

EARTHQUAKE PREPAREDNESS GUIDELINES

FOR

LARGE RETIREMENT COMPLEXES

AND

LARGE RESIDENTIAL CARE FACILITIES

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TYPES OF FACILITIES COVERED

These guidelines have been prepared to assist you, your staff, and your residents to take the steps necessary to ensure everyone's safety and well-being, as well as that of your facility, in the event of a damaging earthquake. The types of facilities covered by these guidelines are those having fifteen or more residents and include the following:

Congregate and Senior Housing Apartments

Providing studio and one or two bedroom apartments for rent as part of a group living arrangement. Facilities may provide at least one hot meal per day as part of the rental agreement.

Accessory Apartments

Providing independent living units with their own outside entrance. The units contain a kitchen or kitchenette and bathroom.

Retirement Communities

Offering apartments for rent or condominiums, cooperatives and single family dwellings for sale. Services vary in each community ranging from only police and fire protection to transportation, home delivered meals, and some in-home services.

Life Care Communities

Residents may buy into the community and pay a monthly fee for services which may include meals, maintenance, chore services, housekeeping, and other personal care services.

Residential Care and Community Care Facilities

Residents pay for a single or shared room. Non-medical care and supervision are provided to the resident who is in need of some personal services, protection, supervision, assistance, guidance or training to sustain the activities of daily living or for protection of the individual in care.

Throughout this document, the terms residential facility and facility will be used interchangeably to designate the aforementioned facilities.

HOW TO USE THE GUIDELINES

These Guidelines contain three major sections: **Before the Earthquake; During the Earthquake; and After the Earthquake.**

Preparedness is achieved by undertaking a series of activities **Before the Earthquake.** This section of the guidelines is divided into four categories:

- Reducing hazards in your facility
- Planning and organizing your response
- Educating staff and residents about damaging earthquakes
- Planning for recovery needs and services

Review each section. Use the checklists to identify actions and set priorities in each category. Proceed with assistance from staff and, if appropriate, residents to undertake systematic preparedness activities in your facility:

- Assign responsibilities
- Obtain/record supplies and equipment
- Plan and implement training and education efforts
- Review progress with employees and involved residents
- Conduct and evaluate drills

Using the information provided, train residents and staff in what to do **During the Earthquake.**

After the Earthquake, follow the Response Procedures Summary and implement your preparedness and recovery plans.

Your plans should be specifically tailored to meet the needs of the residents and staff of your facility.

INTRODUCTION

Earthquakes are an unfortunate fact of life in California, as we all saw during the Loma Prieta quake of October 17, 1989. Earthquakes have come in cycles throughout history. Currently, the Bay Area is in a period of increased seismic activity. Scientists estimate that there is now at least a 67% probability of another magnitude 7 or larger earthquake striking the Bay Area within the next 30 years. This could be an earthquake on the Hayward, the Peninsula segment of the San Andreas, or the Rodgers Creek fault. In Southern California, there is a 60% probability of a magnitude 7.5 to 8.0 earthquake on the southern San Andreas fault within the next 30 years, and a 50% probability of a magnitude 6.5 to 7.0 on the San Jacinto fault during that 30-year time frame. Earthquakes of the size that hit Whittier in 1987 (M5.9), Morgan Hill in 1984 (M6.2), and Coalinga in 1983 (M6.7) are more frequent and could happen at any time.

Thirty-nine of our fifty states are vulnerable to damaging earthquakes. The New Madrid Fault in the central United States generated two earthquakes in the early 1800s that are estimated to have been greater than magnitude 8.0. More recently, damaging earthquakes have hit in Washington (1949), Nevada (1954), Montana (1959), Alaska (1964), and Idaho (1986). The Quebec Province earthquake in 1988 was widely felt in the Northeastern United States.

Effective preparedness efforts are a responsibility of all sectors of society -- individuals and families, businesses, organizations, and federal, state and local governments. Actions taken *before* an earthquake will reduce injury, loss of life, and property damage, as well as enable people and institutions to return to normal in the shortest possible time following a damaging event.

These guidelines outline the steps to take *before*, *during*, and *after* an earthquake to ensure the safety and well-being of your residents, your staff and your facility.

Wherever possible, checklists are provided. In some areas, residential care and community care facilities will need to undertake greater preparedness and response measures than will those facilities offering independent living arrangements. While this document focuses specifically on earthquake preparedness, natural disasters of one form or another can strike any place, any time. The actions necessary to prepare for your response to and recovery from an earthquake, are applicable to other types of disasters.

A Facility Director's Checklist follows. It summarizes the actions you need to take in the areas of hazard mitigation, response planning, education, and recovery planning to prepare for a damaging earthquake. Throughout these guidelines, information will be provided for you on how to address each item listed on the checklist.

FACILITY DIRECTOR'S CHECKLIST

Reviewing this checklist is the first step toward comprehensive earthquake preparedness. Upon completing the checklist, go through the guidelines and develop preparedness plans for those areas you have not addressed in your facility or those which need to be strengthened.

BEFORE THE EARTHQUAKE

HAZARD MITIGATION

- Has a seismic evaluation of your facility been conducted?
- Have nonstructural hazards in building systems, offices, common areas, and living environments been identified and reduced?
- Have you arranged for a damage assessment immediately following a damaging earthquake?

RESPONSE PLANNING

- Have you selected a Command Center location and back-up in case your first choice is not usable?
- Have plans been developed to carry out response functions?
- Do all staff know their responsibilities following a damaging earthquake? Have they received adequate training?
- Do you have an evacuation plan? Have you tested the plan?
- Do you have plans for relocating to another site if necessary? Do you have an arrangement to use that site?
- Have inventories been developed and maintained of critical supplies and equipment?
- Do you have the necessary communications and back-up power equipment?
- Have procedures been established to inform residents and their families about the essential elements of your response plan?
- Are there hazardous materials on-site? Have plans been developed for identifying and containing them?

- Have you included neighborhood residents in your response planning?

EDUCATION AND PREPAREDNESS

- Does everyone (staff and residents) know what to do *during an earthquake*?
- Have all employees been trained in basic first aid?
- Do you hold drills and exercises to test various aspects of your plan?
- Have you ensured that staff are prepared at home? Do they have a family earthquake plan?
- Have you recommended (required) preparedness steps on the part of your residents?
- Have you considered volunteers (especially neighborhood people) in your education and response planning?

RECOVERY PLANNING

- Have you minimized potential damage by having a structural evaluation and reducing nonstructural hazards?
- Have you established a system for communicating with your residents? For assisting them to meet immediate needs?
- Have you established a system for relatives of your residents to learn of their status?
- Have you analyzed the impact of a reduced cash flow and established a disaster contingency fund?
- Have you made response expectations clear to staff and clarified recovery responsibilities?
- Have you established agreements with suppliers and contractors to receive services in a timely manner?
- Do you have a back-up (preferably off-site) copy of all important business records and resident and employee information?

- Do you have earthquake insurance? Do you know what it will and will not cover?
- Do you have a plan to maintain security at your facility and for your residents?
- Are you familiar with the information you will need to apply for disaster assistance, undertake repairs/rebuilding, or obtain necessary inspections? Do you know where to find it?

DURING THE EARTHQUAKE

- Do all staff and residents know what to do during an earthquake? (**DUCK, COVER & HOLD**)
- Are people with mobility problems aware of alternatives to **DUCK, COVER & HOLD**? (Remain seated or sit down; cover head with arms)

AFTER THE EARTHQUAKE

- Is all necessary information and equipment in place to quickly activate your Command Center?
- Are communications arrangements adequate (battery-powered radio, cellular phones, walkie-talkies)?
- Do you have a well-tested evacuation plan?
- Is your recovery plan in place so that you can move smoothly from emergency response to recovery activities?
- Have you considered how to handle emergencies such as fires, water leaks, or gas leaks without assistance from usual responders?

* *Address the language needs of non- or limited-English speaking residents and staff in your preparedness planning, training, and drills. Materials are available in Spanish and several Asian languages from BAREPP and SCEPP. The American Red Cross also has materials in many languages.*

BEFORE THE EARTHQUAKE

The actions you take before an earthquake greatly increase your chance to survive, to continue functioning, and to manage the short and longer-term recovery process effectively. Evaluating your facility for seismic safety, reducing nonstructural hazards, developing a response plan, training staff, educating residents, and planning for recovery are all things that you can do *before* a damaging earthquake. Taking these steps will directly affect how well you come through the event and how quickly you can re-establish normal operations.

In this section, we will address all preparatory steps in terms of **WHAT TO DO** and **HOW TO DO IT**.

FACILITIES

A. FACILITIES

1. Seismic Evaluation

It is important to know the seismic soundness of your facility. Engage an engineering firm experienced in seismic analysis to evaluate your building(s). This analysis should include:

- ◆ Soils testing
- ◆ Age of building(s)
- ◆ Type of construction
- ◆ Identification of potential weak points and recommendations for strengthening them
- ◆ Nonstructural building systems and elements

The facility evaluation will give you a good idea of how you can expect your building(s) to perform in an earthquake and what, if any, specific problem areas exist. The validity of this evaluation over an extended period of time will depend on how well you maintain the building(s). The evaluation should be updated after any adverse impact on the site (i.e. landslide, flooding, excessive settling) and after an earthquake.

