# Richmond Business Emergency Operations Planning Guidelines

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BUSINESS PLAN

FOREWORD

Business and industrial preparedness is essential for peacetime safety and for the security of the Nation. This publication is designed to provide guidance for business and industry officials in the development of plans and capabilities to respond to and recover from disasters.

Business and industry share with the government responsibility for protecting lives and property. Preparedness helps avoid or minimize loss of lives and property and can help assure continuity of production which is so important to the recovery of an area after a disaster, or to this country if the national security is threatened. This guide supersedes the Disaster Planning Guide for Business and Industry, CPG 2-5, dated July 1978.

Every business and industrial facility should be prepared to cope with the hazards and disasters of today's complex world. Storms, fires, explosions, sabotage, civil disturbances, and possible nuclear attack all pose continuing threats.

Business and industry emergency planning should be coordinated with their local emergency management agency. In the City of Richmond it is the Fire Department Office of Emergency Services. This assures coordinated and standardized efforts, and provisions for the fullest use of community resources as needed.

Planning and preparedness measures taken to protect company employees and property, as well as those of its neighbors, should lessen the company's legal liability, as well as reduce insurance costs. It is imperative that the City of Richmond and local business and industry plan now - to survive - as well as recover effectively and efficiently from the next major disaster, together.

Mutual assistance agreements with other business or industrial facilities provide a means to ensure that additional resources will be available for use in emergencies. These are the basic keys to community preparedness. Every business and industrial facility should be prepared to endure the hazards and disasters of today's world. Major aircraft crashes, earthquakes, fires, severe storms, hazardous materials releases, and more can cause major interruption in your business.

Business and industry share with the Federal, State and Local levels of government the inherent responsibility of protecting life, property and the environment. These responsibilities include providing for the safety of company personnel, preserving facilities and equipment, protecting the public from on-site incidents that affect the health and safety of the community, and contributing to the overall level of community
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emergency preparedness. Your business plan should consider:

- Employee safety & basic survival
- Emergency Operating procedures
- Emergency Financial procedures
- Emergency Data Processing systems procedures
- Emergency procedures for storing, securing & retrieval of records
- Emergency Communications systems
- Emergency Transportation systems
- Alternate office facilities
- Procedures for working with local government

Your Business Plan will define actions to be taken to protect your business, as well as the community, during a disaster. It will, just as the City’s EOP (Emergency Operations Plan), identify hazards that may impact your business, the overall emergency organization, responsibilities to be carried out by specific individuals, and checklists for each individual. Documents, emergency forms, emergency call in procedures/memo, inventory list, and more can be added.

In the City of Richmond the major hazard/threat is a major earthquake on the Hayward Fault line. After a major earthquake on the Hayward fault, we know that transportation routes will be shut down; I-80 at San Pablo Dam Road, Interstate 580 east of Oakland, Highway 4 between Hercules and Pittsburgh, Highway 13 and Highway 24 west of the Caldecott Tunnel. Bridges and other highway overpasses may also be down, at least temporarily.

Small companies may not need, or have the resources to develop, a complete EOP (Emergency Operations Plan), and may want to write an EAC (Emergency Action Checklist). Large Companies (500 employees) who do not possess sufficient emergency response capability (fire, medical, security), may also opt for the EAC. One major consideration in both these options is to coordinate your efforts with the Richmond Fire Department’s Office of Emergency Services, for a coordinated effort. Your emergency plan should cover all four phases of emergency management; Mitigation, Preparedness, Response and Recovery.

The objective of this plan is to coordinate local business’ of the City of Richmond, into a standardized method of planning for and responding to disasters in the most efficient and effective manner. This Business EOP Planning Guideline has been developed for you to help streamline your planning process. If you have any questions or concerns, please contact:

City of Richmond Fire Department
Office of Emergency Services
1401 Marina Way South, Richmond, Ca. 94804

Phone: (510) 620-6866 or Fax (510) 307-8048
CHAPTER 1

Introduction to Planning

Local Business and industry share with the Federal, State, and levels of government responsibilities for helping to protect people in the United States from the hazards associated with natural disasters, technological accidents, and nuclear attack. These responsibilities include providing for the safety of company personnel, preserving facilities and equipment, protecting the public from on-site incidents that affect the health and safety of the community, and contributing to overall community emergency preparedness.

At the Federal level of government, the Federal Emergency Management Agency (FEMA) provides guidance and funding to assist State and local governments to secure personnel, prepare emergency operations plans, develop a direction and control capability including emergency operating centers and communications/warning systems, and pay a part of the salaries and expenses of State and local emergency management staffs. State and local governments have the primary responsibility for accomplishing the necessary planning and for developing a response capability for the full range of emergencies that the community may face. Whatever the extent of the destruction caused by any of these disaster situations, State and local governments must plan to bring their full resources to bear effectively to cope with such contingencies. They must do whatever they can to save lives, to reduce suffering and loss of property, and to provide an improved basis for recovery from the emergency. A vital part of each jurisdiction's planning effort is keeping the private sector informed about likely hazards and the protective actions that can be taken.

