Response Procedures for Activating & Deploying Volunteer Building Safety Evaluation Engineers



Purpose

When a natural disaster (earthquake, hurricane, storm, flood, tsunami) occurs in a community, there is often an immediate need for qualified professionals to evaluate damaged buildings for safety of occupancy. The procedures covered in this document pertain to the use of volunteer engineers from nongovernmental professional organizations in less affected areas to assist the affected jurisdiction during a declared disaster or emergency. The volunteers will provide, in accordance with Applied Technology Council (ATC) procedures, initial Rapid Evaluations of building safety, which may be followed, as necessary, by more thorough Detailed/Engineering Evaluations.

Pre-Disaster Organization and Training

Professional organizations, in cooperation with State Civil Defense (SCD), assist in the arrangement of training seminars in building safety evaluation. The training is based on the methods from the Applied Technology Council's ATC-20 and ATC-45 series of safety evaluation procedures and field manuals, as adapted for Hawaii. Training should be funded or subsidized by the State and conducted every two years, alternating between new volunteer training and refresher course training. Members of professional organizations may register as volunteers serving on behalf of their organization, and shall not be deemed representatives of their firms.

Refer to Appendix A for the current list of Structural Engineers Association of Hawaii (SEAOH) volunteers, including their status in ATC-20 and ATC-45 training. SEAOH will update this list annually. SCD should incorporate the SEAOH list into a master list of all volunteers, and update the master list on an annual basis. SCD should utilize this list in an annual disaster training exercise. Volunteers should be issued a copy of this response procedures document and an identification card upon registration by SCD for use as credentials during a disaster deployment. Since access to particular areas may be further restricted by county incident commanders in some instances, the identification cards do not authorize "universal" access privileges. Checkpoints and credentialing areas may be established by county police to verify identification and establish a controlled perimeter to properly identify authorized responders during emergencies.

Post-Disaster Volunteer Engineer Activation

Immediately after a disaster that results in significant building damage, the SCD Community Emergency Response Team manager will first contact the potential volunteer engineers on the master list. Volunteers who learn of a disaster may also contact their organization's disaster response committee on their own initiative to indicate their availability, which will then be reported to SCD. By this means, those volunteers willing and able to respond are preliminarily identified. If lacking sufficient personnel resources, the affected county jurisdiction may request the aid of volunteer engineers via their respective county civil defense agency to SCD. The number of volunteers and the duration needed for building safety evaluations should be stated by the county. In the case of a widespread disaster, volunteers from out-of-state may be required. If so, SCD should contact the appropriate out-of-state Emergency Management Agencies to activate emergency call-up procedures for their volunteer structural engineers.

Page 1 of 4 1/4/2008

Authority and Coordination

State Civil Defense has overall organizational responsibility for coordination of the program. Once deployed to a disaster site, county building officials have the civil authority to determine building safety and occupancy, and the building officials direct the tasking of the volunteers. The county building officials may also designate accepted volunteers with the "authority to tag" on behalf of the county. The county agency responsible for post-disaster building safety evaluations is prescribed in the county's Emergency Operations Plan. It is typically the building division of the county department of public works (Kauai, Hawaii, Maui) or department of design and construction (Honolulu).

All State agencies that comprise the State Emergency Response Team are grouped into Emergency Support Functions (ESF) to carry out coordination and completion of assigned missions, in accordance with the National Incident Management System (NIMS). State Emergency Coordination Officers for each ESF are authorized to use the resources of their respective agency or organization to carry out response and recovery missions that are determined by the unified command. The Emergency Coordination Officer (ECO) for ESF #3, Public Works and Engineering, is the Administrator of Public Works from the Department of Accounting and General Services.

TimingThe following is a recommended timeframe for the request and deployment of outside assistance:

Action	Within
SCD contacts volunteers and furnishes list of potentially available	24 hours
building safety evaluation engineers to the ESF #3 ECO (DAGS Public	
Works Administrator)	
SCD, ESF #3 ECO, and County arranges logistics and deployment areas	2 days
with the professional association's disaster response representatives	
Deployments to Disaster Begin	3 to 4 days

SCD must issue a formal written acknowledgement and acceptance of the volunteer engineers for performing building safety evaluations to their professional association prior to deployment for each particular disaster. The list of engineers deploying to the county shall be furnished to the county's civil defense agency as well as the county building division.