2. Damage Assessment

The first few days following a damaging earthquake are a time of confusion and greatly over-taxed services. One of the first, and possibly most difficult, decisions you may have to make is whether or not your facility (or parts of it) is safe for continued occupancy. In most instances, it is *impossible* for an *untrained* person to tell the difference between structural and cosmetic damage.

Therefore, it is important to arrange to have a trained person perform

a damage assessment of your facility as soon after a damaging earthquake as possible. Prior to the earthquake, consider:

- ◆ Contacting your local building department and asking to be included on a priority list for damage assessment following an earthquake, and/or
- ◆ Arranging for a structural engineer to assess your facility for structural damage immediately following an earthquake. Be sure that your facility is *easily* accessible from the engineer's office.

3. Nonstructural Hazards

Nonstructural hazards are building systems and elements in the working and living environments that have nothing to do with holding up the building. Nonstructural hazards are responsible for many injuries during an earthquake and collectively account for up to 80% of a building's value. Extensive damage to nonstructural systems can be financially devastating.

In addressing nonstructural hazards in your facility be sure to include:

- ◆ Building systems (heating/cooling, lighting, elevators, equipment)
- ◆ Building exterior and facades
- ◆ Building windows
- ◆ Common areas such as lounges, dining rooms, and reception areas
- ◆ Offices and storage/maintenance areas
- ◆ Resident living areas

Checklists for **Facility Nonstructural Hazards** and **Individual Resident Nonstructural Hazards** are included on the following pages.

CHECKLIST OF NONSTRUCTURAL EARTHQUAKE HAZARDS

FACILITY

HOW TO USE THIS CHECKLIST

This checklist is intended to be used in surveying buildings to determine whether the contents or nonstructural elements pose a danger to building occupants during an earthquake. The list should be used in conjunction with *Reducing the Risks of Nonstructural Earthquake Damage: A Practical Guide*,* BAREPP's 'how to' guide to reducing nonstructural hazards in the home and workplace.

The check-off box next to each category of nonstructural item may be used for one or more of the following purposes:

- to simply indicate whether any of that particular kind of potential hazard is present;
- to list the quantity of items of that type found;
- to note photo numbers when the nonstructural survey will include photographs.

The checklist can be used with a clipboard to conveniently collect information, and then it can be transferred and organized into the format of Figure 17 from the *Practical Guide*:

Field notes made on this Checklist are then.....



organized on the table of Fig. 17 of *Practical Guide*.

CHECKLIST OF NONSTRUCTURAL EARTHQUAKE HAZARDS

OVERHEAD ELEMENTS

Are spot lights unable to remain securely attached if they were shaken?

Do sound system speakers in elevated locations lack positive bracing?

Are suspended space heaters, especially gas-fired, unbraced and/or lacking flexible gas connections? (p. 30)

Do hanging plants or displays lack braced supports, or would they hit a window if they swung?

Could chandeliers swing and impact each other or windows?

Are air distribution grids or diffusers only loosely mounted (rather than screwed to adequately supported steel ducts or to the ceiling or wall)? (p. 30)

Are large metal air distribution ducts, especially if they are suspended a few feet, adequately braced?

Do the suspended ceiling lack diagonal bracing in rows? (note 4) (p. 43)

Are the lay-in fluorescent light fixtures directly resting on the hung ceiling grid, without positive independent supports such as at least two hangers, wires, per light fixture? (p. 48)

Are pendant or stem light fixtures free to swing excessively? (p. 48)

Are decorative ceiling panels or lattice-work adequately attached? (p. 48)

ELECTRICAL EQUIPMENT

Are emergency battery-powered lights prone to falling off their supports?

Are transformers or tall switchgear not strongly anchored? (p. 34)

Are radon or other electrical telecommunications equipment well-secured?

Are tall telephone or telecommunication racks well-braced?

Are unsecured large pieces of equipment served by large diameter ducts, without allowance for slippage of the ducts?

Is the emergency power motor/generator adequately secured, especially if mounted on motor vibration isolation springs? (p. 49)

Are the batteries for the emergency power generator unsecured? (p. 49)

Is the fuel tank for the generator unbraced?

MECHANICAL EQUIPMENT

Are fans, chillers, pumps, or other heating-cooling or conditioning equipment that is typically found in mechanical rooms unsecured, or mounted on vibration-isolation springs without seismic restraint cables? (p. 50)

Are large diameter pipes unbraced, or do pipes cross expansion joints without accommodation for movement? (p. 51)

Are the fire sprinkler pipes without a 1/2" brace to the wall, or are the large diameter speaker pipes without diagonal straps to the structure above? (note 6)

Are the water heaters un-anchored?

Are the water heaters un-anchored to the frame or boiler-structure?

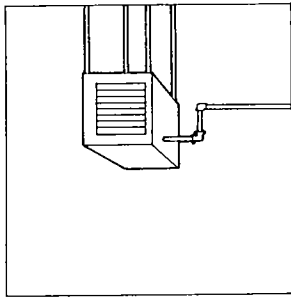


Figure 17
Summary Chart
Assumed Intensity

PRIORITY	NONSTRUCTURAL ITEM	LOCATION	QUANTITY	VULNERABILITY	ESTIMATED RETROFIT COST, EACH ITEM	ESTIMATED RETROFIT COST, SUBTOTAL	Notes
TOTAL							
+ LIFE SAFETY HAZARD		\$ % OF REPLACEMENT VALUE DAMAGED		POST-EARTHQUAKE GUIDELINE			

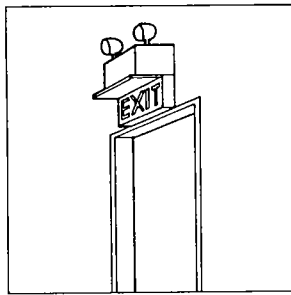
* *Reducing the Risks of Nonstructural Earthquake Damage: A Practical Guide* is available from BAREPP.

CHECKLIST OF NONSTRUCTURAL EARTHQUAKE HAZARDS



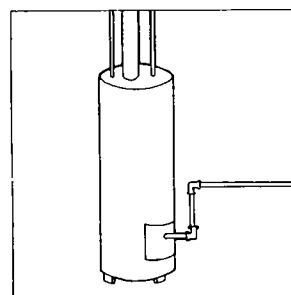
OVERHEAD ELEMENTS

- Does the suspended ceiling lack diagonal bracing wires? (note 4) (p. 43)
- Are the lay-in fluorescent light fixtures merely resting on the hung ceiling grid, without positive independent support such as at least two hanger wires per light fixture? (p. 48)
- Are pendant or stem light fixtures free to swing excessively? (p. 48)
- Are decorative ceiling panels or latticework insecurely attached? (p. 48)
- Are spot lights unable to remain securely attached if they were shaken?
- Do sound system speakers in elevated locations lack positive anchorages?
- Are suspended space heaters, especially gas-fired, unbraced and/or lacking flexible gas connections? (p. 56)
- Do hanging plants or displays lack closed eye-hooks, or would they hit a window if they swung?
- Could chandeliers swing and impact each other or windows?
- Are air distribution grills or diffusers only loosely mounted (rather than screwed to adequately supported sheet metal ducts or to the ceiling or wall)? (p. 50)
- Are large metal air distribution ducts, especially if they are suspended a few feet, without diagonal bracing?



ELECTRICAL EQUIPMENT

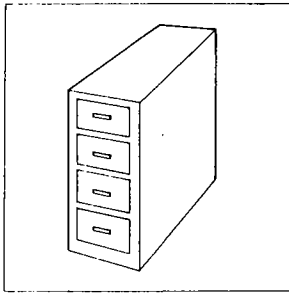
- Is the emergency power motor-generator inadequately secured, especially if mounted on motor vibration isolation springs? (p. 49)
- Are the batteries for the emergency power generator unsecured? (p. 39)
- Is the fuel tank for the generator unbraced?
- Are emergency battery-powered lights prone to falling off shelf supports?
- Are transformers or tall switchgear not strongly anchored? (p. 34)
- Are radios or other essential telecommunications equipment unsecured?
- Are tall telephone or telecommunications racks unbraced?
- Are unsecured large pieces of equipment served by large diameter conduit, without allowance for distortion of the conduit?



MECHANICAL EQUIPMENT

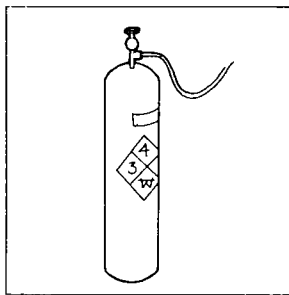
- Are fans, chillers, pumps, or other heating-ventilating-air conditioning equipment that is typically found in mechanical rooms unrestrained, or mounted on vibration-isolation springs without seismic restraint added? (p. 49)
- Are large diameter pipes unbraced, or do pipes cross expansion joints without accommodation for movement? (p. 53)
- Are the fire sprinkler risers without a v-brace to the wall, or are the large diameter sprinkler pipes without diagonal braces to the structure above? (note 6)
- Are the water heaters unrestrained?
- Is the furnace or boiler unrestrained?

