



HOW TO DEVELOP A FUNCTIONAL EARTHQUAKE EXERCISE

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What are the Advantages of Earthquake Exercises?

- Meet Accreditation Requirements
- Meet Regulatory Requirements
- Comply with Grant Requirements
- **Assess and Improve Emergency Preparedness for Earthquakes**



Exercise Design & Development

What do you want to improve?

- Look at earthquake on your Hazard Vulnerability Analysis
- Test recent earthquake training or evacuation equipment
- Look at staff, patient and visitor safety
- Communication



Exercise Tools for Healthcare Facilities

Available at <https://emsa.ca.gov>,
<https://www.cahfdisasterprep.com/nhics>
and www.calhospitalprepare.org

- ICS, Nursing Home Incident Command System (NHICS) and Hospital Incident Command System (HICS) Tools
 - ✓ Earthquake Incident Response Guide and Planning Guide
 - ✓ Job Action Sheets
 - ✓ ICS Forms
- CMS Emergency Preparedness Rule
- The Joint Commission Six Critical Elements
- National Incident Management System (NIMS) Objectives for Healthcare

Exercise Design & Development

Identify the Planning Team

The list will vary
significantly
according to the
exercise

YOU may be the
entire Planning
Team





Exercise Design & Development

**What do you want to
test?**

**These become the
objectives**

Objectives (SMART)

- Specific
- Measurable
- Achievable
- Relevant
- Time-bound

Exercise Design & Development

Objectives – Example: If the facility needs to test sharing status with the government point-of-contact, the objective may be:

- *The Liaison Officer will notify the government point of contact using two or more communication tools (e.g., include Ham Radio, landline telephone, cell phone, ReddiNet or 800 MHz radio) during the exercise of their facility status.*

