

**WABO/SEAW
Liaison Committee**

Washington Association of
Building Officials &
Structural Engineers Association
of Washington

WHITE PAPER 5-2009

Title: Guideline –Post-Disaster Contract Safety Evaluations

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Abstract:

In the event of a natural disaster, this white paper is intended to establish standard processes by which engineering firms may provide building safety evaluations under contract to a building owner, and would provide notification to the local building official of the results.

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Committee Mission Statement:

- *Improve communications between the public jurisdictions that administer building codes and the engineering design community that prepares construction documents.*
- *Improve consistency and quality of engineering submittals and project reviews.*
- *Build consensus between the engineering design community and building officials with regard to code interpretation and submittal requirements.*

INTRODUCTION:

After an earthquake, building officials are generally responsible for providing ATC-20 evaluations of the structures within their jurisdiction. Building owners generally want to know as soon as possible whether or not their building is safe to occupy. However, if the earthquake is large enough, the building official may not have the resources available to provide those evaluations in a timely manner. Organizations such as SEAW and AIA have lists of volunteers who could aid the building official in performing the evaluations, but engaging their services, providing orientation to them of the local jurisdiction’s policies, and getting them assigned to evaluate particular buildings or areas all take time. It is also uncertain whether local engineers will be available to volunteer, as they will be providing similar services to their clients.

In the mid 1990’s, the City of San Francisco started their Building Occupancy Resumption Emergency Inspection Program (BORP). This program established requirements and procedures that allowed building owners to pre-qualify specific engineers to evaluate and “tag” buildings using the ATC-20 procedures. While there has been at least one attempt to institute a similar program in the Puget Sound area, nothing formal has ever been completed. However, many

building owners have already hired local engineering firms on retainer to provide ATC-20 evaluations for their buildings, should an earthquake occur. Unfortunately, there are some difficulties with the current state of affairs:

1. The placards posted by the engineers hired by the building owner may not have legal authority behind them, unless the authority is contained in the locally-adopted building code.
2. No procedures are in place whereby the engineer reports their findings to the building official. Thus, there are no centralized records of the safety status of buildings.

The guideline process proposed herein trades some possible duplication of effort for:

- Speed in getting buildings' initial postings done;
- Ensuring the postings have the appropriate authority behind them; and,
- Ensuring the building official receives the information necessary to maintain records of the posting status of buildings within the jurisdiction in a timely manner.

Either the BORP process or the guideline in this White Paper can be adopted (or adapted) by the local jurisdiction. Information on San Francisco's BORP can be found at <http://sfdbi.org/index.aspx?page=60>.

Although the focus of this white paper is on earthquake response, these procedures may be applied to emergency response of any kind, including large scale flood, wind, landslide or terrorist events.

Guideline Process:

1. Owners may contract with engineering firms to perform rapid evaluations in accordance with ATC-20, ATC-45, etc.
2. In the event of an emergency, the contract engineering firms may conduct the evaluations, and post advisory placards on buildings. (Sample advisory placards are attached at the end of this white paper.)
3. Engineering firms are responsible to report results of the evaluations to the building official of the local jurisdiction in a timely manner.
4. The building official should send departmental staff to post official placards on the buildings in a timely manner.
5. The building department is responsible for maintaining the records of the safety status of the buildings in its jurisdiction, including those posted by engineering firms.

Commentary:

1. Engineering firms entering into such a contract are responsible for ensuring that staff assigned to perform the evaluations under contract to building owners is qualified to do so. If an owner's building is a "significant structure" as defined in State licensing law, the firm should have a licensed structural engineer overseeing the evaluation of that building.

It is recommended that the engineering firm conduct a pre-event building survey or review to identify critical areas or portions of the structure needing attention after an event.

2. Advisory placards are posted under the authority of the building owner. An owner has the authority to require evacuation or limited access to his/her building if the circumstances require it. The owner's and engineering firm's contact information should be shown on any posted placard. Samples of suggested placards are attached.
3. Red and yellow placards posted by the engineering firms should be reported as soon as practical to the local building official, unless instructed otherwise by the building official. Green tags may be reported on a less-frequent, but regular schedule, as determined by the building official.
4. The building official is responsible for ensuring building department staff performing the evaluations are qualified to do so. Once on site, they should verify the engineer's posting before posting the official placard. It is recommended that if there is a disagreement, the building department staff should contact the engineering firm and discuss the posting with the engineer who performed the evaluation.

Official placards carry the authority of the jurisdiction. If a state of emergency is declared, the posting authority is as prescribed in the declaration. If a state of emergency is not declared, the posting authority is as prescribed in the building code or other local ordinance. The 2009 International Building Code (IBC) regulates "unsafe structures" in Section 116, requiring them to be demolished or made safe. IBC Section 3405.1.1 regulating repairs gives the building official the authority to "require the elimination of conditions deemed dangerous," where "dangerous" is defined in Section 3402 as follows:

DANGEROUS. Any building or structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:

1. The building or structure has collapsed, partially collapsed, moved off its foundation or lacks the support of ground necessary to support it.
2. There exists a significant risk of collapse, detachment or dislodgment of any portion, member, appurtenance or ornamentation of the building or structure under service loads.

The code does not appear to specifically address whether this authority extends to allowing the building official to require a building or portion thereof to be vacated. Absent a declared emergency, it is questionable whether there is authority to post the yellow placards.

Red placards should be posted as soon as possible. Yellow placards should be posted as soon as possible, but have a lower priority than red placards. Green placards may be posted as time is available.

5. There will be many requests for this information from the local politicians and media, so it is recommended that records be kept either in the local building official's permitting database, or in a separate spreadsheet or database that can be queried for information.

NO APPARENT HAZARD

UNRESTRICTED OCCUPANCY PERMITTED

This structure has been evaluated (as indicated below) and no apparent structural hazard has been found.

- Evaluated Exterior Only**
- Evaluated Exterior and Interior**

Report any unsafe condition to local authorities; re-evaluation may be required.

Inspector Comments:

Facility Name and Address:

Owner contact information:

Evaluating firm contact information:

Date _____ Time _____

This facility was evaluated under emergency conditions for damage assessment.
This ADVISORY BUILDING EVALUATION TAG may be superseded by the placard of the authority having jurisdiction

DO NOT REMOVE, ALTER, OR COVER THIS PLACARD

CAUTION: AFTERSHOCKS AFTER THIS EVALUATION MAY INCREASE DAMAGE AND RISK.

RESTRICTED USE

Caution: This structure has been evaluated and found to be damaged as described below:

Entry, occupancy, and use are restricted as indicated below, except as specifically authorized by the owner:

Do not enter the following areas: _____

Brief entry allowed for access to contents: _____

Other restrictions: _____

Facility Name and Address:

Owner contact information:

Evaluating firm contact information:

Date _____ Time _____

This facility was evaluated under emergency conditions for damage assessment.
This ADVISORY BUILDING EVALUATION TAG may be superseded by the placard of the authority having jurisdiction

DO NOT REMOVE, ALTER, OR COVER THIS PLACARD
CAUTION: AFTERSHOCKS AFTER THIS EVALUATION MAY INCREASE DAMAGE AND RISK.

UNSAFE

DO NOT ENTER OR OCCUPY

This structure has been found to be seriously damaged and is unsafe to occupy, as described below:

Facility Name and Address:

Owner contact information:

Evaluating firm contact information:

Date _____ Time _____

This facility was evaluated under emergency conditions for damage assessment.
This ADVISORY BUILDING EVALUATION tag may be superseded by the placard of the authority having jurisdiction.

DO NOT REMOVE, ALTER, OR COVER THIS PLACARD