The Importance of Planning

There is an old saying that an ounce of prevention is worth a pound of cure. This is a very appropriate adage for many aspects of life, including emergency management. Without a current emergency operations plan (E.O.P.) that details the who, what, when, and where, complemented by standard operating procedures for coping with emergency situations, the capability to respond and recover from an emergency could be seriously impaired.

There are numerous reasons to plan for the inevitable emergencies and disasters that private companies and communities face. Listed below are a few of the most important reasons:

1. Time and time again it has been demonstrated that the emergency planning objectives of saving lives and protecting property are achieved through coordinated emergency response operations. History has shown that, when a plan
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exists and people are familiar with it, reaction times are reduced and coordination is improved.

2. A plan provides the business or the jurisdiction with a tool to establish formal coordination with other jurisdictions, volunteer groups, and private entities. This is done instead of assuming assistance that may or may not be available when the need arises.

3. A plan provides a valuable training tool for educating new executives, officials, and employees. As turnover occurs, the indoctrination period is reduced when a plan exists.

4. A plan provides a springboard for exercising your level of preparedness.

5. A plan provides a framework for responding in any emergency situation whether anticipated or unanticipated.

Definition of an Emergency Operations Plan (EOP) for Local Government

An EOP is a document that describes actions to be taken by government and others to protect citizens from the threat of natural and technological hazards, including the effects of nuclear war. It details the functions that are to be carried out by specified organizational elements at projected places and times based on established objectives, assumptions, and a realistic assessment of capabilities. It is a plan that treats multi hazard emergency operations activities generically. It provides general information in each functional annex without reference to any particular hazard and then addresses the unique aspects of the individual disaster agents, thoroughly but compactly, in hazard specific appendices to the functional annex (es). The EOP covers the use of evacuation and shelter in-place instructions to protect the population. It identifies resources and provides a system to ensure the orderly use of those resources under extraordinary conditions.

Plan Content

EOP's address all hazards to which the communities covered are particularly vulnerable and contain provisions to accomplish the following:

1. Declare the purpose of the plan and, in more specific terms, the purpose of each plan element.

2. Describe the situations and the general environment that would establish likely conditions for activation of the emergency organization to carry out operations under the plan. This description should reflect the findings detailed in the hazards identification process.

Richmond Fire OES Business Plan Guideline 2009
3. State assumptions adopted during the planning process which may significantly impact emergency operations.

4. Present the jurisdiction's concept of emergency operations, carefully describing relationships with other governmental units at the same level and at lower and higher levels. Describe the process of coordination, and clearly set guidelines for establishing and maintaining direction and control. Cover the approach for ensuring overall continuity of government (COG) operations in the jurisdiction; and, in the appropriate parts of the plan, address all seven COG measures: (a) succession to office; (b) pre-delegation of emergency authority; (c) emergency action steps; (d) emergency operating centers; (e) alternate emergency operating centers; (f) safeguarding essential records; and (g) protection of government resources, facilities, and personnel.

5. Portray the jurisdiction's organization for large-scale disaster operations, compare it to the normal organization, and make provisions for timely and orderly activation of the emergency organization. Provide clear statements of the roles to be played by elements of the normal organization in the emergency organization.

6. Explain how emergency operations are to be logistically supported. Describe the communications systems and procedures that will be relied upon to alert and direct emergency response forces receive and disseminate warning, request aid from other jurisdictions or levels of government, receive requests for aid from other jurisdictions, and report to higher echelons of government.

7. Describe how emergency response forces will be used to protect citizens and property when it is necessary to respond to, contain (if possible), and recover from disasters. Ascertain direction and control relationships, means for alerting response forces, warning of the public, recovery procedures, and use of emergency facilities and personnel to provide the direction and control needed for each disaster response operation.

8. Describe how the firefighting, police, public works, emergency medical, emergency management, and private and volunteer agencies function during emergency and disaster situations. These organizations collectively perform the services that allow the jurisdiction to respond to and recover from disasters.

9. Detail procedures necessary to ensure safe and orderly evacuation of the citizens in hazard areas. The fundamental assumption for this part of the plan is that sufficient warning time will be available to evacuate the threatened population. Given the variability in the types of hazards and in the sizes and populations of areas that might be threatened, planning must provide a range of evacuation options for selection and implementation by decision makers.
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10. Outline those provisions that have been made for the coordination and dissemination of emergency public information and education materials to the general public by the mass media during a situation that warrants notification of all or most of the community's population.

11. Address actions to protect the population from the hazards associated with terrorist attack, natural disasters, and technological hazards. Shelter considerations include protective measures, care for evacuees, and care for those people who must rely on in-place sheltering because of time or circumstances.

12. Outline provisions for people with disabilities and the elderly "special-needs" evacuees, such as residents of nursing homes or mental hospitals.

The Planning Role

Just as government has a responsibility to plan to protect people, the owners of business and industry have a vested interest in protecting their employees, equipment, supplies, and facilities and neighboring businesses and residents from disaster events that threaten them. Since State and local governments develop EOP'S what planning tool should business and industry develops? Large companies that have been designated as key national defense industries and those with 500 or more employees that have a medical, fire, and security resource capability should consider developing an EOP similar to the one described for local government. Companies that do not possess sufficient emergency response capability (fire, medical, security, etc.) should consider preparing an Emergency Action Checklist (EAC).