Exercise Design & Development

Objectives

Become familiar with developing objectives for your facility and staff needs

- Specific
- Measurable
- Achievable
- Relevant
- Time-bound

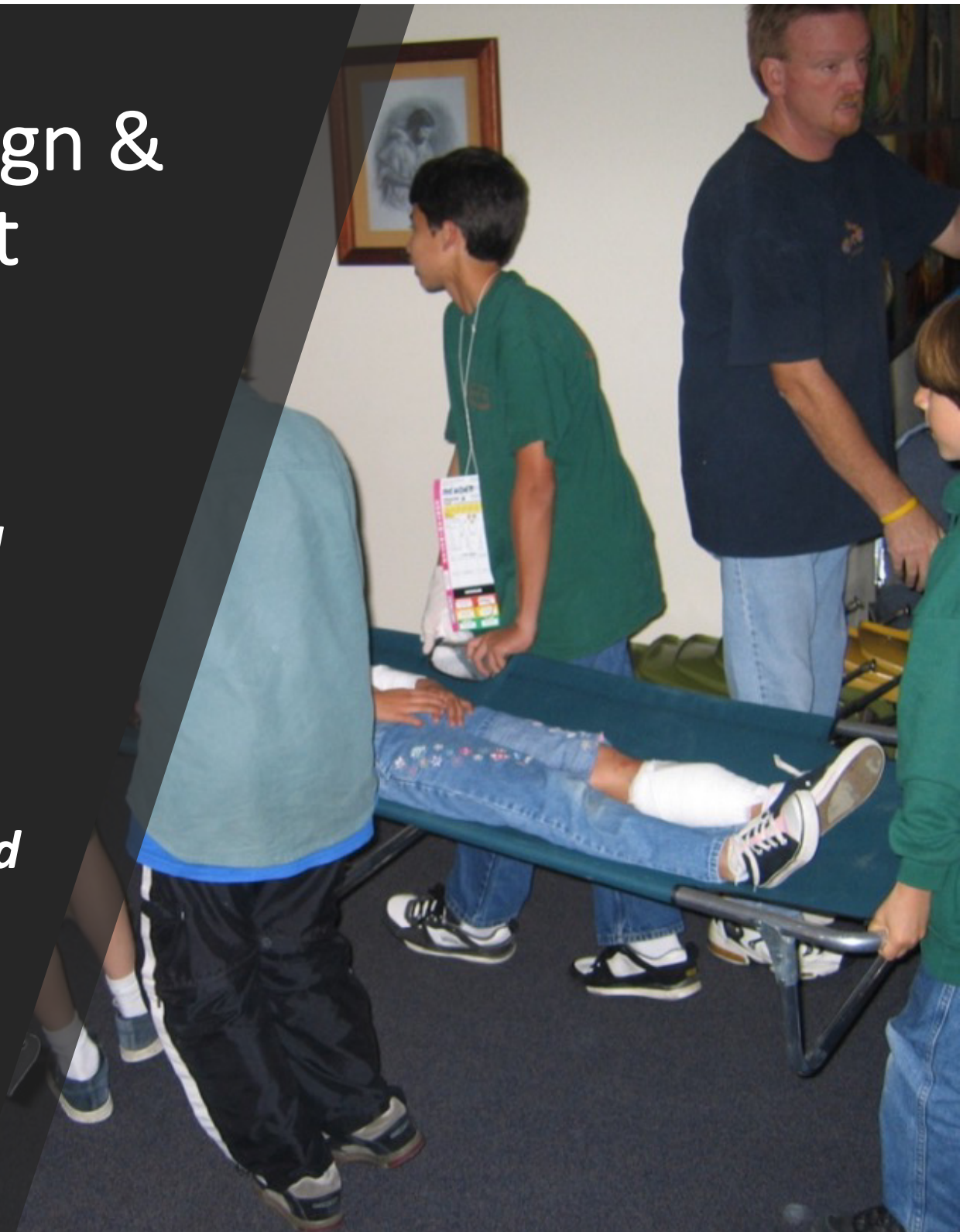
Instructions

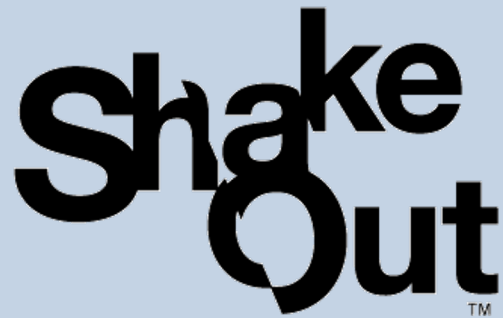
1. Write an objective for use in your earthquake exercise for your facility
 - Remember to think about who and what you want to test
 - Remember to use SMART objectives

Exercise Design & Development

Decide Earthquake Exercise Type:

- ***Discussion-Based***
 - ✓ Seminar
 - ✓ Workshop
 - ✓ Tabletop
- ***Operations-Based***
 - ✓ Drills
 - ✓ Functional
 - ✓ Full Scale





Great ShakeOut Earthquake Drills





Objectives: For Example

If the facility needs to test physical protective actions of employees during an earthquake, the objective may be:

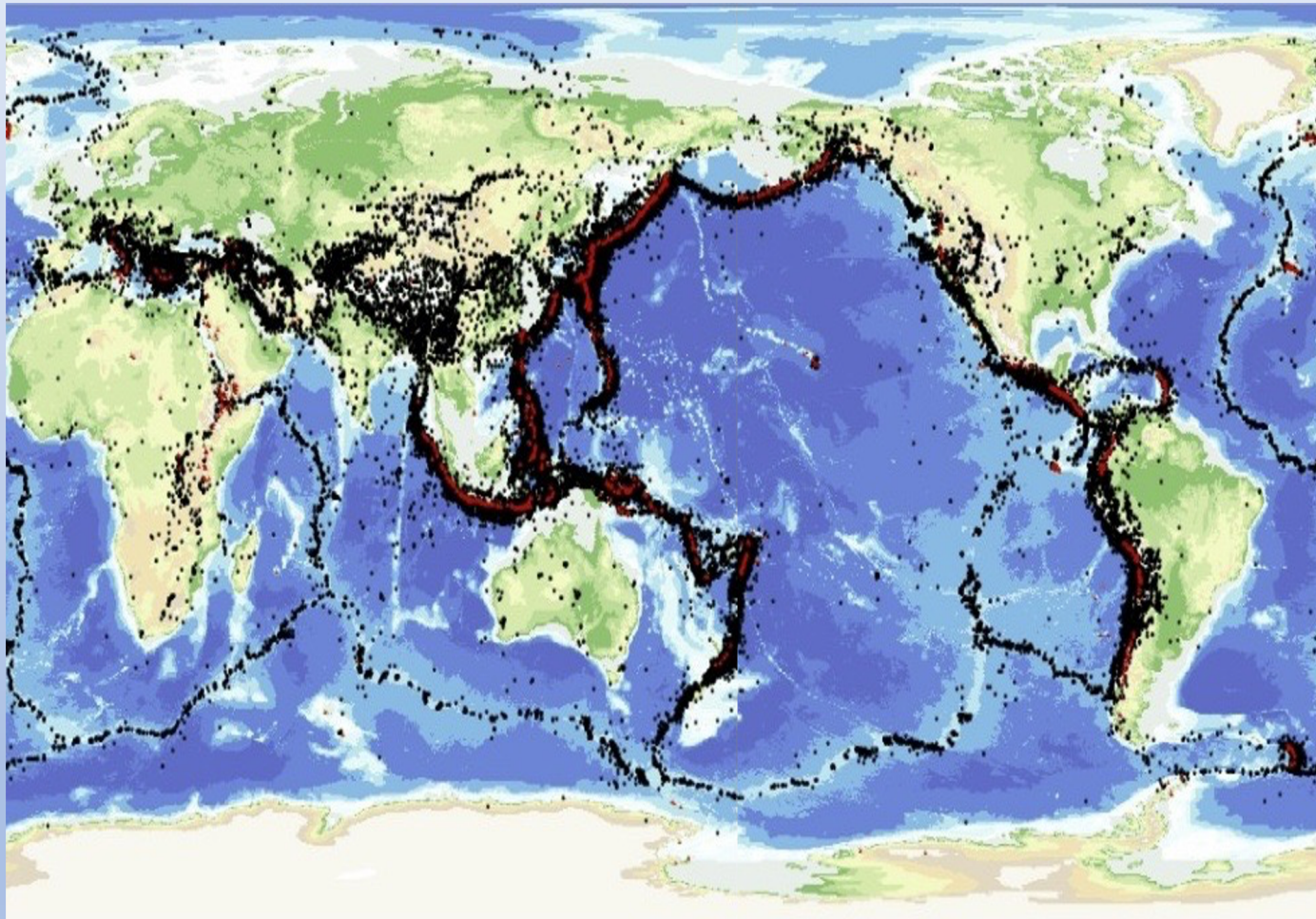
- Test staff Response to overhead announcement to Drop! Cover! and Hold On!



