central, secure location: | | | | |
| | <input type="checkbox"/> Portable pumps and hose | <input type="checkbox"/> Mops and squeegees | | | |
| | <input type="checkbox"/> Emergency lighting | <input type="checkbox"/> Tarpaulins | | | |
| | <input type="checkbox"/> Lumber and nails | <input type="checkbox"/> Power and manual tools | | | |
| | <input type="checkbox"/> Sandbags | <input type="checkbox"/> Shovels and axes | | | |
| 6. | Ensure that the emergency crew remaining on the premises has the following: | | | | |
| | <input type="checkbox"/> Non-perishable food | <input type="checkbox"/> First aid equipment | | | |
| | <input type="checkbox"/> Radio receivers | <input type="checkbox"/> Stored drinking water | | | |
| | <input type="checkbox"/> Lighting | | | | |
| 7. | Fill emergency generator and fire pump fuel tanks. | | | | |
| 8. | Inspect all fire protection equipment to be sure it is in service. | | | | |
| 9. | Check travel brakes on movable cranes and bridges. Anchor them in accordance with the manufacturers' out of service instructions. | | | | |
| 10. | Place sandbags at vulnerable openings. Divert water from critical areas such as holes in foundations, doorways, and sills. | | | | |



| Action | | | Time Needed | | Done |
|--------|---|--|-------------|--|------|
| 11. | Move important machinery, stock, and reports to higher elevations. By knowing the past flooding history of the area, reasonably safe areas can be selected. | | | | |
| 12. | Shut off all flammable and combustible liquid lines at their source to prevent the discharge of such liquids from piping broken by floating debris. Support exposed piping properly. | | | | |
| 13. | Make sure above and below ground tanks are properly anchored to prevent flotation. Fill empty tanks with water or product, and extend vent lines on active tanks above the anticipated maximum water level. | | | | |
| 14. | Lash down portable containers of flammable or combustible liquids. | | | | |
| 15. | Shut off electrical power at the main building. Disconnect when that building is in imminent danger of flooding. | | | | |
| 16. | Install flood doors/covers. | | | | |



Suggested Hurricane Checklist

When planning for hurricanes, a detailed checklist should be developed indicating the order in which processes are to be shut down and the facility secured. The length of time needed (expressed in hours or days) to accomplish these tasks should be determined in advance so that appropriate actions can be initiated at the proper time. Then, as each task is completed during either a hurricane watch or hurricane warning, check it off and move on to the next one.

| Action | | | Time Needed | | Done |
|--------|---|----------------------------|-------------|--|------|
| 1. | Shut down processes safely. | | | | |
| 2. | Inspect roof edging strips, gutters, flashing, covering, and drains. | | | | |
| 3. | Inspect sign and stack supports, guy wires, and anchorages. | | | | |
| 4. | Check for weak door and window latches or hardware or for insecure panel fastenings. Expedite repairs. | | | | |
| 5. | Protect vulnerable windows from flying debris. | | | | |
| 6. | Brace unsupported structural members at construction sites. | | | | |
| 7. | Protect important records from wind, debris, and rain. | | | | |
| 8. | Update important back-up records, and move them to a location not vulnerable to the same incident. | | | | |
| 9. | Fill above ground tanks to capacity with product or water to minimize wind damage. | | | | |
| 10. | Anchor structures in the yard that can be moved by high winds, such as trailers, lumber, or any loose yard storage. Move stored materials inside where practical. | | | | |
| 11. | Assemble the following supplies and equipment at a central, secure location: | | | | |
| | ___ Emergency lighting | ___ Caulking compound | | | |
| | ___ Lumber and nails | ___ Tarpaulins | | | |
| | ___ Tape for windows | ___ Power and manual tools | | | |
| | ___ Sandbags | ___ Shovels and axes | | | |
| | ___ Roofing paper | ___ Chain saws | | | |
| 12. | Ensure that the emergency crew remaining on the premises has the following: | | | | |
| | ___ Non-perishable food | ___ Radio receivers | | | |
| | ___ First aid equipment | ___ Stored drinking water | | | |
| | ___ Lighting | | | | |



| Action | | | Time Needed | | Done |
|--|--|--|-------------|--|------|
| 13. | Fill emergency generator and fire pump fuel tanks. | | | | |
| 14. | Inspect all fire protection equipment to be sure it is in service. | | | | |
| 15. | Take extraordinary measures to secure outdoor traveling cranes and bridges. Besides setting rail clamps, secure with wedges and cable anchors. | | | | |
| 16. | Clean out drains and catch basins. | | | | |
| 17. | Be sure to prepare the Flood Checklist as well as the Hurricane Checklist. | | | | |
| Add other items unique to your facility. | | | | | |