CHECKLIST OF NONSTRUCTURAL EARTHQUAKE HAZARDS



EQUIPMENT AND FURNISHINGS

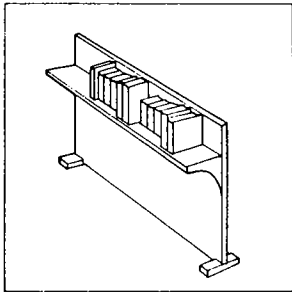
- Do desktop computers have unsecured monitors? (p. 38)
- Are the tops of tall (4- or 5-drawer) file cabinets unsecured at their tops to the wall? (p. 37)
- Do file cabinet drawers lack latches? (p. 37)
- Are large and heavy office machines unrestrained and located where they could slide a few inches and fall off counters to the floor or roll a couple feet on casters and block exits?
- Are computers, tape racks and associated mainframe computer equipment, that are about twice as tall as wide, unbraced? (p. 33)
- Are raised computer floors unbraced, such as is the case when the short posts supporting the floor are not bolted to the concrete slab at their base plates? (p.33)
- Are tall storage cabinets or lockers unattached to the wall or unattached back-to-back to each other? (p. 37)
- Do tall industrial storage racks lack adequate bracing or, for racks significantly taller than wide, are large anchor bolt connections to the concrete slab lacking? (note 1) (p. 44)
- Are heavy or potentially sharp wall decorations insecurely mounted (without closed eye-hooks for example)?
- Do valuable, fragile art objects lack protection against tipping over or sliding off shelves or pedestals? (p. 36)
- Are refrigerators or ranges unrestrained by built-in kitchen cabinetry or attachments to floor or wall?
- Is specialized industrial or other equipment placed on countertops without protection against sliding off and falling? (p. 38)
- Is floor-supported freestanding industrial or other large equipment unsecured against overturning (if about twice as tall as wide) or sliding (if sliding a couple feet would cause a hazard)?
- Are fire extinguishers insecurely mounted? (p. 46)
- Are potted plants or miscellaneous heavy items placed on top of file cabinets or other high locations without restraint? (p. 35)
- Are display cases or aquariums unprotected against overturning or sliding off tables?



HAZARDOUS MATERIALS (note 5)

- Are compressed gas cylinders unsecured, or secured only with one loose or weak chain, rather than tightly secured with a nylon strap, a strong chain near the top and near the bottom, or a rack designed to restrain cylinders? (p. 64)
- Are laboratory chemicals on shelves unrestrained? (p. 45)
- Do tanks or vats lack earthquake bracing? (p. 45)
- Does hazardous material piping lack accommodation for movement where it connects to equipment which could slide, swing, or tip, or where piping crosses expansion joints structurally separating wings of a building? (p. 53)
- Are automatic gas shut-off devices (excess flow, leak detector actuated, or earthquake triggered) lacking, even though especially hazardous substances are piped through a building?
- Is equipment containing hazardous material unsecured and prone to sliding or overturning, with the potential of causing a spill?
- Are containers of hazardous materials stored on unbraced storage racks or tall pallet stacks? (note 1)

CHECKLIST OF NONSTRUCTURAL EARTHQUAKE HAZARDS



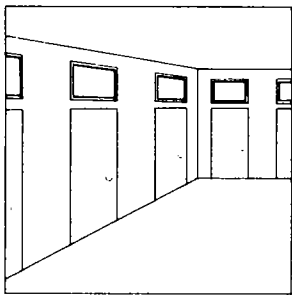
PARTITIONS

Are freestanding, movable, partial-height partitions (especially if supporting bookshelves) inadequately braced? (p. 40)

Do partitions lack plastic or safety glass panels? (p. 42)

Are masonry partitions unreinforced (usually brick or hollow tile walls in pre-1933 buildings in California)? (note 3)

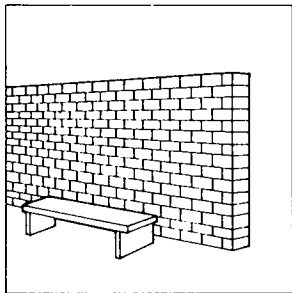
Do lightweight drywall partitions extend only as high as the hung ceiling, without braces or other support by the structure above, and are these partitions used as lateral support for tall shelving or cabinets? (p. 41) (note 2)



WINDOWS

Are large panes of non-safety glass present, and is it unknown whether the mounting of the panes was designed by architect/engineer to accommodate expected seismic distortion of the surrounding structure? (p. 42)

Are transoms (glass panes over doors) of non-safety glass? (p. 42)



EXTERIORS

Are decorations or appendages inadequately attached? (note 7) (p. 47,55)

Are statuary or decorative objects unanchored?

Are fences made of concrete, concrete block, stone, or brick, inadequately reinforced to resist earthquakes, or is their earthquake resistance unknown? (note 7)

Are large trees leaning or in poor health?

Is signage inadequately secured, especially if heavy? (p. 47)

Are lights inadequately attached?

Is the natural gas meter large and heavy, yet unsecured against sliding that could cause a pipe to leak?

NOTES

All parenthetical page numbers are references to *Reducing the Risks of Nonstructural Earthquake Damage: A Practical Guide*.

1. See Uniform Building Code (UBC) Table 23-J and UBC Standard No. 27-11
2. For partitions over six feet high, see UBC Table 23-J.
3. Unreinforced masonry is now prohibited by the UBC for use in load-bearing or nonstructural partitions throughout California as well as in some lower seismic zones in the United States, but unreinforced masonry was common in older construction.
4. See UBC Table 23-J and UBC Standard No. 47-18.
5. Table 23-J was revised in the 1985 edition of the UBC to specifically include "supports and bracing, equipment racks and piping for hazardous production material."
6. See National Fire Protection Association (NFPA) Standard No.13.
7. See UBC Table 23-J.

CHECKLIST OF NONSTRUCTURAL EARTHQUAKE HAZARDS: INDIVIDUAL RESIDENT

FURNITURE

- Is bed and favorite chair a safe distance from windows?
- Are bookcases secured to the wall?
- Are refrigerators and stoves restrained by built-in cabinets or attachments?
- Do cabinets have positive latches?
- Are display cases and aquariums protected against falling over?
- Does desktop computer have its monitor secured?
- Are large cupboards, china cabinets, dressers and wardrobe closets attached to the wall?
- Is large clock secured to wall?
- Are television and stereo secured?
- Is microwave (or any other portable cooking appliance) secured?
- Are fan and electric heater secured?

DECORATIVE ITEMS

- Are potted plants and miscellaneous heavy objects restrained - or close to floor?
- Are mirrors and pictures securely attached to wall stud?
- Are hanging plants, pots and pans, and other displays hung with closed hook eyes?
- Are hanging items a safe distance from windows, so they will not break windows when swinging?
- Are chandelier-type light fixtures secured so they will not impact each other or windows?
- Are books and other objects on shelves and mantels secured?

RESPONSE PLANNING

B. RESPONSE PLANNING

An emergency response plan is necessary to enhance the safety and well-being of residents and employees during and following a damaging earthquake. There are several actions that must be carried out as soon as the shaking stops. How you organize and assign responsibility for these functions depends on your staffing pattern. Be sure to address and assign responsibility for each function in terms of daytime, evening, and night-time coverage.

1. Organization and Functions

Command Center

Identify the location in your facility which you and your staff will use as a coordination/command center. At a minimum, ensure that you have:

- ◆ A copy of your Emergency Plan
- ◆ Back-up power (emergency generator, in working order, appropriately secured, with adequate fuel supply)
- ◆ Two-way radios for immediate communication
- ◆ Facility floor plans, showing the turn-off locations for gas, water and, electricity, locations of fire extinguishers and exits and location of emergency generator
- ◆ Employee data sheets
- ◆ Resident information (Identification and Emergency Information Forms)
- ◆ Resident control master list (for anyone leaving the facility site)
- ◆ Extra copies of all relevant forms and lists

Response

The functions to be undertaken by you and your staff as an immediate response to a damaging earthquake are:

- ◆ Site Security
- ◆ Fire Suppression
- ◆ Search and Rescue
- ◆ First Aid

If adequate staff is available, these activities should be undertaken simultaneously, with staff pre-assigned their primary responsibility. In independent living situations, you may wish to establish a preparedness committee of residents and include members of this committee in both preparedness and response planning for the facility. Involving and assigning interested residents responsibilities in planning efforts and organized response functions can greatly enhance your overall capability.

If adequate staff is not available to undertake response functions simultaneously, they should be carried out in the following order:

1. Site Security:

Check and turn-off gas, and/or electricity only if gas can be smelled or if other damage is evident. Make sure emergency generator is functioning, and emergency power is on. Turn-off water if pipes are broken or leaking.

