

**ANNEX 24**  
**BUSINESS AND INDUSTRY**

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PRIMARY: SC Department of Commerce

SUPPORT: South Carolina Emergency Management Division (SCEMD), SC Parks, Recreation and Tourism (PRT), SC Department of Insurance (DOI), SC Insurance News Service (SCINS), SC Retailers Association, SC Chamber of Commerce, SC Budget and Control Board.

**I. INTRODUCTION**

- A. South Carolina experiences 10 to 20 earthquakes annually. Most of these are so minor they cannot be felt. The historical record of earthquakes in South Carolina makes it clear that earthquakes and their associated seismic hazards exist. Earthquakes can seriously damage buildings and their contents; disrupt gas, electric, and telephone services; and trigger landslides, flash floods, and fires. Aftershocks can occur for weeks following an earthquake. In many buildings, the greatest danger to people is when equipment and non-structural elements, such as ceilings, partitions, windows and lighting fixtures, shake loose. The impact of a large earthquake on business and industry will have direct and indirect effects on the State's economy and its ability to successfully recover from the earthquake.
- B. According to SC Seismic Risk and Vulnerability Study, in terms of economic losses, an earthquake of similar intensity and location to the one in 1886 would result in total economic losses from damage to buildings, direct business interruption losses, and damage to transportation and utility systems could exceed \$20 billion. Direct economic losses due to building damage (excluding business interruption losses) are estimated to exceed \$14 billion. Transportation and utility systems' direct economic losses would exceed \$1 billion. About \$10.9 billion of the total economic losses will probably occur in the tri-county area of Charleston, Berkeley, and Dorchester counties. The building damage alone would cause more than \$4.2 billion in losses due to direct business interruption. Loss estimates include rental income, business income, wages, and relocation expenses.
- C. ESF-24 will prepare for disaster response using the Operational Area Concept and worst case loss estimation data in Attachment C to the Basic Plan.

**II. MISSION**

Assist South Carolina business and industry in disaster preparedness, response, mitigation, and recovery actions in response to an earthquake.

### III. CONCEPT OF OPERATIONS

- A. Response operations will use an Earthquake Checklist that will be executed following a strong earthquake. Activities in the Earthquake Checklist do not replace required activities normally assigned to ESF in the SCEOP and supporting ESF SOP. The Checklist activities are to ensure that critical actions are completed or continuing at the appropriate time during an earthquake response. See Attachment A to this Annex for Checklist.
- B. Casualties, damage, and destruction are the apparent results and concerns of an earthquake; the less apparent impacts relate to the direct and indirect losses to the economy due to interruptions and losses to businesses and industries. ESF-24 will review and be familiar with the Loss Estimation Reports for the economic loss in each operational area.
- C. ESF-24 will communicate with businesses and industries through available communications in the impacted areas to determine the extent of damage to the businesses and industries and their support needs.
- D. ESF-24, in coordination with SCEMD, will identify businesses and industries by operational area that have a vital function whereas if a critical business function is interrupted, a firm could suffer serious financial, legal, or other damages or penalties. This data will help public officials quickly determine the earthquake's economic impacts. It also will help determine priorities for inspection, restoration of services, repairs, and other actions after the event.
- E. ESF-24 will receive special requests for priority and expedited actions to allow for the restoration of businesses, industries, the financial communities, and critical businesses and industries. Such requests will be generated when local jurisdictions cannot resolve problems; when the size, importance or criticality of a business, industry, facility, or function allows for direct contact with state government; or when a situation may otherwise dictate such requests are appropriate. Examples of assistance may include damage assessment, building inspections, processing of rebuilding plans and permits, road clearance, and communications services. With limited government resources, ESF-24 should give highest priority for assistance to critical businesses and industries that house functions that will help the survivability of the population.
- F. ESF-24 will utilize their existing resource manual and will continue to expand upon it by adding business associations and other organizations that will assist in response and recovery after an earthquake.