The EAC would contain the procedures and provisions the company would rely upon to protect employees and other company resources during disaster situations. The EAC tells how the company will accomplish the necessary actions to protect employees, equipment, supplies, and facilities. It includes emergency phone numbers, call down rosters, resources listings, maps, and charts, etc. The checklist provides step-by-step procedures for cooperation with local authorities to (1) notify/warn all employees (at work and at home), (2) evacuate employees from company facilities, (3) provide employees shelter (on company property or in public shelter), (4) obtain and use company equipment and supplies (vehicles, lumber, shovels, etc.) to protect employees and facilities from hazards, (5) obtain mutual aid from other companies, (6) report situations and request assistance from civil authorities, (7) communicate with employees who are working at different (physically separated) company facilities.

Planning Responsibilities

In government, the State or local emergency manager is responsible for serving as a focal point and for taking the lead to ensure that a viable EOP is developed and maintained. In the private sector, top-level management should make a firm commitment to develop a
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written EOP/EAC by a prescribed date and assure that it is reviewed and updated on a periodic basis. They should select an individual to take the lead responsibility for directing the planning, developing the plan or action checklist, and coordinating the plan with local authorities. Small companies may assign the planning task to an individual on a part-time basis, while larger companies may choose to appoint a committee to perform the job. Emergency planning is a job that requires dedicated people committed to the principle that preparedness is an essential management responsibility. Planners should be interested and knowledgeable about the company, the process, and the employees. Also, since planning requires close coordination with and assistance from all departments of the company, a member of the top management should be actively involved in the planning process to assure cooperation among the various elements of the organization.

The planning and preparedness measures taken to protect company employees and property as well as those of its neighbors should lessen the company's legal liability. Such measures may also reduce insurance costs.

The Planning Process

The first step is to establish a working relationship with the local emergency management officials. Find out what the local disaster threats are and what the community is doing to prepare itself. Once this first step is taken, the following planning process steps are recommended:

1. Research.

Establish the situation base under which planning is to be accomplished. You cannot plan in a vacuum but must develop an in-depth knowledge of your community and company facilities prior to actual plan development. This is accomplished through collecting, analyzing, and applying data.

a. Review of Existing Plans and Procedures. Before doing any planning, review existing plans, action checklists, vulnerability analysis, etc., to determine where there are deficiencies if any. There is no need to reinvent the wheel. If existing EOP's and/or EAC's are adequate and sufficient, then the planning task will merely involve an update.

b. Vulnerability Analysis. The emergency operations plan or emergency action checklist must be responsive to the hazards which may threaten the company. It is not sufficient to merely identify the hazards; you also should analyze the potential impact of these hazards on the company. During the research phase, the planner may find it necessary to expand on any existing vulnerability analysis (new risks) or even conduct a detailed initial analysis.

c. Identification of Existing Resources. A compilation of the resources (other equipment and workers) that the company has for meeting emergency situations requirements will give the planner a basis from which to develop operational concepts.

Richmond Fire OES Business Plan Guideline 2009
d. **Capability Assessment.** Assess the company's capability to adequately protect the employees and equipment by measuring available resources and levels of training and disaster response experience against the potential needs as determined by the vulnerability analysis. Also, examine resource shortfalls.

2. **The Planning Environment.** This involves a number of areas.

   a. **Demographics.** How many employees does the company have? How many company operating locations? What kind of access does the company have to the public transportation network? What kind of barriers (rivers, snow, etc.) could impact on employee movement to/from the work location?

   b. **Resource Requirements.** Examine resource deficiencies (people, equipment, existing plans), and identify areas (financing, warning systems, plan/EAC changes, etc.) which should be upgraded or changed to fit emergency response needs.

3. **Plan Development.** With a solid base of information upon which to work, The individuals) responsible for emergency planning should be ready to begin plan (EOP/EAC) development. Much of the information will be applied during the development process as each part of the EOP or EAC is prepared. But even before putting down the first word, the planner will have a pretty good idea of many of the specific activities that will need to be addressed and should have a sound concept of the procedures that need to be developed to protect employees (warning/evacuation/sheltering), equipment (securing and dispersal), and facilities (taping/boarding of windows, sandbagging entrances, shutting down production, etc.) from the hazards that may threaten the company. Further, EOP/EAC development should rely upon a team approach. That is: key service, department, and organization chiefs should be involved. The method you choose for plan development should fit the needs of your company. Once you have completed the first draft of the EOP or EAC, coordinate it with each division and department in the company. Also, ask the local government's emergency program manager to review it. Possibly the most important and most often overlooked task associated with the plan development is coordination. Coordination implies cooperation and a willingness to share responsibility and a desire to solicit the input and constructive criticism of others. It provides a means to eliminate duplication of efforts, offers a means to control scarce resources, and enhances the overall planning process. Seek criticism and comment. Finalize the plan/checklist based on the input received.