2. Fire Suppression:

Check for and suppress small fires. Attempt to notify fire department.

3. Search and Rescue:

Quickly search the facility for people who may be trapped or injured. Assist if possible. Note and record situation for other responders, including names and location.

4. First Aid

Administer first aid to injured persons. Note and record injury for assistance from other responders, including names and locations.

Evacuation

It may be necessary to evacuate all or part of your facility following an earthquake. The threat of fire and/or structural damage to the building(s) could make them unsafe either after the initial earthquake or in the event of strong aftershocks. *You may have to decide whether or not to evacuate without benefit of a professional damage assessment evaluation.*

It is very important to have a comprehensive evacuation plan. All facilities are encouraged or required to have a fire evacuation plan. Your earthquake evacuation plan can follow the same basic procedures, but keep in mind the following:

- ◆ You may need to communicate the order to evacuate without use of any power operated signals.
- ◆ There may be debris in hallways and doors may be jammed.
- ◆ Injured or mobility impaired people will need assistance.
- ◆ Staff and residents need special training to deal with the situations mentioned above.

Arrangements should be made to assist or care for residents in the event you cannot re-enter your building.

- ◆ Obtain and list the locations of identified Red Cross shelters nearest your facility. (Always check which shelters near your facility are open and can accommodate your residents before transporting people to any site.)
- ◆ Survey possible temporary shelter options near your facility and discuss the possibility of use as a temporary shelter with

appropriate authorities (i.e. churches, community/senior centers, schools).

- ◆ Identify and plan for necessary transportation.
- ◆ Develop a system for letting authorities, family, and friends know where residents are being sheltered.
- ◆ Explore "mutual aid" agreements with other easily accessible residential facilities.

Planning and carrying out an effective post-earthquake evacuation requires attention to many details in addition to those mentioned above. For residential care, this includes awareness of adaptive physical devices used by the residents, necessary medications, mental ability to grasp what is happening, and equipment available for those residents who have special medical needs for such things as oxygen and intermittent positive pressure machines.

Checklists for **Response Readiness and Developing and Evaluating An Evacuation Plan** follow, along with a **Sample Floor Plan** and a **California Resident I.D. and Emergency Information Form**.

RESPONSE READINESS CHECKLIST

This checklist highlights activities under each response function that need to be addressed in order to ensure an effective response to a damaging earthquake.

Overall Facility: Responsibility of Facility Director and/or Staff/Resident Planning Committee

- Maintain staff awareness of earthquake threat
- Hold drills and arrange/conduct training
- Inventory the staff for skills that may be useful earthquake planning -- ham radio operator, CPR certified, bilingual
- Make sure that the area to be used as a Command Center contains a floor plan of the facility, a current personnel roster, critical phone numbers and a dependable communications system ham radio, cellular phones or citizens band radio
- Designate a spokesperson for the media
- Develop a release plan for your staff that takes into account family and other responsibilities outside the workplace
- Promote employee family preparedness
- Promote resident preparedness
- Encourage staff and residents to keep an emergency kit (food, water, flashlight, medication and sturdy shoes) in a safe, accessible place
- Place identification on door or outside window of mobility impaired persons to alert helpers that occupants need assistance evacuating

Command Center

- Assemble all necessary information and supplies/material (emergency plan, situation board, maps, markers, radios, walkie-talkies, personnel rosters) at designated Command Center location

- Define and assign functional responsibilities (incoming reports, display, response decisions, communications) to staff members, as specified in your emergency plan
- Identify and train all staff
- Participate in all planned drills and exercises, practice activating Command Center

Site Security

- Work with Planning Committee and the facility director to establish a policy for all employees which addresses both facility and personal needs
- Develop procedures for how release will be handled in view of available damage information -- for the site as well as in the larger community
- Coordinate expectations and responsibilities of staff as defined in plan
- Develop a plan for controlling access to facility and recording people leaving and arriving
- Carry out drills involving gas, water, electricity turn-off and activating emergency generators

Fire Suppression

- Make sure that extinguishers are in working order and that other equipment is complete and in easily accessible places
- See that all staff have received training in equipment use and in how to notify fire department

Search and Rescue

- Make sure needed supplies (crowbars, hard hats, gloves) are on-site and accessible
- Make sure staff members stay current with their training

First Aid

- Make sure that first aid supplies are up-to-date and always complete
- Keep emergency cards (list of medical resources in area) and health cards (for each employee) up-to-date
- Develop method of direct communication from any area of the facility to the Command Center

Evacuation

- Keep plans for designated emergency assembly area current
- Make sure that necessary supplies are accessible
- List those residents who will need assistance in the event of an evacuation and develop a plan to assist and assign staff or other residents to help specific individuals
- Do practice drills

Because of turnover of residents and staff, orientation, equipment supply checks, and drills should be carried out on a quarterly basis, if not more frequently.

** Address the language needs of non- or limited-English speaking residents and staff in your preparedness planning, training, and drills. Materials are available in Spanish and several Asian languages from BAREPP and SCEPP. The American Red Cross also has materials in many languages.*

CHECKLIST FOR DEVELOPING AND EVALUATING AN EVACUATION PLAN

Organization -- provision is made, and responsibility assigned, for the following functions:

- Determining optimum evacuation routes (including alternates)
-- can be the same as fire route, but need not be
- Everyone in the building should **know** about evacuation routes and outside assembly areas
- Ordering evacuation
- Communicating orders to others
- Assessing the safety of the emergency assembly area
- Clearing the evacuation route or designating another
- Assisting in evacuation
- Helping mobility impaired persons
- Accounting for all employees and residents
- Shutting down utilities and equipment
- Securing the facility
- Announcing facility re-entry or another plan

Emergency Situation -- during an earthquake, everybody does one thing:

DUCK, COVER AND HOLD

Evacuation Orders -- consideration must be given to the following:

- Criteria to help you determine when not to evacuate
- Degrees of evacuation -- when each is called for:
 _____ Partial
 _____ Complete
- Procedure for communicating orders
- Procedure for transmitting other messages

Evacuation Process -- The following must be done:

- All areas searched and all people accounted for including staff and visitors
- Evacuation route and area checked
- Evacuation instructions developed and communicated
- All able-bodied people evacuated
- All mobility impaired people assigned to be helped by someone

Assembly and Accountability -- must have a system for:

- Accounting for everyone
- Reporting roll call results to your facility Command Center
- Communicating rescue needs to internal and external medical and rescue crews

Securing the facility -- there should be a system for:

- Closing all but one door of the building
- Checking the safety of the facility
- Reporting all findings to your facility Command Center
- Liaison with outside helping agencies (i.e. Red Cross, fire, police, public health, etc.)

Conclusion of Evacuation -- you must have a system for deciding to:

- Terminate the evacuation order
- Coordinate a return to the facility or
- Issue an order to move residents to another site

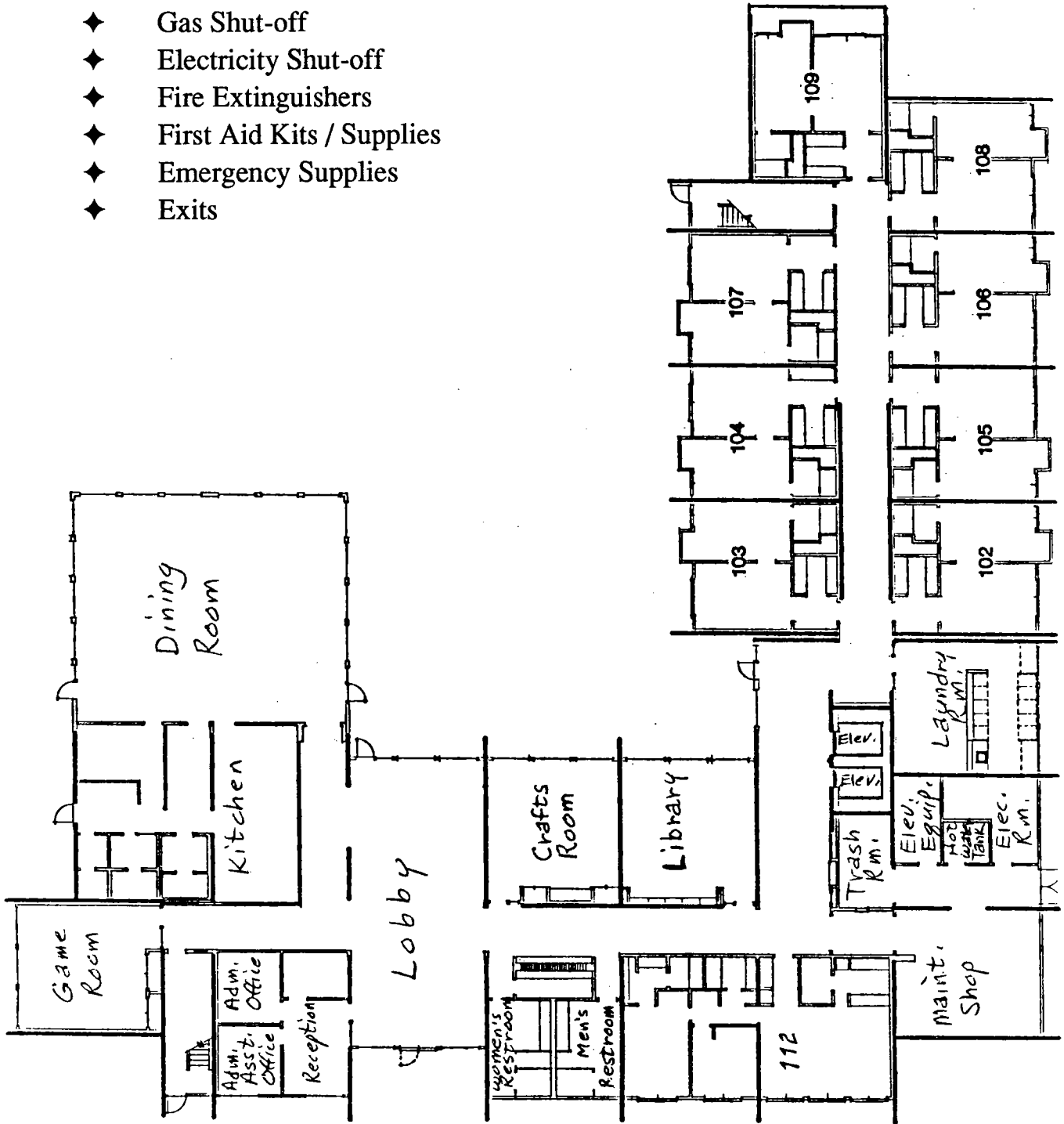
* *Address the language needs of non- or limited-English speaking residents and staff in your preparedness planning, training, and drills. Materials are available in Spanish and several Asian languages from BAREPP and SCEPP. The American Red Cross also has materials in many languages.*