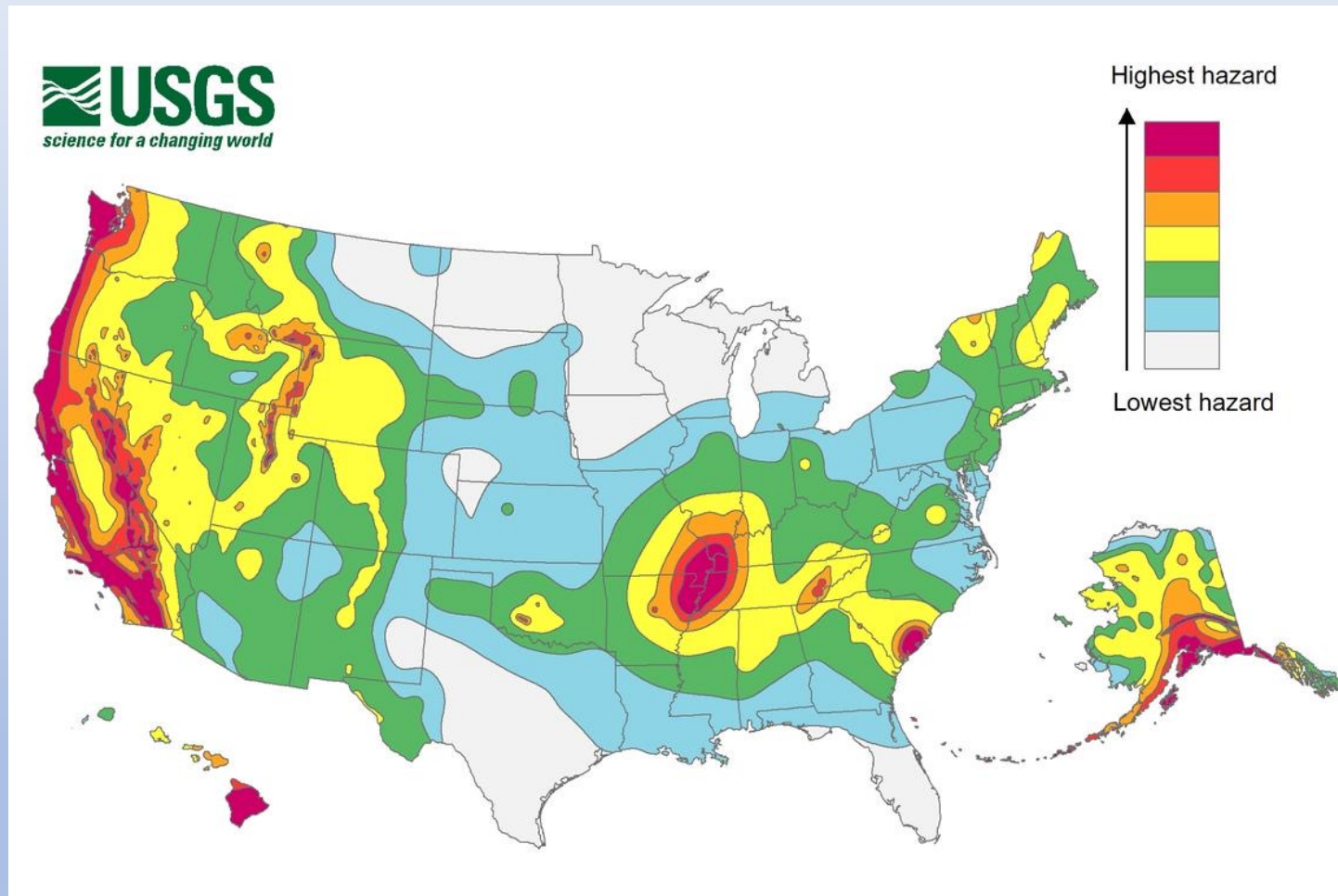
Earthquake Experience

- If you have experienced an earthquake, what was it like?
- What do we normally do at work for earthquake drills?
- Why is practicing for earthquakes and other emergencies important?
- What can we do before earthquakes to be prepared?

Global Earthquakes



U.S. Earthquake Shaking Hazards



Great ShakeOut Earthquake Exercise



**Shake
Out**™

- Earthquakes may happen anytime and almost anywhere.
- Most injuries caused by earthquakes are from falling or flying objects.
- It is important to practice how to be safe!

Today we are joining millions of people
who are practicing earthquake safety!

Decide Earthquake Scenario *based on the objectives:*

Sets the scene so the exercise can begin

- ✓ How big?
- ✓ How far from the Epicenter?
- ✓ Any damage?
- ✓ Participants?
- ✓ Documentation?



Building the Scenario: How Big is the Earthquake?