Print and distribute the EOP or EAC in sufficient numbers to meet the needs of the company. Also, provide copies to the local emergency management agency and, where appropriate, to the local service agencies, i.e., police, fire, public works, etc. Review/update it annually or as major changes occur (call down list and additions or deletions, company reorganization, new/lost resources, employee working hours, etc.). Always coordinate proposed changes to the EOP or EAC with every affected division, department, and operational location.
4. **Mitigation Planning.** Although this guide concentrates on preparedness and response considerations, the importance of mitigation should not be overlooked. Mitigation efforts represent an integral and vital element of a company's overall emergency management effort. Accordingly, a mitigation plan should be developed for taking permanent countermeasure actions to mitigate against the effects of specific hazards. For example, appropriate countermeasures may require upgrading existing facilities and designing mitigation factors into new buildings, at modest additional cost, to protect against collapse and earthquakes, tornado-force winds, or nuclear blast. Waterproofing buildings or construction levees will provide mitigation from flooding and water damage. Fire-resistant building materials and furnishings, as well as sprinkler systems, will lessen fire hazards. In earthquake-prone areas, secured furniture, filing cabinets, and computer terminals will prevent injury to employees. These and other mitigation measures will help to save lives and protect property and will basically reduce some emergency response activities when a disaster event happens.
CHAPTER 2

Are You Ready for Disaster?

Is your facility (plant, shop, office building, bank, or institution) ready for disaster? How should you prepare? What kind of disasters might occur? Floods? Hurricanes? Explosions? Nuclear attack? These are only a few of the questions which must be answered in order to develop and implement an effective plan to cope with such disasters.

This guidance is applicable for large industrial facilities, as well as smaller businesses such as dry cleaning plants, automobile service and dealer facilities, etc. The term "facility" used throughout this guidance, applies to all types and sizes of businesses and industries.

Vulnerability Analysis

Any plant or facility is vulnerable to some extent. Analysis of vulnerability to particular hazards can provide the basis for developing a practical, workable emergency operations plan or checklist along with appropriate standing operating procedures. (See chapter 3.) A local vulnerability analysis (Hazard Identification) should be a matter of record at the city or county level emergency management organization. There has been considerable effort at the Federal and State levels to identify hazards such as earthquake, hurricane, and dam failure. Check with all of these sources, and obtain a copy of the government-perceived threat in your locale to help you conduct an on-site vulnerability analysis of your facility.

In analyzing and assessing the vulnerability of individual facilities, you must consider environmental, indigenous, and economic factors. These are bases for:

1. Estimating the likelihood of damage, either by direct effects or by indirect effects resulting from dependency on a facility damaged elsewhere;

2. Making plans for protective measures within individual facilities or complexes of facilities to minimize damage and casualties; and

3. Reviewing insurance policies for liability and coverage.

As an example of an environmental factor in determining vulnerability, an industrial facility may be endangered because of proximity to: a flood plain; other businesses and industries that manufacture, store, or transport toxic industrial chemicals; or likely nuclear target facilities (ports, military bases and national defense industries).

Industrial or business facilities also may be vulnerable due to indigenous factors,
lightweight construction, processes of materials which in themselves would be hazards or which might generate hazardous by-products, stored combustibles such as lumber, floor layout and arrangements such as crowding of equipment, critical equipment such as machine tools, inadequate exits for rapid clearance of buildings, lack of shelter areas, and limited evacuation routes.

Economic factors include criticality of product, exclusiveness of product (where an industrial plant is the only one of its kind), and/or stockpiled or reserve materials.

Specific Hazards

For planning purposes, you must assume that most disasters considered likely will arrive with very little warning, have a rapid development, and have a potential for substantial destruction. The likelihood that the kinds of disaster events cited in this chapter would ever strike your company may be very small; but you should have the capability to react, cope with, and recover from any emergency situations that could occur at your location. The following discussion of specific hazards also includes some survival tips for protecting people, equipment, and other company property from the direct effects of these hazards.
Earthquakes

Although many earth scientists are searching for means of predicting impending earthquakes, accurate predictions of the exact time and place of earthquakes are not yet possible. However, it can be assumed that earthquakes will continue to occur most of the time in areas where they have been relatively common in the past. They may range in intensity from slight tremors to great shocks and may last from a few seconds to as much as 5 minutes. They could come in a series over a period of several days. The actual movement of the ground in an earthquake is seldom the direct cause of injury or death. Most casualties result from falling materials. Severe quakes usually destroy power and telephone lines and gas, sewer, or water mains. They may also trigger landslides, rupture dams, and generate seismic waves (tsunamis).

During the shaking, warn employees to (1) stay indoors if already there; (2) take cover under sturdy furniture such as work tables, brace themselves in a doorway, or move into a corner and protect the head and neck in any way possible; (3) stay near the center of the building; (4) stay away from glass windows, skylights, and doors; and (5) not run through or near buildings where there is danger of falling debris. If employees are outside, they should stay in the open, away from buildings and utility wires. After the shaking, employees should exit the building by the stairs, never the elevators. They should stay out of damaged buildings; the after shock can shake them down. Company officials should check utilities. If water pipes are damaged or electrical wires are shorting, turn them off at the primary control point. If gas leakage is detected, shut off the main valve, open windows, an keep the building cleared until utility officials say it is safe. At some facilities, shutdown of high voltage and fuel systems is necessary immediately following earthquake damage and before evacuation so personnel will not be endangered by lines that might be ruptured. In other plants, evacuation might not be jeopardized, but recovery operations might unless shutdown were completed beforehand.