Adapted from City of San Jose, Office of Emergency Services, Facility Evacuation for Business and Industry, n.d.

SAMPLE FLOOR PLAN

Identify locations of

- ◆ Water Shut-off
- ◆ Gas Shut-off
- ◆ Electricity Shut-off
- ◆ Fire Extinguishers
- ◆ First Aid Kits / Supplies
- ◆ Emergency Supplies
- ◆ Exits



This information is required under the H & S Code and the regulations of the Department to be maintained on every person admitted to a community care facility, to be readily available to the person in charge, but not accessible to unauthorized persons. All information must be kept current. See other side for additional information required for residential facilities for children.

RESIDENT ID FORM

A. ALL FACILITIES (EXCEPT CHILD CARE FACILITIES; COMPLETE LIC 700)

1. NAME OF CLIENT OR CHILD	SOCIAL SECURITY NUMBER (OPTIONAL)	DATE OF BIRTH	AGE	SEX
2. RESPONSIBLE PERSON OR PLACEMENT AGENCY	ADDRESS		TELEPHONE ()	
3. NAME OF NEAREST RELATIVE (OPTIONAL)	RELATIONSHIP	ADDRESS	TELEPHONE ()	
4. DATE ADMITTED TO FACILITY	ADDRESS PRIOR TO ADMISSION			
5. DATE LEFT	FORWARDING ADDRESS			
6. REASONS FOR LEAVING FACILITY				

7. PERSON(S) RESPONSIBLE FOR FINANCIAL AFFAIRS, PAYMENT FOR CARE, LEGAL GUARDIAN, IF ANY

NAME	ADDRESS	TELEPHONE
		()
		()
		()

8. OTHER PERSONS TO BE NOTIFIED IN EMERGENCY

	NAME	ADDRESS	TELEPHONE
a. PHYSICIAN			()
b. MENTAL HEALTH PROVIDER, IF ANY			()
c. DENTIST			()
d. RELATIVE(S)			()
e. FRIEND(S)			()

9. EMERGENCY HOSPITALIZATION PLAN

NAME OF HOSPITAL TO BE TAKEN IN AN EMERGENCY	NAME OF HOSPITAL TO BE TAKEN IN AN EMERGENCY
MEDICARE IDENTIFICATION NUMBER	MEDICAL IDENTIFICATION NUMBER
NAME OF DENTAL PLAN (IF ANY)	DENTAL PLAN NUMBER (IF ANY)

10. OTHER REQUIRED INFORMATION

a. AMBULATORY STATUS		
b. RELIGIOUS PREFERENCE	NAME AND ADDRESS OF CLERGYMAN OR RELIGIOUS ADVISOR, IF ANY	TELEPHONE ()
11. COMMENTS		

SIGNATURE OF PERSON COMPLETING FORM	TITLE	DATE
	28	

2. Staff Training

In order to respond effectively to a damaging earthquake, staff must be familiar with the facility plan, know what their responsibilities are and know how to carry out these responsibilities.

Ideally, staff members should be involved in developing the facility plan, as they can contribute many ideas to the content. Each will then know his/her own role as well as have an understanding of the overall response. Once the plan is developed, *staff training and practice drills* are two factors that are critical to ensuring that the plan can be implemented effectively.

The following is a suggested list of the training necessary to carry out response functions and where this training and/or assistance is available:

Facility Director

- ◆ Understanding of emergency situations coordination
- ◆ Familiarity with emergency communications capabilities
Assistance and/or training available from American Red Cross, local or county Office of Emergency Services

Staff

Site Security

- ◆ Familiarity with when and how to turn off utilities
- ◆ Understanding of techniques for storage of food and water and their distribution
- ◆ Knowledge of emergency sanitation provisions
- ◆ Knowledge of communications procedures
Training and/or advice available from local Office of Emergency Services, Red Cross, and utilities companies

Fire Suppression

- ◆ Knowledge of operation of different types of fire extinguishers
- ◆ Familiarity with when and how to turn off utilities

- ◆ Understanding of principles of fire safety, including techniques for extinguishing various kinds of fires and how to notify the fire department
Training and/or advice available from local fire department and/or local Office of Emergency Services

Search and Rescue

- ◆ Knowledge of systematic procedures for sweeping buildings and locating victims
- ◆ Mastery of basic victim extrication techniques
Training or information available from the Red Cross, local fire department, and local Office of Emergency Services

First Aid

- ◆ Familiarity with principles and techniques of first aid and cardiopulmonary resuscitation
- ◆ Understanding of principles of triage
Training available from the Red Cross

Evacuation

- ◆ Understanding of techniques for quick damage assessment
- ◆ Familiarity with procedures for crowd control
Training and/or advice is available from local Office of Emergency Services

Because most facilities are fairly large and the number of staff is limited, it is recommended that *all staff members be trained to carry out all emergency response functions and then be assigned specific areas of responsibility as appropriate.*

A sample Employee Disaster Data Sheet follows.

FACILITY NAME

ADDRESS:

TELEPHONE:

CONFIDENTIAL

EMPLOYEE DISASTER DATA SHEET

DATE: _____

UPDATE: _____

NAME: _____

HOME ADDRESS _____ PHONE: _____

If you reside near the agency, do you have space available to temporarily house staff members who cannot reach their homes? yes ____ no ____
How many people? ____

Emergency Contact:

Name: _____ Relationship: _____
Address: _____ Phone: (____) _____

Local contact person:
(if different from above)

Contact outside of Bay Area:
(preferably more than 100 miles)

Dependents (children/parents/grandparents)

NAME	AGE	SCHOOL/ADDRESS	PHONE CONTACT (8AM-5PM)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Special Health Considerations: (medications needed, allergies, etc)

Special skills willing to perform in the event of a disaster: (first aid, CPR certified, prepare food for staff on duty, support Command Center staff, etc)

Do you have any form of transportation that could be of assistance in a disaster (car, truck, van, bike, motorcycle, dolly/wagon to move "stuff", trailer, etc.)? Please specify.

Taking into consideration the severity of any given disaster, how soon after a disaster strikes MUST you leave work if you are on duty (to pick up children/dependents, etc.)?

How soon could you return to work (barring any personal/family injury or property damage/loss)?

3. Drills and Exercises

Engaging in earthquake drills and exercises is an important part of your preparedness plan. First, these activities teach employees how to respond to the complications of an actual earthquake. Second, they help you evaluate how well various aspects of your response plan work and how effective your staff training has been.

There are many different kinds of drills:

- ◆ Duck, cover, and hold
- ◆ Evacuation
- ◆ Tests of parts of the plan -- for example, "tabletop" or "walk-through" drills, in which employees meet once or twice a year to discuss what their roles will be during and after a quake
- ◆ Full-scale exercises (mock disaster) -- once every two years (more frequently, if you experience significant staff turn-over)

Before you conduct drills, some preliminary actions are necessary:

- ◆ Illustrations of possible damages -- structural and nonstructural (glass, bookcases, ceiling tiles, light fixtures)
- ◆ Demonstrations of ways to:
 - * protect head and body
 - * find shelter
 - * cope with resultant problems (fire, injury to self or others)
 - * evacuate the building

Tailor your drills to take into account the particular circumstances of your facility and residents.