Transportation and Housing

The responding volunteers travel to the disaster site shall be arranged by the ESF #3 ECO with the county. The arrangements for specific deployment dates and duration, transportation, lodging, meal allowances, and other county logistics should be coordinated with representatives of the professional engineers association. Transportation alternatives include personal vehicle, commercial air, military air, or ship. When volunteers are assisting from off-island or out-of-state, housing options include hotels/motels, temporary shelters, or perhaps even tent camps. Whenever possible, internet access should be available at the lodging facility for communication purposes with the offices of the volunteer engineers. Ground transportation may include county or state jurisdiction vehicles or rental cars. The county shall be responsible for all travel costs. Reasonable expenses incurred by volunteers in connection with their assignments shall be reimbursed via a per diem. Expenses for use of personal vehicles shall be reimbursed at standard mileage rates.

Page 2 of 4 1/4/2008

Other Items to be Furnished by the County:

Street maps, ATC Field Manuals and inspection forms, posting placards, barricade tape, clipboards, fastening for placards, daily inspection sheets with the locations of buildings to be evaluated, and information with the names and phone numbers of post-disaster aid services to hand out in affected areas. The names and contact information of county officials involved in the safety evaluation program should be furnished to the volunteers or their professional organization's representative

Liability Protection for Volunteer Engineers/Architects

Under Hawaii State Law (Hawaii Revised Statutes Chapter 128, Civil Defense and Emergency Act), persons engaged in civil defense functions, including volunteers whose services are accepted by any authorized person, cannot be held civilly liable for the death of or injury to persons, or property damage, as a result of any act or omission in the course of the employment of duties, except in cases of willful misconduct.

Other Entitlements

Per HRS 128-16, all persons including volunteers whose services have been accepted by authorized persons, shall, while engaged in the performance of duty be deemed state employees or employees of a political subdivision, and shall have the powers, duties, rights, and privileges of such in the performance of their duties. State Workers Compensation Insurance protection is also extended to volunteers responding to SCD requests for services.

Evaluation Procedures

Evaluations Teams

Once deployed to the county, teams will be formed by the County representatives of the department charged in its Emergency Operations Plan with the responsibility for building safety evaluations. Teams will typically have 2 to 3 members and may include volunteers from multiple organizations. However, each team should include at least one county representative familiar with the local community and one individual trained in the ATC procedures.

Building Safety Evaluations

A list of structures to be evaluated should be issued by the county by 9 am each day. Evaluations shall be performed per the procedures outlined in ATC-20 (earthquakes) or ATC-45 (wind storms and floods). The procedures include three levels of evaluation.

Evaluation	Description					
Rapid	Intended to quickly designate the apparently safe and unsafe structures.					
	Structures may also be designated for a Detailed Evaluation if further					
	examination or discovery of conditions is necessary.					
Detailed	Consists of a more thorough visual examination of the structure, inside and					
	out. Shall be performed on essential facilities or when recommended by the					
	Rapid Evaluation team. Preferably performed by a structural engineer.					
	Detailed Evaluations may result in a change of the status designated by a					
	previous Rapid Evaluation.					
Engineering	Performed by structural engineers retained by the building owner; the most					
	thorough evaluation technique that may also include retrofits to enable a					
	restoration of safety necessary for occupancy.					

Page 3 of 4 1/4/2008

The County is responsible for performing the Rapid Evaluation (and/or Detailed Evaluation, where required). In each type of evaluation, buildings are posted with one of three ATC placards:

Placard	Description
Green	Inspected; considered safe for lawful occupancy
Yellow	Restricted use; entry, and occupancy are restricted
Red	Unsafe; do not enter or occupy

The green *Inspected* placard *is* used when observed damage, if any, does not appear to be an imminent risk. The yellow *Restricted Use* placard allows occupancy restrictions, such as for area or *time* duration, to be stated when considered appropriate for safety. The yellow placard and the red *Unsafe* placard *require* that the owner, with appropriate professional assistance, *mitigate* the observed hazards to the satisfaction of the jurisdiction *prior* to full re-occupancy.