There are several publications available which may be helpful in company planning efforts to deal with earthquake emergencies.

1. Federal Emergency Management Agency guidance includes: Comprehensive Earthquake Preparedness Planning Guidelines:

   Corporate, FEMA 71, provides information for establishing a corporate earthquake preparedness planning process and sets forth action items with guidance on each task and support assignment for emergency response, corporate recovery, and earthquake preparedness.

   Guidelines for Local Small Businesses in Meeting the Earthquake Threat, FEMA 87, advises businesses with 50 to 100 employees how to perform risk and needs assessments and identifies actions to protect employees, communications systems, and critical resources.
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Preparedness for People with Disabilities, FEMA 75 (brochure), describes earthquake protection measures for the disabled.

Preparedness in High-Rise Buildings, FEMA 76 (brochure), explains steps for high-rise occupants to take for earthquake protection.

Address: FEMA
P.O. Box 70274
Washington, DC 20024

2. Utility Company Planning Guidelines lists response activities for long and short-term prediction, response, and recovery relating to utility management, employees, company buildings, critical resources, communications systems, and coordination with other utilities and government agencies.

Address: Southern California Earthquake Preparedness Project
6850 Van Nuys Boulevard, Suite 110
Van Nuys, CA 91405

3. A Management Guide to a Comprehensive Earthquake Preparedness Plan addresses insurance company employee safety at the office and home and protection of office facilities, operations, and other assets.

Address: Insurance Information Institute
400 Montgomery Street
San Francisco, CA 94104

If you have any questions or would like help in creating a business plan for your business, please call Kathryn Gerk, CEM®, Richmond Fire Department Office of Emergency Services at (510) 620-6866 or email at kathy_gerk@cormail.ci.richmond.ca.us.
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**Hurricanes**

The National Weather Service is responsible for issuing warnings when hurricanes appear to be a threat to the United States mainland, Puerto Rico, the Virgin Islands, Hawaii, and the Pacific Territories. As soon as conditions intensify to the tropical storm level—even though it is a thousand miles or more from the mainland, the storm is given a name; and the Weather Service begins issuing advisories. The advisories are issued every 6 hours when a hurricane is more than 24 hours away from land and every 3 hours or less when it is closer. They tell where the storm is located, the intensity of its winds, and the speed and direction of movement.

If a hurricane moves toward the mainland, hurricane watch notices are given. A HURRICANE WATCH indicates that (1) the hurricane is a threat to coastal areas, and that (2) everyone in the area covered by the watch should listen for further advisories and be ready to take precautionary actions including evacuation if directed.

As soon as the forecaster determines that a particular section of the coast will feel the full effects of a hurricane within 24 hours, a hurricane warning is issued. HURRICANE WARNINGS specify coastal areas where winds of 74 mph or higher or a combination of dangerously high water and very rough seas are expected. TROPICAL STORM WARNINGS are also issued for those areas that are expected to receive galeforce winds (greater than 40 mph).

At the beginning of the hurricane season (late May or early June), take pre-storm actions. Check all drainage pumps, battery-powered equipment, and backup power sources. Ensure that sewers and drains for flood water removal are in working order. Brace storage tanks and all outer structures that may be vulnerable to high winds. Keep company vehicles fueled. When the warning is issued, immediately take all precautions against the full force of the wind. Board up windows or protect them with tape. Secure all outdoor equipment. Store drinking water for post hurricane operations. Listen for local emergency weather advisories or special instructions from local government before, during, and after the storm. Prepare to evacuate if the order comes. Be alert for tornado warnings, as hurricanes often spawn tornadoes. Since some industries may require 1 to 3 days to prepare (petrochemical manufacturers, offshore oil drill rigs, etc.), carefully planned procedures will need to be enacted as soon as advisories indicate a hurricane may affect facilities in this category.

The local office of the National Weather Service will provide all severe storm data following a general storm warning, including tornadoes and hurricanes. The Latest Forecast lines for the local office should be listed under the Department of Commerce in the U.S. Government listings in the local telephone book. These lines are frequently answered 24 hours a day. There will be a regularly updated taped forecast, or in some
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cases, an individual will answer questions. The National Oceanic and Atmospheric Administration provides hurricane forecast information on telephone number 1-900-410-NOAA for the U.S. mainland, and 1-900-410-KANE for Hawaii.

Stay indoors during the hurricane. After the storm, turn off all damaged utilities at central control points and report problems to the appropriate utility services. Avoid loose or dangling wires and check for gas leaks or hazardous materials release. Take special precautions to prevent fires because lowered water pressure would make firefighting difficult. Take caution to avoid contaminated drinking water.
Preseason Storm Preparedness Measures

For those areas that experience seasonal storms such as hurricanes, tornadoes, heavy snow or icing conditions, and flooding, make the following preseason preparations as appropriate to the size of your facility:

1. Contact your local government or the National Weather Service and learn winter storm warnings that pertain to your areas.