Earthquake magnitude, energy release, and shaking intensity are all related measurements of an earthquake

Michigan Tech put together this scale:

Earthquake Magnitude Scale

Magnitude	Earthquake Effects
2.5 or less	Usually not felt, but can be recorded by seismograph.
2.5 to 5.4	Often felt, but only causes minor damage.
5.5 to 6.0	Slight damage to buildings and other structures.
6.1 to 6.9	May cause a lot of damage in very populated areas.
7.0 to 7.9	Major earthquake. Serious damage.
8.0 or greater	Great earthquake. Can totally destroy communities near the epicenter.

More information can be found at: www.usgs.gov



Building the Scenario: How Far is Your Facility From the Epicenter?

You can use existing
fault lines or create
your own fictional
one for the exercise

Building the Scenario: How Much Damage from the Earthquake?

- Structural Damage
- Loss of Utilities
 - ✓ Water
 - ✓ Gas
 - ✓ Medical Gas
 - ✓ Electricity
- Transportation
- Injuries
- Telephone and Cell Towers
- The list goes on and on



Building the Scenario: Who is participating?



A SINGLE UNIT



THE ENTIRE
FACILITY



OTHER LOCAL
FACILITIES



Building the Scenario

Take the pieces you just gathered and put them together for your scenario:

- What are you trying to test
 - ✓ Objectives
- What is the scope
 - ✓ How big?
 - ✓ How far from the Epicenter?
 - ✓ Any damage?
 - ✓ Who is included

• Additional information on earthquake scenarios is available at:

<https://earthquake.usgs.gov/scenarios/>



Building the Scenario: Documentation

Choose Documentation

There are basics to the documentation, but can vary based on the exercise type and scope. For a functional exercise some documents you can use are:

- Exercise Plan
- Controller and Evaluator Handbook
- Master Scenario Events List
- Exercise Evaluation Guides



Documentation Exercise Plan

Exercise Plan (used for Functional and Full-Scale Exercises) provides a synopsis of the exercise

- Exercise scope and objectives
- Roles and responsibilities
- Rules of conduct and safety
- Logistics/security/site access
- Communications
- Date and time

Exercise Plan Overview

Exercise Overview

CHANGE BLUE HIGHLIGHTED TO FIT YOUR FACILITY.

Exercise Name	Name of Exercise (could be a fun name or just generic, i.e. Active Shooter, Cyber, etc.) and Exercise Type Choose from the exercise types here .
Exercise Date	Insert Date Here
Scope	<ul style="list-style-type: none">This exercise is a Exercise Type, planned for ## hours at Location. Exercise play is limited to these agencies...Plans/Procedures being tested: Include the name of all plans being tested here.
Mission Area(s)	Please choose from the following 5 mission areas based on the core capabilities that you are testing: Prevention, Protection, Mitigation, Response and Recovery
Core Capabilities	Choose from the core capabilities listed here . List the chosen Core Capabilities here. (Two to three are sufficient.)
Objectives	<ol style="list-style-type: none">What are you wanting to test? Please limit this to between 1-3 items to allow for the exercise to remain measurable.
Threat or Hazard	Choose from Natural, Technological, Human-Caused. List the type here:
Scenario	Your scenario will go here.
Sponsor	Put your agency name here.
Participating Organizations	Approximately ## of individuals will play in this exercise from these agencies.... (list facility, agencies, jurisdictions, or other entities here)
Point of Contact	List Contact Information for the person responsible for this exercise Name - Title Department - Division Full Address, Phone Number, Email Address

Controller and Evaluator Handbook

- The Controller and Evaluator Handbook supplements the Exercise Plan, with detailed information about the scenario and exercise controllers' and evaluators' roles and responsibilities

2016 STATEWIDE MEDICAL AND HEALTH EXERCISE
CONTROLLER AND EVALUATOR HANDBOOK
FUNCTIONAL EXERCISE



2016
STATEWIDE MEDICAL AND HEALTH EXERCISE

CONTROLLER/EVALUATOR HANDBOOK

FUNCTIONAL EXERCISE



Exercise Documentation: Master Scenario Events List (MSEL)

- A chronological timeline of actions and scripted events to be inserted into the exercise by controllers to prompt player activity. It ensures necessary events happen so exercise objectives are met
- An example is to provide activity that would have gone on in a full-scale exercise such as arriving patients, or the set up of a triage area
- By providing these “injects” in a MSEL, the Command Center can make decisions according to what is happening in other areas of the facility that are not activated in a Functional Exercise.