Reporting

SEAOH has developed a multi-hazard Building Safety Evaluation Form applicable to earthquakes and hurricanes, complying with the ATC procedures. Evaluation teams should complete the double-sided *Building Evaluation Safety Assessment Form* shown in Appendix B. A copy of the completed form should be made for SEAOH to assist with its overall reconnaissance efforts. The original form should be maintained in County records. Digital photographs should be taken of each inspected building to document the damage or failure mechanism.

Public Information Handouts

Evaluation teams may be among the first County representatives that the building occupants encounter after the disaster. Thus, in addition to performing the building evaluation, the team should be prepared to direct them to other assistance, using informational handouts supplied by the County. This information should include an explanation of the placard status, the necessary follow-up actions by the owners of yellow and red-tagged buildings, and contact information for further assistance.

Geocoding and GIS

Address and TMK/GPS coordinates of each building evaluated should be used to create a database of damaged structures for periodic GIS mapping and spatial analysis. This data and map products should be shared with the Structural Engineers Association of Hawaii.

After Action Report

Volunteers from SEAOH will be contributing to a report on the deployment that may include summary observations and recommendations for improvements of the ATC procedures and the mitigation of damage. Information gathered from the deployment shall be used for these purposes, and may include photographs. For private homes, the photographs may be identified in reports by area or district, but the report shall not include specific addresses or the names of owners.

Page 4 of 4 1/4/2008

Appendix A

Structural Engineers Association of Hawaii (SEAoH) List of Volunteers



STRUCTURAL ENGINEERS ASSOCIATION OF HAWAII

EMERGENCY RESPONSE

Last Na	me First Name	Status	Emergency Response?	Work Number	Home Phone	Cell Phone	Past Experience	ATC-20 Trained?	ATC-45 Trained?
1. BALDR	IDGE STEVEN M.	MEMBER	✓				~	✓	✓
2. BRAND	T JONATHAN	MEMBER	✓				\checkmark	✓	
3. CARDE	N LYLE	MEMBER	✓				✓	✓	
4. CHEN	LONG	MEMBER	✓					✓	✓
5. CHOCK	GARY Y.K.	MEMBER	~				\checkmark	✓	✓
6. CHU	RANDY N.T.	MEMBER	✓		AOH Disaster R e Chair Mainta	•	~		✓
7. DAR	ATHER R.	MEMBER	~		leing phone nu		✓	~	✓
8. DOI	DEAN A.	MEMBER	✓	The list in	aludina nhana	numbara ia	✓		✓
9. EMOTO	JASON H.	MEMBER	✓		cluding phone i le to all membe		✓	~	✓
10. ERICKS	ON BRANDON	MEMBER	✓	committee	e. Contact the I	ORC Chair	✓	~	
11. ERICKS	ON AARON	ALLIED MEMBER	V		for access.		V	✓	✓
12. FANG	YEN WEN	MEMBER	V				~	✓	
13. FOLKS	TIMOTHY S.	AFFILIATE MEMBER	~						
14. FRONT	ERA FERNANDO	MEMBER	\checkmark						
15. FUNG	BENNETT Y.K	C. MEMBER	\checkmark				\checkmark	✓	✓
16. GEORG	E WILLIAM C.	MEMBER	~						