2. Inform employees of storm safety rules.

3. Establish a system for early release from work and "employee-stay-home" announcements.

4. Designate flood/hurricane evacuation and snow emergency routes and place identifying signs within the yard areas of the company facilities.

5. Determine location and amounts available of sand bags, pumps, emergency generators, snow fencing, sand, and salt. Obtain and position supplies as required.

6. Organize mobile emergency rescue and medical teams if these would be useful in your area.
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Tornadoes

Tornadoes are violent local storms with whirling winds of tremendous speed that can reach 200-400 mph. The individual tornado appears as a rotating, funnel-shaped cloud which extends toward the ground from the base of a thundercloud. It varies from gray to black in color. The tornado spins like a top and may sound like the roaring of an airplane or locomotive. These small, short-lived storms are the most violent of all atmospheric phenomena and, over a small area, are the most destructive.

The width of a tornado path ranges generally from 200 yards to 1 mile. They travel 5 to 50 miles along the ground at speeds of 30 to 75 mph. Tornadoes sometimes double back or move in circles, and some have remained motionless for a while before moving on. They have struck in every State, but the principal areas of frequency are in the Middle Plains and Southeastern States. Because tornadoes are highly localized and recurring in some areas, companies in tornado-prone areas should participate in a Tornado Watch System (Sky Warn) built around a local emergency management agency.

The National Weather Service issues severe weather warnings, using the following terms: SEVERE THUNDERSTORM indicates the possibility of frequent lightning and/or damaging winds of greater than 50 mph, hail 3/4-inch or more in diameter (about the size of a dime), and heavy rain; SEVERE THUNDERSTORM WATCH indicates the possibility of tornadoes, thunderstorms, frequent lightning, hail, and winds of greater than 75 mph; TORNADO WATCH means that tornadoes could develop in the designated area; and TORNADO WARNING means that a tornado has actually been sighted in the area or is indicated by radar.

Since tornadoes occur with little or no warning, very little planning can be done before the event. (However, permanent mitigation measures to prevent collapse can be taken to upgrade existing buildings and can be included in new building designs.) Management should assign specific areas in the facility to shelter employees. The best protection is an underground area. In buildings without basements, designate interior hallways on the lowest floor as tornado shelter areas. Shelter high-rise building occupants in small interior rooms or hallways. Continuously monitor news broadcasts following a tornado watch announcement. When a tornado warning is issued, direct employees to take shelter immediately and to crouch down and cover their heads with their arms. Close all doors to outside rooms. Conduct training and periodic drills to assure that employees know where and how to best protect themselves. Those employees who work outside should be advised to lie flat in the nearest ditch, ravine, or culvert with their hands shielding their heads if there is not time to reach indoor shelter. In the aftermath of the tornado, check all damaged facilities for survivors. Avoid downed power lines, check for gas leaks, and contain small fires.
Winter Storms

Winter storms vary in size and intensity. A storm may affect only part of a State or many States and may be a minor ice storm or a full-blown blizzard. Freezing rain or sleet, ice, heavy snow or blizzards can be serious hazards. A company can lessen the impact of hazardous winter storms if management observes storm warnings and makes adequate preparations to protect its employees and operations.

The forecast terms for hazardous weather conditions which should alert a company to take precautionary measures include: WINTER STORM WATCH indicates severe winter weather conditions may affect the area (freezing rain, sleet, or heavy snow may occur either separately or in combination of the three forms of precipitation). WINTER STORM WARNING indicates that severe winter weather conditions are imminent. HIGH WIND WATCH indicates sustained winds of at least 40 mph, or gusts of 50 mph or greater, are expected to last for at least 1 hour. (In some areas this means strong gusty winds occurring in shorter time periods.) HEAVY SNOW WARNING indicates snowfalls of at least 4 inches in 12 hours or 6 inches in 24 hours are expected. (Heavy snow can mean lesser amounts where winter storms are infrequent.) BLIZZARD WARNINGS are issued when sustained wind speeds of at least 35 mph are accompanied by considerable falling and/or blowing snow. Visibility is dangerously restricted. TRAVELERS' ADVISORIES are issued to indicate that falling, blowing, or drifting snow, freezing rain or drizzle, sleet, or strong winds may make driving difficult.

Move Records and Equipment. Placing items up off the ground onto shelves and tables may provide enough clearance to prevent damage from minor flooding. In multistory buildings, items can be moved to an upper level. Relocation to another facility may be required if the expected flood water elevation will be more than 2 or 3 feet above the facility's floor level. In new construction, key pieces of equipment, such as emergency generators, can be located above an expected flood water elevation by steel support legs, by bolting to wall supports, or by placement in upper stories or on roofs. Quick-disconnect electrical plugs can be installed to permit rapid removal and reinstallation of larger machinery.