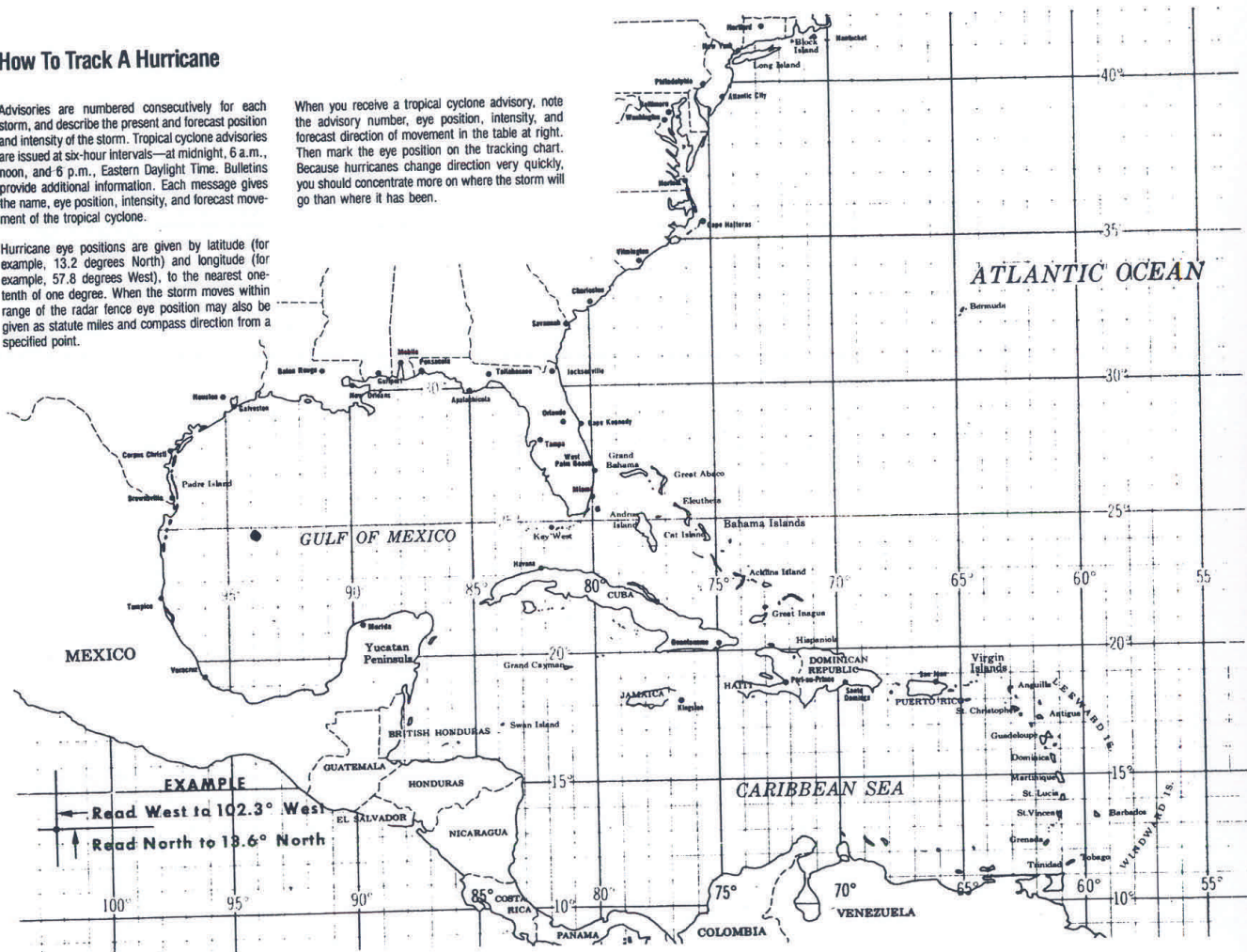
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How To Track A Hurricane

Advisories are numbered consecutively for each storm, and describe the present and forecast position and intensity of the storm. Tropical cyclone advisories are issued at six-hour intervals—at midnight, 6 a.m., noon, and 6 p.m., Eastern Daylight Time. Bulletins provide additional information. Each message gives the name, eye position, intensity, and forecast movement of the tropical cyclone.