Friday, June 26, 2015 Page 1 of 4

Last Name	First Name	Status	Emergency Response?	Work Number	Home Phone	Cell Phone	Past Experience	ATC-20 Trained?	ATC-45 Trained?
17. GOSHI	TIMOTHY G.S.	MEMBER	✓				\checkmark		
18. HANYU	JEFFREY M.	MEMBER	~				\checkmark	✓	
19. HEYWOOD	STEVEN C.	MEMBER	~				\checkmark	✓	✓
20. HOO	KIMBERLY	ALLIED MEMBER	\checkmark					✓	\checkmark
21. HUMAY	FRANCIS K.	MEMBER	\checkmark				\checkmark		
22. HUNNEMANN	MICHAEL P.	ASSOCIATE MEMBER	✓				\checkmark	✓	
23. IDE	BRIAN M.	MEMBER	\checkmark				✓	✓	~
24. ISHII-NAKAYAMA	BEVERLY K.	MEMBER	\checkmark					✓	✓
25. IWAMOTO	RON E.	MEMBER	\checkmark		OH Disaster R	-	\checkmark	✓	✓
26. KANE III	PAUL K.	AFFILIATE MEMBER	\checkmark	include	Chair Maintair eing phone nur	nbers.			
27. KASAMOTO	MICHAEL K.	LIFE MEMBER	~		ncluding phone numbers is ble to all member of the		✓	✓	
28. KIKUYAMA	ALEX	ALLIED MEMBER	\checkmark	committee	. Contact the I for access.	PRC Chair			
29. KUNIYOSHI	SUSAN Y.	MEMBER	\checkmark				\checkmark	✓	~
30. LAU	CLIFFORD Y.L.	MEMBER	\checkmark				\checkmark	✓	~
31. LAU	HOWARD K.C.	MEMBER	\checkmark				✓		
32. LI	XIANPING	MEMBER	\checkmark					✓	
33. LISTAVICH	SCOT T.	MEMBER	\checkmark				\checkmark	✓	
34. LOTT	BRIAN S.	ALLIED MEMBER	✓					✓	✓
35. MANDAWE, JR.	JOSE	ASSOCIATE MEMBER	✓				✓	✓	✓

Friday, June 26, 2015

	Last Name	First Name	Status	Emergency Response?	Work Number	Home Phone	Cell Phone	Past Experience	ATC-20 Trained?	ATC-45 Trained?
36.	MESTANZA	MARVIN W.	MEMBER	✓						
37.	MIYASATO	GLENN H.	MEMBER	✓				\checkmark	✓	✓
38.	MIZUE	EVAN A.	MEMBER	✓					✓	✓
39.	MURAI	JONATHAN D.	MEMBER	✓					✓	✓
40.	MURAR	KEVIN M.	MEMBER	✓						
41.	MURDOCK	BRIAN C.	MEMBER	✓				✓	✓	
42.	NAMGUNG	JONG	MEMBER	✓						
43.	OKUNA	ETHAN W.	MEMBER	✓					✓	✓
44.	OKUNAGA	GRANT J.	MEMBER	✓					✓	✓
45.	POWELSON	NATHAN	ALLIED MEMBER	~	The SEAOH Disaster Response Committee Chair Maintains this list includeing phone numbers. The list including phone numbers is available to all member of the		✓			
46.	ROBERTSON	IAN N.	MEMBER	✓		~ ~		✓	✓	\checkmark
47.	SAKANASHI	CRAIG H.	MEMBER	✓	availabl	e to all member	of the			
48.	SARWAR	AFAQ	MEMBER	✓	committee	. Contact the D for access.	RC Chair	✓	✓	
49.	SENGUPTA	DIPANKAR	MEMBER	✓		101 access.				
50.	SHIMOKAWA	MYLES Y.	MEMBER	✓				✓		
51.	SUEHIRO	MARSHALL K.	MEMBER	✓				✓		
52.	SUZUKI	GARY S.	MEMBER	✓				✓	✓	
53.	SUZUKI	THEODORE J.	MEMBER	✓						
54.	TAKUSHI	LEE T.	MEMBER	✓				\checkmark	✓	
55.	TANIMURA	THOMAS Y.	MEMBER	✓				✓		
56.	UECHI	SARIE M.	MEMBER	✓						✓

Friday, June 26, 2015 Page 3 of 4

Last Nam	e First Name	Status	Emergency Response?	Work Number	Home Phone	Cell Phone	Past Experience	ATC-20 Trained?	ATC-45 Trained?
57. WAITE	TIMOTHY J.	ASSOCIATE MEMBER	>				>	✓	✓
58. WALFISH	JAMES B.	MEMBER	\checkmark				✓	✓	✓
59. WONG	WILLIAM R.	ALLIED MEMBER	✓	Committee	AOH Disaster F e Chair Mainta	ins this list			
60. YAMAMO	TO RODNEY T.	LIFE MEMBER	✓	includ	leing phone nu	mbers.	✓		
61. YAMASH	RO ROY K.	LIFE MEMBER	✓	The list inc	cluding phone	numbers is			
62. YAMASH	IRO COREY	ALLIED MEMBER	✓		le to all member. Contact the l			✓	✓
63. YANABU	ROBERT K.	MEMBER	✓		for access.		✓	✓	
64. YANG	JINGHAI	MEMBER	~				✓	~	
65. YONESHI	GE KARYNN M.	MEMBER	\checkmark						✓