- G. ESF-24 will encourage businesses and industries to develop an all-hazards business continuity plan to include information about planning for earthquakes. ESF-24 will provide information to business and industry about what should be included in an earthquake plan. See Attachment B and C to this document for recommended actions for businesses and industries.
- H. ESF-24 will coordinate with SC Recovery Task Force to identify post-earthquake recovery issues that will be of concern to businesses and industries. The type of issues that will affect recover include, but are not limited to:
1. Loss of power.
  2. Loss of surface transportation.
  3. Loss of traditional sources of revenue.
  4. Ability to communicate with customers.
  5. Physical loss and damage.
  6. Loss of inventory.
  7. Potential for permanent loss.
  8. Creation of temporary commercial businesses and industries to continue operations.
  9. Sources of financial assistances to aid businesses recovery.
  10. Personal concerns of employees.
  11. Disaster assistance programs.
- I. ESF-24 will encourage businesses and industries to participate in Earthquake Awareness week activities. Examples of activities are conducting earthquake drills, identifying structural and non-structural hazards, and developing a disaster preparedness kit.
- J. ESF-24 will encourage businesses and industries to develop contingency plans for continued operations based on total and/or partial shut downs due to building, utility, communications or transportation failures from the earthquake.
- K. ESF-24 will coordinate with the insurance industry to ensure the availability of adjusters and the State's policy for re-entry after the earthquake.
- L. ESF-24 will coordinate with ESF-15, Emergency Public Information, to provide essential information for release to the public regarding the business/industry.
- M. ESF-24 will identify businesses and industries with engineers that could support SERT in the post-disaster inspection of buildings. SC Budget and

Control Board (SC B&CB), Office of State Engineer (ESF-3), maintains the procedures, and logistic requirements for volunteer engineers.

#### **IV. ESF ACTIONS**

##### **A. Preparedness**

1. Analyze the Loss Estimation Reports for the economic loss in each operational area.
2. Identify businesses and industries by operational area that have a vital function.
3. Develop concepts to provide limited government resources to businesses and industries.
4. Identify the best methods to communicate with businesses and industries in impacted areas.
5. In coordination with SCEMD, make information available to businesses and industries on disaster assistance programs that can assist them after an earthquake.
6. Maintain and expand resource manual to identify groups that can provide specialized technical assistance in the response phase and economic recovery planning process after an earthquake.
7. Encourage businesses and industries to assess their vulnerability by adopting and enforcing seismic building codes, participation in Earthquake Awareness week activities, and developing contingency plans for earliest possible restoration of vital functions after an earthquake. See Attachments B and C to this document for recommended actions.
8. Coordinate with SCEMD to identify businesses and industries with engineers that could possibly support B&CB, ESF-3, in the post-disaster inspection of buildings.
9. Assist business and industry partners in preparation of earthquake plans.
10. Coordinate with SC Recovery Task Force to identify post-earthquake recovery issues that will be of concern to businesses and industries.

11. Promote the benefits of purchasing earthquake insurance in earthquake prone areas.
12. Coordinate with ESF-15 to be prepared to provide essential information for release to the public regarding the business/industry community.

B. Response

1. Implement ESF-24, Earthquake Checklist, Attachment A to this Annex.
2. Communicate with business and industry partners to determine the extent of damages.
3. Provide coordination with businesses and industries to help support lifesaving and life-sustaining efforts.
4. Coordinate with public and private partners to identify critical businesses and industries in the impacted areas. Provide estimates on the earthquake's probable economic impacts.
5. Assist SEOC planners to help determine private-sector priorities for inspection, repair, restoration of services, and other actions.
6. Work with SCEMD to identify and contact business and industry partners who can provide engineers to support the B&CB, ESF-3 response effort. ESF-3 is the point of contact.
7. Identify and contact groups that can provide specialized technical assistance in the response phase and economic recovery planning process after an earthquake.
8. In coordination with SCEMD, prepare and provide business and industry partners a list of federal and state disaster assistance programs to help with the recovery efforts.
9. Coordinate with insurance partners regarding when adjusters will be allowed to enter the affected areas.
10. Coordinate with ESF-15 to provide essential information for release to the public regarding the business/industry community.

C. Recovery

1. Assist in the recovery planning process and request assistance from groups that can aid in the recovery planning process.
2. Assist with, receive reports from, and analyze private sector damage assessment information.
3. In coordination with the Recovery Task Force, contact business and industry partners to determine post-earthquake issues that are of concern to the partners.