Hurricane eye positions are given by latitude (for example, 13.2 degrees North) and longitude (for example, 57.8 degrees West), to the nearest one-tenth of one degree. When the storm moves within range of the radar fence eye position may also be given as statute miles and compass direction from a specified point.

When you receive a tropical cyclone advisory, note the advisory number, eye position, intensity, and forecast direction of movement in the table at right. Then mark the eye position on the tracking chart. Because hurricanes change direction very quickly, you should concentrate more on where the storm will go than where it has been.





Suggested Arctic Freeze Checklist With Cold Weather Precautions

When preparing for an Arctic Freeze, a detailed checklist should be developed indicating the order in which processes are to be shut down and the facility secured. The length of time needed (expressed in hours or days) to accomplish these tasks should be determined in advance so that appropriate actions can be initiated at the proper time. Then, as each task is completed during either a winter watch or storm warning, check it off and move on to the next one.

| Action | | | Time Needed | | Done |
|--|--|--|-------------|--|------|
| 1. | Restore any cut back of heat to buildings or processes. | | | | |
| 2. | Provide additional heat for normally cold areas. | | | | |
| 3. | Make certain there is an adequate supply of fuel for the heating systems. | | | | |
| 4. | Expedite the completion of any postponed repairs to the heating system. | | | | |
| 5. | Forgo any planned heating plant or boiler inspections until the danger of the severe cold has passed. | | | | |
| 6. | Keep someone on the premises who will continually monitor all areas of the premises for signs of impending trouble, and provide that person with an up-to-date list of emergency numbers to call should trouble be detected. | | | | |
| 7. | Add heat tracing to process protective system piping that might freeze. | | | | |
| 8. | Check insulation on piping and structures to be certain it will protect them against the extreme cold temperatures. | | | | |
| 9. | Where processes are shut down, drain piping and tanks to prevent freezing damage. | | | | |
| 10. | Recheck the Cold Weather Precautions listed on this form. | | | | |
| Add other items unique to your facility. | | | | | |



Cold Weather Precautions

Unless proper precautions are taken, cold weather can cause problems. Buildings may be loaded beyond their design by accumulations of snow and ice. Fire protection equipment may freeze, leaving a major portion of the facility without protection.

Prior to and during cold weather, the following precautions should be taken.

A. General

1. Plan should be made to remove snow from flat roofs or other structures which might collapse.
2. All doors, windows, skylights, ventilators, and other openings should be weather-tight so they will not admit cold air that could cause sprinkler systems to freeze.

B. Heating Systems

1. To determine that the entire system is in proper operating condition, it should be examined and deficiencies corrected. Burners, boilers, and flues should be clean. Obstructions should be removed from all pipes, radiators, and unit heaters. Controls of heating equipment should be tested for proper operation.
2. Where possible, an adequate reserve supply of fuel should be on hand at all times. Safe alternate energy sources should be investigated.
3. Temperatures about 40°F must be maintained at all times in buildings equipped with wet pipe sprinkler systems; in all dry pipe, pre-action, and deluge valve closets; and in all pump houses.
4. Clearances should be maintained between heating system components and combustible floors, walls, partitions, platforms and stock.

C. Protective Systems

Some of the following maintenance procedures involve valve operation or other impairments to protective systems. Proper procedures should be followed in all such cases (see Section 1, Impairments to Protective Systems).

1. Plans should be made to promptly clear snow from access ways, control valves, hydrants, hose cabinets, smoke and heat vents, explosion relief vents, and other essential equipment to permit effective operations in the event of an emergency.
2. Wet pipe sprinkler systems in areas which are inadequately heated should be converted to dry pipe or pre-action systems.
3. Dry pipe sprinkler systems should be inspected carefully to make sure that the piping is properly pitched for drainage. Any condensation that collects in low points in the piping should be removed. Excessive priming water should also be removed.
4. Sprinkler heads in the immediate vicinity of steam pipes, unit heaters, or other heat-producing appliances should be of the correct temperature rating.
5. Solutions in all anti-freeze sprinkler systems should be tested and anti-freeze added, as necessary.
6. Any "shut-in-winter" valves controlling small unheated areas should be closed, tagged, and properly drained. Consideration should be given to converting such systems to either a dry pipe or a pre-action system.
7. All wet standpipe systems with piping located in areas subject to freezing should be shut off, drained and tagged.
8. Connections to water motor gongs and fire department connections should be properly drained.