A Drill Preparations Checklist for Facility Directors and a Staff Response Checklist for Drill Evaluation follow.

DRILL PREPARATION CHECKLIST FOR FACILITY DIRECTORS

1) Different drills require different preparations and practice schedules:

a) Duck, Cover and Hold

- Review drill rationale and procedures
- Practice the duck, cover and hold drill three or four times a year
- Review and practice alternatives with mobility-impaired and frail residents

b) Evacuation

- Practice post-quake evacuation at least twice a year
- Have groups walk through the normal fire drill route to an open area outdoors
- Ask everyone to make mental notes as they go along of things that might become hazards during and after an earthquake:
 - ◆ power failure (emergency lighting?)
 - ◆ halls and stairways cluttered with debris
 - ◆ smoke in the hallways
 - ◆ exit doors that are blocked or jammed
 - ◆ an aftershock (duck and cover on the spot)
 - ◆ bricks, glass, and other dangerous debris
 - ◆ fallen electrical wires
- When everyone returns, list all hazards and make plans to address them

c) First Aid

- To determine your first aid capabilities, stage a make-believe earthquake that causes injuries; give some employees messages in envelopes that describe an injury
- Stage a duck and cover drill, and then have the dead and injured people act out their assigned roles
- Employees have to determine what has happened and take actions to deal with all injuries
- Everyone is responsible for her/his own safety first, but all employees should know what to do if someone else is injured

and needs help. This drill should present everyone with "what if" questions:

- ◆ If someone is injured and can't walk?
- ◆ If someone has been cut by shattered glass and is bleeding?
- ◆ If someone has been knocked out by falling light fixtures or ceiling tiles?
- ◆ If someone has become very distressed?
- Practice this at least once a year

d) Tabletop or walk through

- Call a staff meeting and have someone read a description of an earthquake and the structural and nonstructural damages that have resulted
- Begin the discussion by asking employees to explain their responsibilities and how they would discharge them after the earthquake in question
- Note areas of overlap and confusion, and modify plan accordingly
- Practice this once a year--more frequently if there has been substantial staff turnover

e) Full-scale

- Preparing for full-scale drills requires fairly extensive staff commitment
- Enlist help from community agencies
- Hold a full-scale drill every two years
- Allow 2 or 3 hours for full debriefing within a week of the drill

2) Before and after the drills, hold meetings with staff and involved residents to discuss each team's respective responsibilities and recommended preparations for an earthquake emergency:

- ◆ Administrator--coordinate response
- ◆ First Aid
- ◆ Search and Rescue
- ◆ Site Security--direct police, medical, and fire personnel to places within building; close off building if necessary

- ◆ Fire Safety--special fire patrol; gas shutoff; fire department notification
- ◆ Evacuation--arrange evacuation area and organize evacuation to it
- ◆ Maintenance--food and water supplies; sanitation supplies and provisions
- ◆ Other (psychological aid, medications, etc.)

3) Discuss with all staff the plan's overall goals and purposes:

- a) Let the purpose of each part of the emergency plan (preparedness, emergency response, recovery) determine what a specific drill's goals should be
- b) Decide which kinds of drills can best test the goals
- c) List main objectives of each drill (reaction time, coordination, communication, training, etc.)
- d) Decide criteria for success and/or revision of plan's parts

4) Discuss and determine procedures for evacuating building:

(See Checklist for Developing and Evaluating an Evacuation Plan)

- ◆ Power fails
- ◆ Routes are blocked
- ◆ Aftershocks rearrange things
- ◆ Fire
- ◆ Injured people

Using the **Staff Response Checklist**, evaluate each drill and everyone's performance; begin immediately to make any indicated changes in the plan or its implementation and provide additional training as needed.

* *Address the language needs of non- or limited-English speaking residents and staff in your preparedness planning, training, and drills. Materials are available in Spanish and several Asian languages from BAREPP and SCEPP. The American Red Cross also has materials in many languages.*

STAFF RESPONSE CHECKLIST FOR DRILL EVALUATION

Facility Director

- Were all employees familiar with duck, cover and hold?
- Did everyone remain in the quake-safe position for 60 seconds?
- Were all employees accounted for?
- Were internal and external communications controlled?
- Was a record of events and decisions kept?
- Did staff remain calm and reassure others?
- Were all employees evacuated to a safe outdoor area?
- Did residents remain quiet during evacuation?
- Does the evacuation procedure consider the possibility of strong aftershocks?
- Were resident rosters and response checklists available?
- Did staff demonstrate ability to help each other?

First Aid

- Were first aid supplies up to date and complete?
- Were disaster data sheets for each employee up to date?
- Was staff ready quickly to begin treating the injured?
- Was a record kept of every treatment administered?
- Were needs for further medical assistance determined and reported?
- Were reports immediate and regular to the Command Center?

Search and Rescue

- Were supplies and equipment complete and easily located?
- Was every room in the building checked (visually, vocally and physically)? Look under beds, and tables, behind curtains and in closets.
- Were locations of injured reported for First Aid treatment?
- Were the locations of other problems reported to the Command Center?

Fire Suppression

- Was equipment ready and easily located?
- Was a systematic search for fires undertaken?
- Were fires reported to Command Center and Site Security?
- Was fire department notified?
- Were all fires controlled?
- Were residents at risk rescued?
- Were dangerous areas secured?

Site Security

- Were all equipment and records ready and easily located?
- Were all external gates and doors secured?
- Was someone stationed at the main gate/front door to deal with responders/volunteers/family members?
- Were fire, police, medical, and rescue sent to areas where they were needed?
- Was the Command Center constantly informed about what was going on?
- Were utilities checked immediately and any danger minimized?
- Was sanitation system checked and damages determined?
- Were all findings reported to the Command Center?

Evacuation

- Were plans for designated emergency assembly area current?
- Was the emergency assembly area accessible and determined safe?
- Were findings communicated to the Command Center?
- Were necessary supplies up to date and easily located?
- Was need to evacuate determined?
- Was there assistance in evacuation process?
- Was roll call taken and status of all residents/visitors reported to Command Center?
- Was group in the assembly area supervised for the duration?

4. Supplies and Equipment

After a damaging earthquake, it may not be possible for you, your staff, or your residents to leave or for emergency responders to get to your facility. You may spend *72 hours or longer* on the premises, without any significant help from outsiders.

Stocking supplies such as first aid kits, tools, water, and food in a secure place is therefore an important part of your preparedness plan. Keeping these supplies fresh and up-to-date is essential. It is a good idea to have inventories of supplies as well as written records of where they are kept and when they are rotated.

Identifying and obtaining supplies *that will meet the needs* of staff and residents require decisions and priorities that fit your particular residence or complex. Congregate senior housing facilities may make different decisions from retirement communities and residential care facilities. You do not have to get every earthquake supply on the market, but you need to be sure the basic items listed below are obtained.

- ◆ adequate first aid supplies
- ◆ flashlights and extra batteries
- ◆ extra fire extinguishers
- ◆ search and rescue tools
- ◆ battery - powered radios and extra batteries
- ◆ enough liquids for all the people in the building for 72 hours
- ◆ space blankets or heavy-duty plastic bags
- ◆ sanitation supplies
- ◆ useful non-prescription drugs
- ◆ adequate food for 72 hours

Your priorities in acquiring supplies should correspond to what will be most needed to save lives and deal with injuries immediately after the

earthquake. For example, first aid supplies are more important than food, and fire extinguishers are more important than non-prescription drugs.

The following pages provide fairly exhaustive lists of supplies and equipment necessary to respond effectively, and to care for staff and residents immediately after and for up to three days following a damaging earthquake. Information on storing/using emergency food and water, is included in this section. *Review the lists with your staff. Determine what you already have, what you need and in what quantity. Prioritize obtaining those additional items. For independent living complexes, share appropriate lists with the residents' preparedness committee and with individual residents.* Encourage residents to obtain basic survival supplies for 72 hours and to maintain them in their own living unit.