Documentation: MSEL

Master Scenario Events List (MSEL)

A MSEL generates **injects** that include:

- *Designated **scenario** time*
- *Event synopsis*
- *Controller responsible for delivering injects*
- *Expected action*
- *Intended player*

Master Scenario Events List (MSEL)

Inject Time Proj/ Actual	Objective	Message No.	Message Type	From	To	Message	Expected Outcomes/Actions	Observed Outcome/Comments
ST. ELSEWHERE								
0945	1	1	Overhead Page	PBX Operator	County Emergency Operations Center (EOC)	This is the Operator (make sure you announce all with "this is an exercise" there has been an early warning for an earthquake. DROP/COVER/HOLD ON.	Staff will drop/cover and hold on	
0957	2	2	Phone	County EOC	Facility Liaison	Provide situational status of your facility to the government point of contact	A situational status is provided to the	
1011	3	3	Runner	Unit I	Command Center	Should we evacuate?	(This will depend on your scenario)	

Message Key: P=Phone Call; F=Fax; W=Written; R=Radio; V=Verbal; Vi=Visual (e.g., media, map)

Master Scenario Events List (MSEL)

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Exercise Documentation: Player Handout

- A Player Handout is a 1-2 page document, handed out the of an exercise, which provide a quick reference for exercise players on safety procedures, logistical considerations, exercise schedule, and other key factors and information



Exercise Documentation: Exercise Evaluation Guide (EEGs)

- EEGs help evaluators collect and interpret exercise observations.
- EEGs provide evaluators with information on what tasks they should expect accomplished during an exercise, space to record observations, and questions to address after the exercise



Structural Damage and Assessment

Exercise Evaluation Guide:

Capability Description:

Structural Damage and Mitigation Assessment is the capability to conduct damage and safety assessments of civil, commercial, and residential infrastructure and to perform structural inspections, and mitigation activities. The capability includes being able to provide contractor management, construction management, cost estimating, technical assistance, and other engineering services to support and manage response and recovery operations.

Capability Outcome:

Accurate situation needs and damage assessments occur. Mitigation projects to lessen the impact of similar future events are identified and prioritized. The full range of engineering, building inspection, and enforcement services are implemented, managed, and coordinated in a way that maximizes the use of resources, aids emergency response, implements recovery operations, and restores the affected area to pre-event conditions. Mitigation projects to lessen the impact of similar future events are identified and prioritized.

Jurisdiction or Organization:

Name of Exercise:

Location:

Date:

Evaluator:

Evaluator Contact Info:

Note to Exercise Evaluators: Only review those activities listed below to which you have been assigned.

Activity 1: Activate Structural Damage and Mitigation Assessment

Activity Description: Alert assessment staff to the potential need for services and conduct notifications, dispatch, and other staff mobilization activities necessary to begin assessment activities.

Tasks Observed (check those that were observed and provide comments)

Note: Asterisks (*) denote Performance Measures and Performance Indicators associated with a task. Please record the observed indicator for each measure

Task / Observation Keys		Time of Observation/ Task Completion	
1.1 (Rec.C3a 4.1)	Conduct emergency dispatch and notification. <ul style="list-style-type: none">– Damage assessment personnel roster exists– Damage assessment agency roles are identified– Develop a safety plan and appropriate briefing materials	Time:	
		Task Completed?	
		Fully [<input type="checkbox"/>] Partially [<input type="checkbox"/>] Not [<input type="checkbox"/>] N/A [<input type="checkbox"/>]	
Time to mobilize personnel for damage assessment after the observed end of the incident		TARGET	ACTUAL
		Within 24 hours	



Exercise Design & Development

Back to the Initial Planning Meeting

You have chosen:

- Objectives
- Scenario
- Documents
- Timeline (or MSEL)

Next step...