D. Mitigation

1. Coordinate with the SCEMD Earthquake Coordinator on activities that can be conducted during Earthquake Awareness Week for businesses and industries.
2. Encourage companies to practice earthquake safety drills, to implement structural and non-structural mitigation to businesses and industries and to promote family preparedness plans with employees prior to an earthquake.
3. Assist in the development of strategies and plans that can be implemented with businesses and industries following an earthquake.

**V. RESPONSIBILITIES**

A. SC Department of Commerce

1. Analyze the Loss Estimation Reports for economic losses in each operational area.
2. By operational area, identify businesses and industries that provide vital functions.
3. Develop concept to provide limited government resources to businesses and industries.
4. Make information available to businesses and industries about assessing their vulnerability to earthquakes, adopting and enforcing seismic building codes, participation in Earthquake Awareness week activities and developing contingency plans for earliest possible restoration of vital functions after an earthquake.

5. Examine alternate methods of communication with businesses and industries in impacted areas to determine the extent of damages.
  6. Encourage businesses and industries to develop all-hazards business continuity plans and to include information about planning for earthquakes. ESF-24 will provide information to business and industry about what may be included in an earthquake plan. See Attachments B and C of this Annex.
  7. In coordination with SCEMD, provide information on available disaster assistance programs that can assist businesses and industries after an earthquake.
  8. Maintain and enhance the resource manual to identify groups that can provide specialized technical assistance in the response phase and economic recovery planning process after an earthquake.
  9. Coordinate with the SC Recovery Task Force to identify post-earthquake recovery issues that will be of concern to businesses and industries.
  10. Coordinate with ESF-15 to be prepared to provide essential information for release to the public regarding the business/industry community.
  11. Participate in drills and exercises to evaluate procedures.
  12. Review and update ESF-24 Earthquake Checklist.
- B. SC Budget and Control Board, Office of State Engineer
- Identify businesses and industries with engineers that could support the post-disaster inspection of buildings.
- C. All Supporting Agencies:
1. In coordination with SCEMD, provide information on available disaster assistance programs that can assist businesses and industries after an earthquake.
  2. Encourage businesses and industries to participate in Earthquake Awareness week activities. Examples of these activities are conducting earthquake drills, locating structural and non-structural hazards in the facility, and developing disaster preparedness kit.

3. Coordinate with the SCEMD Recovery Task Force to identify post-earthquake recovery issues that will be of concern to businesses and industries.
4. Coordinate with ESF-15 to provide essential information for release to the public regarding the business/industry community.
5. Encourage businesses and industries to assess their vulnerability to earthquakes.
6. Encourage businesses and industries to adopt and enforce seismic building codes.
7. Encourage businesses and industries to develop contingency plans for continued operations based on total and/or partial shut downs due to building/utility/communications/transportation failures from an earthquake.
8. Participate in drills and exercises to evaluate procedures.
9. Promote the benefits of purchasing earthquake insurance, especially in earthquake prone areas.

#### **VI. FEDERAL ASSISTANCE**

This annex has no counterpart in the National Response Framework (NRF). However, DHS and the NRF primary and support agencies coordinate with the private sector to effectively share information, form courses of action, and incorporate available resources to prevent, prepare for, respond to, and recover from incidents of national significance.

#### **VI. ATTACHMENTS**

Attachment A: ESF-24 Earthquake Checklist

Attachment B: Business and Industry: Recommended Actions to Plan for Earthquakes

Attachment C: What to do Before, During, and After an Earthquake for Businesses and Industries

**ESF-24 (Business and Industry)**

Date/Time Complete

1. \_\_\_\_\_ Communicate with business and industry partners to determine the extent of damage.
2. \_\_\_\_\_ Provide coordination with businesses and industries to help support lifesaving and life-sustaining efforts.
3. \_\_\_\_\_ Coordinate with public and private partners to identify critical businesses and industries in the impacted areas, and provide estimate on the earthquake's probable economic impacts.
4. \_\_\_\_\_ Assist SEOC planners to help determine private-sector priorities for inspection, repair, restoration of services, and other actions.
5. \_\_\_\_\_ Work with SCEMD to identify and contact business and industry partners who can provide engineers to support the B&CB, ESF-3 response effort. ESF-3 is the point of contact.
6. \_\_\_\_\_ Identify and contact groups that can provide specialized technical assistance in the response phase and economic recovery planning process after an earthquake.
7. \_\_\_\_\_ In coordination with SCEMD, prepare and provide business and industry partners a list of federal and State disaster assistance programs to help with the recovery efforts.
8. \_\_\_\_\_ Coordinate with insurance partners to when adjusters will be allowed to enter the affected areas.
9. \_\_\_\_\_ Coordinate with ESF-15 to provide essential information for release to the public regarding the business/industry community.