D. Fire Protection Water Tanks

1. Gravity tanks must not leak, since an accumulation of ice on trestles can cause the tank structure to collapse. The expansion joint and riser boxing should be in good condition.
2. The water temperature in the gravity tank should be checked frequently during cold weather and maintained at no less than 42°F.
3. The tank heating system should be flushed and put in good working order.
4. The tank roof hatch cover should fit tightly and be fastened.

**E. Hydrants and Underground Piping**

1. Hydrants and fire pump hose headers should be drained. Outlet hose valves must be left half open to prevent damage from freezing.
2. Hoses should be properly drained and dried.
3. Packing on post indicator valves should not be leaking.
4. Sections of exposed piping should be drained or otherwise protected against freezing.
5. Valve and meter pits should be dry and frost proof.

F. Portable and Wheeled Fire Extinguishers located in cold areas should be suitable for such locations or installed in heated cabinets.

G. Automotive Fire Apparatus should be properly serviced for cold weather.



Typical Bomb Threat Checklist

Instructions: Listen, Do Not Interrupt The Caller

| Name of Operator | | | Time | Date | |
|--|---|--|--|---|--|
| Caller's Identity | | | Origin of Call | | |
| Male Female | | | Local | Long Distance | Booth |
| Approximate Age (Years): | | | Internal (From Within Building) If internal, leave plug in board. | | |
| Voice Characteristics | Speech | Language | Accent | Manner | Background Noises |
| <input type="checkbox"/> Local <input type="checkbox"/> High Pitch <input type="checkbox"/> Raspy <input type="checkbox"/> Intoxicated <input type="checkbox"/> Soft <input type="checkbox"/> Deep <input type="checkbox"/> Pleasant <input type="checkbox"/> Other _____ _____ _____ _____ _____ _____ | <input type="checkbox"/> Fast <input type="checkbox"/> Distinct <input type="checkbox"/> Stutter <input type="checkbox"/> Slurred <input type="checkbox"/> Slow <input type="checkbox"/> Distorted <input type="checkbox"/> Nasal <input type="checkbox"/> Other _____ _____ _____ _____ _____ _____ | <input type="checkbox"/> Excellent <input type="checkbox"/> Fair <input type="checkbox"/> Foul <input type="checkbox"/> Good <input type="checkbox"/> Poor <input type="checkbox"/> Other _____ _____ _____ _____ _____ _____ | <input type="checkbox"/> Local <input type="checkbox"/> Foreign <input type="checkbox"/> Race <input type="checkbox"/> Not Local <input type="checkbox"/> Caucasian <input type="checkbox"/> Region <input type="checkbox"/> Other _____ _____ _____ _____ _____ _____ | <input type="checkbox"/> Calm <input type="checkbox"/> Rational <input type="checkbox"/> Coherent <input type="checkbox"/> Deliberate <input type="checkbox"/> Righteous <input type="checkbox"/> Righteous <input type="checkbox"/> Angry <input type="checkbox"/> Irrational <input type="checkbox"/> Incoherent <input type="checkbox"/> Emotional <input type="checkbox"/> Laughing <input type="checkbox"/> Other _____ _____ _____ _____ _____ _____ | <input type="checkbox"/> Office Mach. <input type="checkbox"/> Factory Mach. <input type="checkbox"/> Bedlam <input type="checkbox"/> Animals <input type="checkbox"/> Quiet <input type="checkbox"/> Mixed <input type="checkbox"/> Street Traffic <input type="checkbox"/> Airplanes <input type="checkbox"/> Party Atmos. <input type="checkbox"/> Trains <input type="checkbox"/> Music <input type="checkbox"/> Voices _____ _____ _____ _____ _____ _____ |

Bomb Facts

Keep the caller talking. If the caller seems agreeable to further conversation, ask questions like:

When will it go off? Certain Hour _____ Time Remaining _____

Where is it planted? Building: _____ Area: _____

What kind of bomb? Where are you now? How do you know so much about the bomb? What is your name and address? Hold on line while you notify supervisor listed below.

Did the caller appear familiar with plant or building by his description of the bomb location? Write out the message in its entirety and any other comments on reverse side.

Action to Take Immediately After Call

Notify following persons in order given.

| | |
|------|--------------|
| Name | Phone Number |
| Name | Phone Number |
| Name | Phone Number |