SUPPLIES/EQUIPMENT BY RESPONSE FUNCTION

Director/Command Center:

- Emergency plan
- Roster of employees
- Emergency assignment list
- Map of facility
- Evacuation Plan
- Walkie-talkie
- Bullhorn
- Battery-operated radio and batteries
- Clipboard
- Paper and writing implements
- Supply storage map
- Heavy gloves, hard hats, heavy shoes

First Aid:

- Health cards on each employee
- Emergency cards
- First aid supplies
- First aid equipment (blankets, stretchers)
- Flashlights
- Evacuation Plan
- Paper and writing implements
- Clipboard
- Non-prescription drugs
- Identification badge or armband
- Water purification tablets

Search and Rescue:

- Roster of employees/residents

- Map of facility
- Fire extinguishers
- Flashlights
- Axes and crowbars
- Shovels and ropes
- Master keys and bolt cutters
- Walkie-talkies

Fire Suppression:

- Fire extinguishers (CO2, water, and A,B,C type)-- check annually
- Shovels and axes
- Gloves
- Walkie-talkies

Site Security:

- Map of facility, with utility turnoffs and exits
- Evacuation Plan
- Master keys
- Walkie-talkies
- Signs to post and writing implements
- Identification badge or armband
- Tools for utility turnoff

Evacuation:

- Evacuation Plan
- Map of facility
- Employee roster
- Master keys
- Bullhorns
- Walkie-talkies
- Signs to post and writing implements

DISASTER MEDICAL SUPPLY KIT

*The supplies below will serve
approximately 150-200 persons for 72 hours.*

<i>Item</i>	<i>Quantity</i>
<input type="checkbox"/> Kerlix-type, bulky gauze bandages, 3" x 4 yds	30 rolls
<input type="checkbox"/> Gauze pads, 4" x 4"	400 pads
<input type="checkbox"/> Band-aids, 3/4"	100
<input type="checkbox"/> Triangular bandages	10
<input type="checkbox"/> Sterile surgical pads (as in ABD pads), 8" x 10"	40 pads
<input type="checkbox"/> Steri-strips, 1/2" x 4"	50
<input type="checkbox"/> Tincture of Benzoin, 4 oz. bottles	3 btls
<input type="checkbox"/> Silvadene Cream, 400 gram jars*	5 jars
<input type="checkbox"/> Elastic bandages, 6"	40
<input type="checkbox"/> Paper adhesive tape, 1" x 5 yds	12 rolls
<input type="checkbox"/> Sterile eye pads**	50 pads
<input type="checkbox"/> Cotton-tip applicators, 6"	200
<input type="checkbox"/> Cardboard splints, 18"	24
<input type="checkbox"/> Kwik Kold	32
<input type="checkbox"/> Liquid Soap (5 oz.)	6
<input type="checkbox"/> Disposable towels, 13" x 19"	500
<input type="checkbox"/> Facial Tissues	12
<input type="checkbox"/> Scissors (bandage, 5 1/2")	5
<input type="checkbox"/> Tweezers, 4 1/2"	2
<input type="checkbox"/> Tongue depressors (can be used as splints or to apply Silvadene Cream)	500
<input type="checkbox"/> Aspirin, 5 gr.	500 tabs
<input type="checkbox"/> Acetaminophen, 325 mgm.	500 tabs
<input type="checkbox"/> Safety pins, assorted	3 gross
<input type="checkbox"/> Paper cups, 3 oz.	400

★ ★ Inventory and replace missing items every six months ★ ★

* This is a burn dressing which should be used if no medical care is available. It can be put on 2" and 3" burns and lends relief and protection against infection.

** Eye pads are only as good as the irrigation of the injured eye is good. Don't put a sterile eye pad on a dirty wound.

*** Check expiration dates on topicals.

NON-MEDICAL EMERGENCY SUPPLIES AND EQUIPMENT

(Facility-wide)

- Axes, hatchets
- Space blankets
- Bullhorn (battery operated) and extra batteries
- Can opener, manual
- Coleman lantern and fuel
- Crowbars
- Cups, paper or plastic
- Fire extinguishers
- Flashlights with extra batteries
- Hammers
- Hardhats
- Hoses for fire-fighting and siphoning
- Knives, heavy duty
- Light sticks
- Masking tape
- Matches with wax-protected tips
- Pails
- Picks
- Plastic garbage bags--waterproof (for warmth and sanitation)
- Plastic water containers--number depends on population size
- Rope, nylon
- Saws, hand
- Screwdrivers
- Shovels
- Stretcher
- String
- Tarps, drop cloths
- Toilet paper
- Transistor radio, AM-FM, battery operated, extra batteries
- Walkie-talkies (hand-held) with extra batteries
- Wastebaskets with waterproof plastic liners
- Wire
- Wire cutters
- Wrenches

STORING WATER AND FOODS

STORING WATER

Water for drinking is the most important. Bathing and washing will take additional water.

You already have some water stored. The hot water heaters are full of water. Ice cubes can be melted. If there are no chemicals in the holding tanks of the toilets, there are a few gallons of water there that can be used. (Do not flush toilets until you know the state of the sewers and the water availability.)

Water can be safely stored in sturdy plastic jugs. Buy jugs specifically for this purpose or use empty bleach containers. Don't rinse them out since the remaining bleach acts as a purifier. Don't buy flimsy water or milk containers at the grocery store. Change water every six months and date the bottles.

If you have water pressure after a quake, start running some water into additional containers. It can be stored and purified later for drinking. The water from taps after a quake can be contaminated.

Water for Three Days (minimum)

Bottled spring water or one-gallon bottles filled to the top with fresh water and one teaspoon of chlorine disinfectant (sold commercially). This should last for one year.

Needs: 5 gallons all-purpose water per person per day
 1 quart drinking water per person per day

Note: Hot water tanks and toilet tanks contain some emergency water.

How To Purify Water:

Boiling: Boil vigorously for 1 to 3 minutes. To improve taste, pour from one container to another several times.

Purification Tablets: Available at any drug store. Follow directions on package.

Bleach Purification: Liquid household bleach can be used. It must contain hypochlorite, preferably 5.25%. Add according to table below then stir and mix.

Amount of Water	Clear Water	Cloudy Water
1 quart	2 drops	4 drops
1 gallon	8 drops	16 drops
5 gallons	1/2 tsp.	1 tsp.

STORING FOODS

■ If you do *not* have a cafeteria in your facility:

Have employees bring earthquake kits to work. Each kit should have such foodstuffs as granola bars, cans of juice, packages of dried fruit -- items that have a long storage life and are not easily squished. The amount of food should be sufficient to get them through *at least* 72 hours without severe hunger pains. These kits can be stored in desks or other handy places in offices. Once every six months, the supplies in the kits should be refreshed.

■ If you *do* have a cafeteria:

Make sure you date and rotate your food supplies so that they do not get old.

After an earthquake, use the food in the refrigerator and freezer first. Although the quake may not interrupt power, aftershocks or fires may; shortages elsewhere could also result in loss of electric current.

When opening cans of fruits or vegetables, do not throw away the liquid in which they are packed. This is another source of liquid if there is a water shortage.

Do not drink or eat anything from open containers near shattered glass. Strain suspected liquids through a clean handkerchief.

Food types for use in an emergency:

- A. Suggested canned foods:
Luncheon meat, ham, unsalted canned nuts, fruits, fruit juices, vegetables, date-nut rolls, soft drinks
- B. Suggested dry foods:
Cereals, peanut butter, crackers, granola or energy bars, instant coffee, tea, milk powder, sugar, candy, freeze-dried foods
- C. Suggested equipment and supplies:
Can openers (non-electric)
Pots, pans, serving utensils
Coffee pots
Paper cups, plates, bowls, napkins, towels
Plastic utensils, serving trays
Matches

EDUCATION and PREPAREDNESS

C. EDUCATION AND PREPAREDNESS

1. Staff

Education

All facility staff should be trained in response functions and evacuation techniques. They should also be familiar with the types of medical problems and mobility impairments of residents in your facility. It is important to recognize that residents living in retirement complexes may have various types of medical problems and mobility impairments. In a disaster such as an earthquake, these residents could need assistance.

Preparedness

- ◆ Each staff person should have his or her own emergency pack at work. Be sure to have a pair of thick-soled shoes in the pack, extra pair of eyeglasses and sturdy gloves which can be used immediately.
- ◆ Encourage residents to let you know if they use special medical equipment or adaptive equipment and maintain a central list of those individuals who may need assistance in the event of a disaster.
- ◆ Maintain a master file of where all individuals living in the facility are located.
- ◆ Maintain a central record of all residents and medications which they take (including the name of medicine, dosage and frequency) as well as special treatments and adaptive equipment used.

It is only natural that in any emergency or disaster an individual's first concern will be for his or her family and other loved ones. In order for you and your staff to carry out job related responsibilities, your family and

the families of your staff must be prepared to cope with the disaster without outside assistance. You need to take many of the same steps that you have taken to prepare your facility in order to have your staff and their families prepared for an earthquake.

- ◆ ensure structural soundness of home
- ◆ reduce nonstructural hazards
- ◆ store food, water, and other essential supplies
- ◆ make a family plan

2. Residents

Education

In a sense, the residents of your facility are an extended family for which you have varying levels of responsibility. The greater degree of awareness and preparedness on the part of residents, the easier your job will be following an earthquake.

For all independent living situations, residents should take the same actions as any other private household. These include:

- ◆ understand the earthquake threat
- ◆ reduce nonstructural hazards
- ◆ store emergency supplies
- ◆ know what to do when the shaking starts
- ◆ be familiar with the facility earthquake response plan

Develop a simple educational preparedness program that includes frequently practiced "Duck, Cover and Hold" exercises and evacuation drills. Have the residents practice the exercises and drills on a regular basis. Keep the signal used for the evacuation drill simple and use the same signal consistently. With repeated, on-going practice, many seniors will

maintain the physical movement of "Duck, Cover and Hold" and the evacuation routine for many years to come.