**Attachment A to Basic Plan**  
**Earthquake Checklist** 

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**\*NOTE:** All Checklist activities listed are essential, and should be completed. However, Checklist activities denoted with an asterisk are critical, and should be completed first. Other action items can be executed simultaneously to expedite response actions.

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**Business And Industry: Recommended Actions To Plan For Earthquakes**

- I. The principal focus of this action list is to minimize the impacts of disruptions to business and industry following earthquakes. Following are considerations in preparing for earthquakes:
- A. Are there plans for conducting initial damage assessments, and identifying unsafe conditions?
  - B. Are there plans to provide continuous communications with employees and other occupants of the building to provide hazard warning, instructions and announcements, status of critical life-lines and emergency services and information about damage and sources of assistance?
  - C. Are plans in place to operate at less than full staffing when employers may not be able to get to worksite due to earthquake damages?
  - D. Is emergency power available to supply critical operations, processes, and emergency equipment?
  - E. Have evacuation plans been developed and tested?
  - F. Is there a plan to determine when it is safe to re-enter buildings?
  - G. Is there a plan to activate security procedures for securing vital records and documents?
  - H. Have First Aid and CPR training courses been offered to employees?
  - I. Have plans been developed to provide for the emergency housing, feeding, and non-medical care of employees and other building occupants if employees are unable to travel to their homes after the earthquake.
- II. The following are steps businesses can take to prepare for earthquakes:
- A. **Mitigation:** Activities that eliminate or reduce the probability of occurrence of a disaster or that reduce its damaging effects through protection of the organization's assets include land use controls and equipment purchase. A few examples are:
    - 1. Conduct hazard vulnerability analyses of all buildings and strengthen hazardous structures.
    - 2. Prepare and regularly update disaster plans. Address both response and recovery issues.
    - 3. Institute ongoing training programs in emergency procedures, first aid, CPR, evacuation, search and rescue, use of fire extinguishers, and damage assessment.
    - 4. Consult local building codes to ensure that your building meets or exceeds current structural safety standards.
    - 5. Consider ways to reduce the effects of emergencies, such as moving or constructing facilities away from flood plains and fault zones. Consider ways to reduce the chances of emergencies

## Attachment B to Annex 24

### Business And Industry: Recommended Actions To Plan For Earthquakes

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- occurring, such as changing processes or materials used to run the business. Conduct engineering surveys of structural and non-structural components.
6. Conduct "hazard hunts" to find nonstructural hazards in offices, storerooms, laboratories, warehouses, and manufacturing areas. Consider the following non-structural mitigation measures:
    - a. Prepare a disaster kit, to include: first aid kit, portable radios & batteries (preferably a NOAA Alert Radio), waterproof plastic bags, tool kits, mops, brooms, buckets, administrative supplies, flashlights, heavy gloves, non-perishable food, and sanitation supplies. Maintain in a secure, accessible location.
    - b. Install fire-resistant materials and furnishings.
    - c. Secure items that could fall or shake loose in an emergency.
    - d. Move heavy or breakable objects to low shelves.
    - e. Attach cabinets and files to low walls or bolting them together.
    - f. Move workstations away from large windows.
    - g. Secure and anchor equipment and furniture, including bookshelves, cabinets, computers, typewriters, water heaters, other gas appliances, and laboratory equipment.
  7. Consider the following structural retrofitting measures:
    - a. Upgrade facilities to meet or exceed seismic building codes.
    - b. Install storm shutters or laminate windows.
    - c. Install fire sprinkler systems.
  8. Educate staff, as applicable, on earthquake effects on high-rise buildings. (Lower floors will shake rapidly. Movement on upper floors will be slower, but the building will move farther from side to side.)
  9. Include articles on business and home earthquake safety in employee newsletters, or provide employees with brochures or flyers.
  10. Obtain agreements with vendors for post-earthquake operations.
  11. Minimize hazmat stored on site by scheduling regular pick-ups.
  12. Elevate equipment such as CPUs and electronic equipment.