Friday, June 26, 2015 Page 4 of 4

Appendix B

Building Evaluation Safety Assessment Form (Double-Sided)

Building Evaluation Safety Assessment Form

Inspection		
Inspector(s) ID:	Inspection Date:	
Affiliation:	Inspection Time:	AM PM
Inspection: Initial Re-inspection	Areas Inspected:	Exterior Only
Previous Placard: Red Yellow Red		Exterior & Interior
(if re-inspection)		Crawlspace or Foundation
Building Description		
Building Name:	Building Address:	
Contact Person:	Building GPS:	
Contact Phone #:	Building TMK:	
Type of Construction (check all that apply): Wood Frame: Post & Pier Slab-On-Grade Cold-Formed Steel Frame Hybrid Wood/Steel Frame Structural Steel Frame Concrete: Cast-in-Place Tilt-Up Precast Masonry: Reinforced Unreinforced Other:	Light-Framed W Single-Wall Light-Framed Be Shear Walls: Braced Frame: Moment Frame:	alls with Shear Panels: Double-Wall earing Walls with Tension Only Bracing _ Concrete Masonry _ Steel Concrete Timber _ Concrete Masonry Steel
# of stories above ground: below ground: Approx. "Footprint Area": square feet. Estimated year/era of construction: Previously retrofitted? Yes No Unsure	Flat to Mild	(up to 1:12 slope)
Primary Occupancy: Single-Family Dwelling Multi-Unit Residential Estimated total # of residential units Estimated # of inhabitable units Public Assembly Emergency Services Commercial	s	Offices Industrial Government Historic School Other:
Posting Choose a posting based on the evaluation and team judgment. an Unsafe posting. Localized <i>Severe</i> and overall <i>Moderate</i> coplacard at main entrance. Post RESTRICTED USE and UNSA	nditions may allow a R	estricted Use posting. Post INSPECTED
INSPECTED (Green placard) RESTRICTED	USE (Yellow placard)	UNSAFE (Red placard)
Record any use and entry restrictions exactly as written on pl	lacard:	
Further Actions Parriandes pended in the following gross:		
Barricades needed in the following areas: Detailed Evaluation Recommended: Structural	Gaataahnisal	Other:
Other recommendations:		

Building Name:					_	In	spec	tor((s) I	D::										 		
Evaluation Evaluate the building	for the	e con	ditions	bel	ow a	and	che	ck t	he a	ppro	opri	ate	colu	ımn.								
Observed Conditions								Min	or/N	lone		N	/lode	rate			Sev	/ere	!	 	N/	Α
Overall Hazards Collapse/partial collapse, or buildi Building or story leaning	ng off	foun	dation					_		_		-							-	_		
Comments:																		-		 		
Structural Hazards Fractured or displaced foundation Roof/floor framing or connection Columns, piers, pilasters, corbels Diaphragms, horizontal bracing Bearing/shear walls Vertical bracing, moment frames Other (specify): Comments:										— — — —		-							- - - -	- - - - -		
Non-Structural Hazards Chimney, parapets, ornamentation Cladding, glazing Ceilings, light fixtures Interior Walls, partitions Elevators Stairs, exits, access walkways, gra Mechanical & electrical equipmen Other (specify): Comments: Geotechnical/Site Hazards Slope failure, debris Ground movement, fissures, erosion	tings t, gas											-							-	 -		
Differential settlement Retaining walls, screen walls Other (specify): Comments:								_				-							-	-		
Estimated Building Damage	Skato	h (ont	tional)	Q	keto	h h	uildi	nα	in tl	he ci	2206	nr	ovid	led &	no	te d	lama	one.	lar			
(excluding contents) 0-1%1-10%10-30%30-60%60-100% Documentation Photos/videos taken Notes						11 U	and a	112				الر د.						1800	ı al			