A resident education and preparedness program should be developed for every facility as part of on-going activities regardless of the ability of your residents. If they know what to expect and what to do, they can often provide some assistance during a major disaster. Program activities might be scheduled on a monthly or bimonthly basis and could include:

- ◆ discussion of the earthquake threat
- ◆ presentation of preparedness measures
- ◆ orientation to facility earthquake response plan
- ◆ highlight a monthly "preparedness step" (i.e., storing water, getting a flashlight, hazard check, replacing batteries, etc.)
- ◆ practice what to do when the shaking starts
- ◆ plan and carry out drills

Sample materials which can be used for education activities are included as Appendix B. Given the ethnic and cultural diversity of today's society, be sure that your earthquake preparedness planning, education, and training addresses the needs of residents and staff whose ability to speak or understand English is limited. Materials are available in several languages from BAREPP, SCEPP, and the American Red Cross (see Appendix A).

Preparedness

After the resident has moved into your facility, do the **Individual Resident Checklist - Nonstructural Earthquake Hazards**. A sample of this checklist is included under the Facilities section of these Guidelines.

When the checklist has been completed, provide a copy to the resident and review the non-structural hazards noted on the form. Suggest ways that these hazards can be corrected.

For residential care facilities, you and your facility staff will need to assume greater responsibility for reducing non-structural hazards in the living environments, for storing appropriate supplies and equipment, and for providing direct assistance to the residents following an earthquake. After the resident has moved into the residential care facility, do an **Individual Resident Checklist - Nonstructural Earthquake Hazards** and arrange to correct those items which were checked as hazardous.

For items listed below, retirement complexes should work with their residents to carry out these critical preparedness measures. In residential care facilities, it is the responsibility of management and staff to see that these steps are taken.

- ◆ If a resident has a medical problem and/or mobility impairment, such as loss of vision or hearing, he or she should be encouraged to wear a current medi-alert bracelet or tag. Allergies to any medication should also be listed on the plate.
- ◆ If a resident is on self-administered medication, he or she should place a list of the medication(s), dosage, frequency of taking medication, pharmacist's name and phone number, and doctor's name and phone number in a container in the front of the refrigerator and clearly label it **EMERGENCY INSTRUCTIONS**. This is important information which needs to be available if the resident becomes unconscious or confused.
- ◆ If a resident self-administers special treatments, have him or her write out detailed instructions, place them in a container in front of the refrigerator and label the container **EMERGENCY INSTRUCTIONS**.
- ◆ If a resident uses special adaptive equipment, such as an artificial leg, have the person write down a description of how to handle the equipment, place the instructions in a container in front of the refrigerator, and label the container **EMERGENCY INSTRUCTIONS**.
- ◆ If a resident takes a regular medication, encourage him or her to place a seven day supply with their emergency pack and rotate the medication twice a year with spring and fall time changes. Note: This type of storage cannot be done for medication such as insulin which needs to be refrigerated.

However, the resident should be sure to have an extra supply of needles and syringes with their emergency pack for use in the event of a disaster.

- ◆ If the resident uses special equipment requiring electricity, he or she should have a manual system available to use in a disaster. This may need to be a small emergency generator if the facility does not have a back up generator system that can accommodate the electrical needs of the special equipment of the resident. Note: Licensed Residential Care facilities would be responsible to be sure there is a back up electrical system that can handle the special equipment of the resident in the event of a power outage.

A Preparedness Summary for Residents is included at the end of this section.

3. Volunteers

In the aftermath of any disaster there are many people who wish to be of help. Some are volunteers associated with relief organizations who have pre-determined roles and responsibilities. Others will spontaneously offer their services.

To use volunteers effectively, you must plan. What actions will need to be taken following an earthquake? Of those, what could volunteers assist in, with or without supervision and training? Volunteers to assist you, your staff, and your residents following an earthquake will come from two sources. One will be those people who work with you as volunteers on an ongoing basis. The other source, and much more likely to be on the scene first, is people from your surrounding neighborhood.

Plan to ensure you will have volunteer help and that you can use this help effectively. Get to know your neighbors. Participate in neighborhood events from neighborhood watch meetings to garage sales. Encourage neighbors to visit your facility, participate in special events, and share expertise or experience they have with your residents through presentations or informal gatherings. Your neighbors are an important resource and should not be overlooked.

4. Special Impairment Preparedness

Vision-Impaired

Many elderly people have some type of visual impairment, but they are not totally blind. Staff need to be aware of the degree of vision impairment. If the person is blind and you need to have them leave the area, let the person hold your arm to follow. Items listed below may be helpful to individuals with visual impairments:

- ◆ Battery-operated talking clock or digital clock
- ◆ White cane
- ◆ Flashlight with strong wide beam
- ◆ Magnifiers or extra glasses
- ◆ Fluorescent tape on emergency supplies
- ◆ Fluorescent tape on back of exit door from room
- ◆ Shrill whistle
- ◆ If resident has a guide dog, be sure emergency water and food have been stored for the dog
- ◆ Develop a "buddy" system so a visually impaired resident can practice with a sighted partner during earthquake drills

Hearing-Impaired

It is not unusual for some elderly people to have hearing problems which may not be correctable with a hearing aid. It is also not unusual for a hearing aid to be inadequate when the person is under a lot of stress. In a disaster or emergency situation, the hearing aid may pick up and amplify background noises so that the individual does not hear instructions clearly. Staff will need to remember to speak slowly and directly to the person so they can lip read. If all else fails, paper and pencil may be necessary to communicate with the resident.

If the facility has a number of deaf residents, you may wish to install a strobe type lighting system which is tied into the electrical system, including the emergency power system. Another method of communicating is through a running line or crawler on the television screen. Special items that the resident should have in his/her emergency supplies include:

- ◆ Shrill whistle
- ◆ Extra batteries for hearing aids

Prior to a disaster, consider developing a "buddy" system with others who have no hearing impairment.

Mobility-Impaired

Staff needs to be aware of the resident's physical strength and ability to navigate in a disaster without the use of a wheelchair or walker. If a resident cannot navigate without the assistance of a walker or use of a wheelchair, he or she should wait for assistance.

If evacuation is necessary, staff need to be trained in the two person evacuation technique. In a disaster, the staff person may need to wait for volunteers to assist in evacuating individuals with mobility impairments. No staff person should attempt to move wheelchairs on stairways without assistance.

Oxygen-Impaired

Due to various lung conditions, such as severe emphysema, some individuals may use self-administered oxygen. These units are usually small and portable, with the individual having a larger tank at bedside to use while resting and at night. The large tanks should be securely fastened to the wall. Post signs and be sure everyone is aware that no smoking or striking of matches should occur in areas containing an oxygen tank. If the person is relocated to another area, secure the oxygen tank in the new location because of potential shaking from aftershocks. Assure the area is free of open flame devices, sparking wires and petroleum products.

Mentally Impaired

Some individuals who have mental impairments function very well in emergency situations while others may become more confused or respond in ways similar to a young child. Because of these varied potential responses during and following an earthquake, you and your staff will need to remain calm. Give whatever instructions are needed in a decisive and firm manner.

Explain what is happening as calmly as possible. You may need to repeat yourself frequently. Some residents may not be mentally able to understand what is happening. They may be afraid to be left alone and will cling to staff. They also may be afraid of new faces if people come to the facility to provide assistance during the disaster.

You and your staff will need to work within the mental limitations of your residents. As a guide remember:

- ◆ Give firm and clear instructions
- ◆ Speak in simple terms that are easily understood
- ◆ Give one instruction at a time
- ◆ If possible, pair with another resident whom they recognize
- ◆ Do not argue with the resident
- ◆ Do not make promises you cannot keep
- ◆ Be aware of your own limits
- ◆ Do what you can

Prior to an earthquake it is important to hold earthquake drills on a regular basis. Many people with various forms of mental impairment have shown the capacity to learn some expected and repeated routines. With this kind of continuing practice, you and your staff will minimize confusion for these residents during a major disaster.

In addition, consider promoting a "buddy" system so that these residents become used to another person in the facility.

Medical Equipment Dependent

Suction Machine - If a person uses a suction machine due to throat paralysis, tracheostomy or other medical condition, encourage the resident to have a hand operated suction device with his or her emergency supplies or a small emergency generator that can be used until electricity is restored.

Dialysis Machine - If a resident has a self-dialysis machine, you will need to arrange with the local hospital that has a dialysis unit or an outpatient satellite dialysis center for temporary services until electricity is restored. If equipment itself is damaged, the resident will need to receive ongoing treatment at one of the alternative sites.

Other Equipment - Any other equipment used for medical reasons by the residents needs to be evaluated on an individual basis to determine how the equipment can continue to be used in an emergency and what type of back-up system should be arranged. Discuss with the attending physician and determine in an emergency situation, how long the resident can survive without access to equipment listed above.