**Business And Industry: Recommended Actions To Plan For Earthquakes**

13. Secure shelves, filing cabinets, tall furniture, desktop equipment, computers, printers, copiers and light fixtures.
14. Secure fixed equipment and heavy machinery to the floor. Larger equipment can be placed on casters and attached to tethers which attach to the wall.
15. Add bracing to suspended ceilings, if necessary.
16. Install safety glass where appropriate.
17. Secure large utility and process piping.
18. Keep copies of design drawings of the facility to be used in assessing the facility's safety after an earthquake.
19. Ask your insurance carrier about earthquake insurance and mitigation techniques.

B. Preparedness: Activities to pre-plan and organize disaster response. Examples are:

1. Exercise emergency plans.
2. Review processes for handling and storing hazardous materials. Have incompatible chemicals stored separately.
3. Establish procedures for evacuation and in-place sheltering after an earthquake.
4. Determine and post primary and alternate routes for emergency evacuation of the building, should that be necessary after an earthquake. Establish procedures for persons needing evacuation assistance.
5. Designate areas in the facility away from exterior walls and windows where occupants should gather after an earthquake if an evacuation is not necessary.
6. Identify first response medical team and emergency procedures training.
7. Develop and exercise emergency assignments and recall procedures.
8. Keep company vehicles filled with fuel.
9. Keep cell phone batteries charged.
10. Designate primary emergency operations control center and alternate headquarters.

**Attachment B to Annex 24**

**Business And Industry: Recommended Actions To Plan For Earthquakes**

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11. Inventory emergency equipment.
  12. Identify critical records and equipment for evacuation or relocation.
  13. Protect, relocate or duplicate vital records.
  14. Confirm continuity of management plan.
  15. Determine adequate means of securing equipment unable to be stored inside.
  16. Reaffirm shelter arrangements.
  17. Video or photograph inventory.
  18. Conduct earthquake drills.
  19. Perform regular, routine backups of computer systems.
- C. Response: Activities to assist disaster victims reduce further damage and speed recovery. Examples are the implementation of:
1. First aid stations and the commitment of fire-rescue personnel and equipment. Life safety should be the first priority.
  2. Emergency Control Center operating procedures and establish direction and control.
  3. Warning and communications systems.
  4. Emergency shutdown procedures if necessary.
  5. In-Place Sheltering or evacuation procedures.
  6. Damage assessment and control procedures.
  7. Radiological monitoring.
  8. Public information procedures.
  9. Industrial mutual aid procedures.
  10. Contingency checklists for inspection, repair, restoration of services, and other actions.
- D. Recovery: Actions designed to address business resumption functions that are beyond the time-sensitive issues of the response phase. Examples are:
1. Repair of the primary site and the restoration of routine business activities.

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**Business And Industry: Recommended Actions To Plan For Earthquakes**

2. Conduct a comprehensive damage survey of the facilities to determine the need for temporary relocation and/or the timing of re-occupancy.
3. Clean-up of company properties including securing contractors support to supplement crews in the repair of damaged facilities.
4. Restore essential business facilities and/or establish temporary facilities, ensure key personnel report to work sites or alternate headquarters, restore damaged utility systems to minimal operating levels and control access to company facilities.
5. Implement alternate sources of essential supplies and replacement parts if your normal vendors are unable to function after the earthquake.
6. Provide information to the news media about service hours, location of operations, and any changes in procedure.
7. Decide on a course of action for long term recovery, participating in on-going community preparedness and recovery, reconstruction planning, and decision making.