Pumps and Emergency Power. Pumps can be used to de-water localized areas (IE: basements or areas protected by burnins or sandbags). Care must be exercised in selecting pumps with adequate capacity to pump the water out faster than it enters. Also, there must be adequate power supply to drive the pumps. It should not be assumed that normal electric power will be available. Gasoline powered pumps or emergency generators may be required.
1. **Business Emergency Preparedness and Plans:**

   - http://www.ci.richmond.ca.us/oes
   - http://www.dhs.gov/index.shtm
   - http://www.fema.gov/business
   - http://www.cdc.gov/niosh/topics/prepared
   - http://www.abag.ca.gov/bayarea/eqmaps/business/planplan.html

2. **Hazardous Materials & Shelter-In-Place:**

   - www.cococaer.org
   - http://www.redcross.org/services/disaster/beprepared/shelterinplace.html

3. **Pandemic Flu:**

   - www.cdc.gov/flu/pandemic/checklists.htm
   - http://www.pandemicflu.gov
   - www.dhs.ca.gov/ps/cdcd/cdcdindex.htm
   - www.who.int/en/
INITIAL PLANNING CHECKLIST

(Status, IE: Completed, In progress, w/date, etc.)

- Research existing plans and procedures.
- Conduct a Hazard Vulnerability Analysis of your buildings, structures, and surroundings (see Matrix on page 4).
- Consult with the City Inspectors to ensure that your building meets current safety standards.
- Hold R.E.A.C.T. (Richmond Emergency Action Community Teams) training for all employees.
- Develop a resource list of personnel, critical supplies and equipment. Examine deficiencies, and identify areas which should be upgraded or changed.
- Develop purchasing agreements with vendors and customers for post-disaster operations.
- Develop procedures for employees to report back to work/remaining at work post disasters.
- Secure and anchor furniture, including bookshelves, cabinets, computers, heavy equipment.
- Decide whether your company should prepare an E.A.C., Emergency Action Checklist (small business) or an E.O.P., Emergency Operations Plan (large business).
  - [ ] E.A.C., Emergency Action Checklist
  - [ ] E.O.P., Emergency Operations Plan
- Conduct drills to ensure that your company’s Emergency Operations Plan is effective. Revise Plan as necessary.
- Share all plans with all departments, plans need to be read and understood before a disaster occurs.
## HAZARD VULNERABILITY MATRIX

<table>
<thead>
<tr>
<th>HAZARD</th>
<th>VULNERABILITY</th>
<th>SECONDARY HAZARDS*</th>
<th>MISC Info.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOW MED HIGH</td>
<td>EQ     FL      HM</td>
<td>NT SS</td>
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<tr>
<td>Aircraft Crash</td>
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<td>Civil Unrest</td>
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<td>Earthquake</td>
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<td>Flood</td>
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<td>Hazardous Mat.</td>
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<td>Onsite OR Offsite</td>
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<tr>
<td>Nuclear War</td>
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<tr>
<td>Severe Storm</td>
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</tbody>
</table>

* EQ= Earthquake, FI= Fire, FL= Flood, HM= Hazardous Material, NT= Nat’l Threat, SS= Severe Storm
EMERGENCY ACTION CHECKLISTS

Small companies (or large companies who do not possess sufficient emergency response capability (fire, medical, security, etc.), should consider preparing an EAC (Emergency Action Checklist).

The EAC contains the procedures and provisions the company would rely upon to protect employees and other company resources during a disaster. It:

1. Explains how the company will accomplish the necessary actions to protect employees, equipment, supplies and facilities.

2. Includes emergency phone numbers, call down rosters, resources listings, maps, charts, etc.

3. Provides step by step procedures for cooperation with local authorities to:
   - Notify/warn all employees (at work and at home).
   - Evacuate employees from company facilities.
   - Provide employees shelter (on company property or in public shelter).
   - Obtain and use company equipment and supplies (vehicles, equipment, lumber, etc.), to protect employees and facilities from hazards.
   - Obtain mutual aid from other companies.
   - Report situations and request assistance from civil authorities.
   - Communicate with employees who are working at other company facilities.
EMERGENCY OPERATIONS PLANS

Large companies, that have 500 or more employees, and have medical, fire, and security resource capability, should consider developing an E.O.P. similar to the City of Richmond’s E.O.P.. The E.O.P. is set up as follows:

1. Introduction:

   Explains the purpose and the objectives of the Emergency Operations Plan, as well as an overview of the Company. Includes a policy statement by the chief executive officer outlying the company’s commitment.

2. Basic Section:

   Outlines the emergency organization, provides overall organizational and operational concepts for responding to various types of identified hazards that may impact the company and the city.

3. Checklists

   The five checklist sections outline the responsibilities of individuals, of the functional emergency response organization according to SEMS (Standardized Emergency Management Systems) and NIMS (National Incident Management System);
   - Finance/Administration,
   - Logistics,
   - Management,
   - Operations, and
   - Planning/Intelligence.

4. Documents

   Contains legal documents, M.O.U.’s, and forms needed during a disaster.

5. Resources

   Contains Inventory lists, Critical Facilities Information, Resource List, Glossary of Terms, Includes emergency phone numbers, call down rosters, maps, charts, etc.
GENERAL PLANNING CHECKLIST

1. Getting Started

☐ Management has given approval for a hazard assessment of the facility
☐ Personnel have been assigned and funds/time have been made available.
☐ Employees have been notified of the planning efforts to assure their cooperation.