Exercise Design & Development

Choose Participants

- *Exercise Participants*
- *Evaluators*
- *Support Staff*
- *Location and set-up*





Conducting an Exercise

- *The day finally arrives...*

Site Set-Up



Check-In and Registration

- *Sign-In Sheets*
- *Badges*

Exercise Briefing

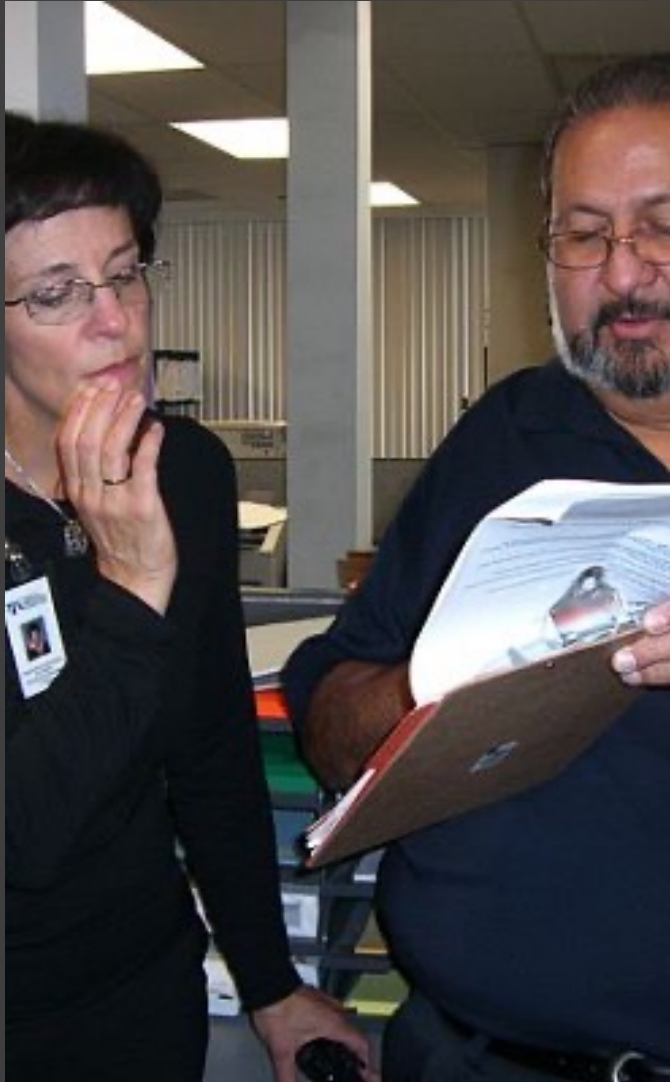
- *Schedule*
- *Objectives*
- *Venues and Areas of Play*
- *Safety Concerns*



Exercise Evaluation

How did you do?

- Conduct a “hotwash” with participants and evaluators
- Record information for the After Action Report



References

- www.aspertracie.hhs.gov
- www.cahf.org
- www.calhospitalprepare.org
- www.earthquakecountry.org
- www.emsa.ca.gov
- www.fema.gov
- www.nlm.nih.gov/dimrc/disasterinfo.html
- www.ready.gov
- www.shakeout.org
- www.usgs.gov

Review: How to Set- Up a Functional Earthquake Exercise

Review

Review preparedness needs
for Earthquakes

Identify

Identify the Planning Team
(It may just be you)

Set Up

Identify Objectives
Exercise Type
Earthquake Scenario

Evaluate

Hotwash to gather
information for the After
Action and Improvement
Plans



Summary

There are a multitude of reasons for exercises to prepare for an earthquake – and another million ways of meeting the needs.

This course helps pull many of them together into one plan.

QUESTIONS

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