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**I. BEFORE AN EARTHQUAKE:**

- Prepare a company earthquake preparedness plan. You can reduce injuries to employees and lessen the possibility of panic after the earthquake has occurred by planning for all eventualities.
- List for employees the possible means of taking shelter during an earthquake and hold occasional drills so that they will have the opportunity to practice. Tell them not to leave the building during the earthquake.
- Have available for immediate use the telephone numbers of and alternative means of communication for public safety agencies including police, fire, medical, and utilities.
- Check all offices, storage areas, manufacturing areas and other work areas for earthquake hazards.
- Brace or anchor high or top heavy shelves, machinery or any other equipment which could fall during a tremor.
- Bolt down or provide other strong support for water heaters and other gas appliances on the premises since fire damage could result from broken lines and connections.
- Prepare several alternate routes of evacuation for employees in the various parts of the building should they need to leave their work area because it is unsafe.
- Consider all possibilities should destruction occur. What if those on upper floors cannot descend to the ground floor? What if employees are trapped in the basement?
- Appoint at least two persons in each department or on each floor who will assume leadership roles after the earthquake has occurred and be sure they are properly trained.
- Consider the possibility that employees may not be able to leave the premises and keep supplies on hand which will be needed. These include one or more battery-powered radios and extra batteries, flashlights and extra batteries, at least a 72-hour supply of food and water for each employee, blankets, and adequate first aid supplies. Encourage employees to keep a few personal toilet articles on hand at work, such as a toothbrush, small toothpaste tube and small bar of soap.

**Business And Industry: What To Do Before, During, And After An Earthquake**

- Plan assistance for physically handicapped employees who are unable to leave the building or areas of the building without the aid of another person.
- Designate areas of the building which may be suitable as shelter areas should employees be required to stay there after the earthquake.
- Ensure extinguishers are kept in good working order and that several employees in each work area know how to operate them.
- Consider alternate means of ventilation and lighting if the power is off, If your building is windowless.
- Urge employees to have a plan for reunification of their families should they be unable to leave the premises to return home immediately.
- Develop contingency plans for continued operations of your company/plant based on total and/or partial shut downs due to building/utility/communication/ transportation failures. Include key personnel, communication systems, utilities, and other support needed for 24 hours, 72 hours, one week and one month.
- Discuss and distribute the company earthquake plan with employees and be sure each one understands all phases of the plan.

**II. DURING THE EARTHQUAKE:**

- Drop, cover, and hold on. Move only a few steps to a nearby safe place. It is very dangerous to try to leave a building during an earthquake because objects can fall on you. Many fatalities occur when people run outside of buildings, only to be killed by falling debris from collapsing walls. Only use a doorway for shelter if it is in close proximity to you and you know it's a strongly supported, load bearing doorway.
- If you are outdoors, find a clear spot away from buildings, trees, streetlights, and power lines. Drop to the ground and stay there until the shaking stops. Injuries can occur from falling trees, street-lights and power lines, or building debris.
- If you are in a moving vehicle, stop quickly, and avoid stopping near or under buildings, trees, overpasses and utility wires. When the earthquake stops, avoid driving on roads, bridges or ramps that might have been damaged.

**Business And Industry: What To Do Before, During, And After An Earthquake**

- Stay indoors until the shaking stops and you're sure it's safe to exit. After the shaking has stopped, if you go outside, move quickly away from the building to prevent injury from falling debris.
- Stay away from windows. Windows can shatter with such force that you can be injured several feet away.
- In a high-rise building, expect the fire alarms and sprinklers to go off during an earthquake. Earthquakes frequently cause fire alarm and fire sprinkler systems to go off even if there is no fire. Check for and extinguish small fires, and, if exiting, use the stairs, do not use elevators.

III. AFTER AN EARTHQUAKE

- After an earthquake, expect aftershocks. These are usually less violent than the main earthquake, but can be strong enough to cause additional damages and can occur hours, days, weeks or even months after the earthquake.
- Employees should immediately check for injuries among fellow workers and render first aid as needed. Seriously injured persons should not be moved unless they are in danger of further injury.
- Check for fires and fire hazards, especially for gas leaks and damaged electrical wiring. See that these are turned off at main valves and/or circuit breakers as required.
- Check for building damage and move employees to safe areas.
- Do not permit employees to use elevators or to run into the street.
- Flashlights should be used if power goes out since sparks from a match or light switch could ignite leaking gas.
- Immediately clean up dangerous spills.
- Do not use telephones for outside calls except in genuine emergencies. Use battery-powered radios for damage reports and information from public safety agencies.
- Designated leaders should immediately organize those employees for whom they are responsible and determine what steps are to be taken in accordance with the company's earthquake plan.

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