

Earthquake Response: Guidelines for Your Facility and Properties

When your company's facilities are exposed to damaging earthquakes, employees must be prepared. They will need to take emergency response actions in order to reduce the potential for injuries and downtime following an earthquake, including from resulting fire and non-structural damage.

This document sets a minimum standard of response and provides examples for creating these plans for your facility.

The objectives in regards to earthquake response are as follows:

- Minimize the potential for injury and mortality of staff, guests, and visitors.
- Evaluate and reduce hazards.
- Reduce expenses related to loss and liability.
- Put tested procedures and equipment in place.
- Plan for business resumption following an earthquake.

Here we will focus on the property conservation portion of earthquake planning and response, which will proceed only after personnel safety has been assured.

A. Safety During an Earthquake

This section provides guidelines for responding during and immediately following a damaging earthquake at the company's facilities.

When Inside:

- Do not leave your work area unless you are in immediate danger.
- **Drop, Cover, and Hold On:** Crouch down and cover your head and neck with your hands. If possible, crawl under a nearby desk or heavy table and hang onto it; if it moves, move with it. Stay there until the shaking has stopped completely.
- Watch for falling light fixtures, plaster, bricks, and other objects.
- Keep away from file cabinets and other heavy objects which may fall.
- Stay away from windows.
- Wait to use stairs until you are assured they are safe.
- Take directions from your floor warden.
- Be prepared for aftershocks.

When Outside:

- If you're outside during an earthquake, stay outside.
- Move away at least 15 feet from buildings, trees, streetlights, and overhead lines.
- Crouch down and cover your head. Many injuries occur within 10 feet of the entrances to buildings. Bricks, roofing, and other materials can fall from buildings, injuring people nearby and causing damage. Trees, streetlights, and overhead lines may also fall.

B. Crisis Management Guidelines

Establish and equip an emergency command center with meeting areas; communications equipment; contact information; pens, paper, and whiteboards; physical security; emergency power and light; food and water, and other materials, to manage the following:

- Notifying internal and external stakeholders
- Recording inbound and outbound calls
- Gathering critical information, such as: injuries, instructions from authorities, impacts on facilities and operations, etc.
- Receiving resource requests
- Providing status updates to key managers.
- Managing media questions

Establish and empower an emergency response team:

Name, Title, Position or Role:	Alternative:	Responsibilities	Contact Information:
Commander	Assign an alternate for each person on the ERT.	<ul style="list-style-type: none">• Manage and coordinate the overall emergency operations.• Establish the priorities and resolve conflicting demands for support.• Collect, evaluate, and distribute damage assessments and other essential information.	
Logistics Manager		<ul style="list-style-type: none">• Coordinate assistance requests and allocated company resources.• Coordinate inter- and intra-regional aid and community-based support	
Communications Manager		<ul style="list-style-type: none">• Coordinate, direct, and distribute emergency public and employee information• Coordinate and maintain communication with appropriate governmental agencies and news media	
Facility Manager		Ensure the safe recovery of the facility, equipment, and	

	inventory.
Operations Manager	Resume operations per the business continuity plan.

Develop Plans For:

- Evacuation procedures, such as where and when to meet and the necessary actions for protecting staff and high-value equipment and inventory.
- Shelter-in-place and first aid.
- Notifying company staff/corporate of the conditions. Consider contingencies in case of communications disruptions.
- Notifying vendors and service providers of the potential need for their services.
- Protecting mission-critical equipment, computers, vital records, high-value equipment and inventory, and other materials.
- Personnel safety and fire prevention during damage assessments, clean-up, salvage, repairs, restoration of utilities, and equipment start-up.
- Handling damaged equipment, materials, structures, etc.
- Resuming operations.

Retain a record of all pertinent information about the emergency. Take photographs of damage to building, products, and equipment. Record clean-up and salvage efforts.

C. Business Recovery and Continuity

Consider the following when recovering following an earthquake:

1. Assess Property Damage (to prevent further damage or injuries)

After personnel safety has been addressed, check for hazards. Focus on safety and fire hazards, natural gas leaks, and spills of flammable liquids or dangerous chemicals.

- Examine fire-protection systems to determine if they are damaged.
- If it is safe to enter buildings, check that furniture, fixtures, and equipment, such as storage racks and electrical switchgear, are properly secured so they will not topple.
- Control ignition sources (hotwork, smoking, etc.), particularly if sprinklers are impaired.
- Examine exterior structures and facades, equipment, and storage for damage, and take the necessary steps to repair and stabilize them.
- Address site-specific activities as needed.

2. Assess Environmental Concerns

- Identify blocked or leaking sewage or water lines.

- Examine all equipment and vessels of hazardous materials for leaks. Address spills or releases of hazardous materials.
- Inspect vessels and storage of fuel oil and lubrication oils.

3. Assess Flammable Gas and Flammable Liquid Risks

- Survey the site and address flammable gas and liquid leaks and spills. If leaks are detected or you smell gas, shut it off and report it immediately to the gas utility or fire department. Do not enter any buildings with leaking gas unless properly trained.
- If the gas odor is very strong within a building, or has a strong presence both outside and inside a building, follow these procedures:
 - › Evacuate everyone to at least 100 meters (325 feet) from the building.
 - › If people are evacuated, solicit assistance from police or fire, as available.
 - › Extinguish cigarettes and all other potential ignition sources.
 - › **Do not** operate any electrical switches; leave them as they were found.
 - › **Do not** plug in or remove any electrical cords or appliances.
 - › Shut off the gas supply at the meter.
- Never open a gas valve after a temporary shut-off. When it is safe to reactivate the gas supply, only a trained, fully qualified person should do it.

4. Preventing fires after an earthquake:

- Maintain as much fire protection as possible; close the minimum number of valves necessary for controlling leaks in impaired piping.
- Restore fire protection as soon as possible. Repair any damage to the system, test and repair sprinkler control valves, check the water source for any damage or leaks, test alarms, etc.
- Consider shutting down flammable gas and liquid systems even if there are no leaks.
- Survey the site for combustibles that are in contact with damaged electrical gear and ignition sources.
- Develop a procedure for resetting flammable gas and liquid seismic shutoff valves which includes checking the systems for leaks both prior to and immediately after valve reset.
- Control ignition sources during repairs. Use hot work only after sprinkler protection is restored, and only with hot-work permits after that.
- Control hot work during salvage and repairs.
- Monitor equipment that remains in operation for abnormalities (e.g., overheating).
- Survey the site and address other significant building and equipment damage.
- Develop and follow proper procedures for safely starting equipment.

It is imperative that you work to restore the site to pre-earthquake condition.

Action Items: List and Prioritize the Following

- Keep thorough and detailed documentation.
- Restore fire protection as soon as possible. Repair any damage to the system, test and repair sprinkler control valves, check the water source for any damage or leaks, test alarms, etc.
- Establish a building occupancy resumption program (BORP) for post-earthquake structural evaluation to facilitate prompt repairs and recertification of buildings.

If you have questions, please do not hesitate to contact your Woodruff Sawyer Account Executive.