2. Vulnerability Assessment

☐ Facility vulnerability has been checked for the following hazards:
  ☐ Earthquakes (including secondary geological hazards, dam failure, landslides, ground rupture, liquefaction).
  ☐ Fire
  ☐ Flood
  ☐ Hazardous Materials
  ☐ Nuclear War
  ☐ Severe Storms
  ☐ Your vulnerability assessment has been checked to see if it agrees with that of the local emergency management agency.
  ☐ Management has been informed of the results of the vulnerability assessment.

3. Management Commitment

☐ Management made a written commitment to develop disaster mitigation plan.
☐ A budget, schedule, and personnel roster for the task have been prepared and approved by management.
☐ One or more members of management have been assigned to assist in the development of the plan.
☐ Management has formed mutual assistance agreements with neighboring facilities.

4. Essential Analysis

☐ A team, with management participation, has been formed to perform the essential analysis.
☐ Essential processes and equipment have been identified.
☐ Essential equipment inventory worksheets have been completed, checked, and approved.
☐ Provisions have been made for essential operations in case facility is cut off from utilities and services for up to 72 hours.
5. Plot Plan

☐ Facility plot plans have been developed that show the locations of:
☐ Essential resources and equipment
☐ Hazardous materials
☐ Emergency shut off for utilities, and
☐ Fire hydrants and extinguishers
☐ Copies of the facility plot plans have been provided to local emergency response organizations.
☐ Plans have been developed and posted for each individual building.

6. Protective Housekeeping and maintenance

☐ Smoking restrictions are strictly adhered to.
☐ Fire doors are kept shut as required.
☐ Flammable and combustible materials are inventoried periodically and unnecessary quantities disposed of.
☐ Furnace flues are periodically checked and cleaned.
☐ Sensitive equipment has been moved above the expected level of flooding.
☐ All Material Safety Data Sheets are available and current.
☐ The compatibility of stored materials has been carefully considered.
☐ The waste storage area is in compliance with the applicable regulations.
☐ Explosimeters and oxygen meters are available and used when prudent (to give warning during handling, transferring, and processing operations that could release explosive/flammable vapors).
☐ Implements for tying down equipment are kept where they can be easily reached.
☐ Flammable materials have been stored away from lightning rod conductors.

7. Countermeasure Checklists

Earthquake:
☐ The facility meets current building code requirements for areas of moderate to high seismic activity.
☐ Remodeling that could reduce the seismic resistance of the structure has been reviewed.
☐ Management has committed to a structural upgrading program, if needed.
☐ This management agreement has been committed to writing, including a listing of items to be implemented and any special conditions.
☐ Priorities have been established for the retrofitting program.
☐ All equipment has been properly anchored:
☐ Hot water heaters,
☐ Top heavy plant machinery,
☐ File cabinets, all top heavy office furniture and equipment,
☐ Ceiling light fixtures, and suspended ceilings,
☐ Computers and similar high value equipment,
☐ Raised floors,
☐ Any tanks, high pressure cylinders, or hazardous materials containers,
☐ Electrical transformers
☐ All gas powered systems have flexible connections installed
☐ Windows have been replaced if not safety glass, or have been treated
☐ Outer masonry ornamentation, signs, and parapets have been braced
☐ Automatic shutoff valves have been installed on gas utilities and large hazardous materials containers.

Fire:
☐ Duct systems have been properly constructed and insulated to prevent smoke from accumulating or fire from spreading in stairwells.
☐ External fire escapes have been added to the facility where needed.
☐ Source tanks of flammable or hazardous materials have been designed with remote shut off to prevent discharge of the contents, even if access to them is denied.
☐ A sufficient number of fire extinguishers of the proper class have been reasonably placed throughout the facility. (Consult with the Fire Department)
☐ Fire extinguishers are serviced annually.
☐ Fixed fire suppression devices (sprinklers) have been installed in areas of high vulnerability.
☐ Fire alarm and backup systems have been installed and regularly scheduled for routine maintenance and testing.
☐ A smoke detector system has been installed and scheduled for routine maintenance, and testing.

Flood:
☐ Plant sites are located above the base flood elevation.
☐ Structural design includes features to elevate building above the base flood elevation.
☐ Berms have been added around facility perimeter to act as flood barriers.
☐ Storm pumps have been installed to provide added drainage.

Hazardous Materials:
☐ Hazardous material storage areas have been designed to contain spills.
☐ Explosion proof and/or intrinsically safe electrical system and bonding have been used in areas of volatile material storage.
☐ Physical barriers have been added to areas where moving vehicles are likely to come in contact with hazardous materials or storage control valves.
☐ Containment systems are watertight.
☐ Proper drainage and a collection sump have been installed in containment areas.
☐ Protective clothing and equipment have been provided for workers and facility response teams.
☐ Spill or release detector/alarms, and backup warning systems have been installed and regularly scheduled for routine maintenance and testing.
☐ Consult with the Fire Department on additional precautions/measures.

Severe Storms:
☐ Facility design includes areas reinforced to withstand heavy winds, floods.
☐ Essential equipment has been moved to a higher floor/level.
☐ All sewers and drains have been inspected and determined to be in good working order.
☐ Drainage pumps have been procured, or source located, rental agreements in place, to flush out excess water backing up into the facility, if necessary.