Reclamation Building Seismic Safety Program

Guideline No. 6

Evaluating Buildings in Low Seismic Regions

Date: June 6, 2001 (Editorially Revised March 19, 2007)

Background: Evaluations of buildings in low seismic regions require that a Tier 1 evaluation checklist be completed. Although quite short, the checklist has important checks requiring that the building being evaluated have a complete load path and wall anchorage. The level of risk shall be determined based on the Reclamation Building Seismic Safety Program's (BSSP) risk methodology. Even when potential seismic deficiencies are identified in a low risk building, the building is usually not recommended for structural and nonstructural rehabilitation, based on the level of risk.

In lieu of preparing a complete evaluation report for a low risk building, which would typically include a list of potential deficiencies, a proposed structural rehabilitation concept, and quantities and costs for the proposed concept, it is recommended that a formal letter be sent to the client. The letter shall document justification for not recommending rehabilitation, and building data and risk assessment results shall be included as attachments.

Policy: Prior to conducting a possible onsite inspection, the evaluator shall determine the region of seismicity in accordance with the procedures outlined in the seismic evaluation standard adopted by the BSSP. If the region of seismicity is determined to be low, then an onsite inspection of the building will not be conducted.

The evaluator shall verify the Rapid Visual Screening (RVS) data with field personnel, via e-mail or telephone call(s). The following data shall be collected in order to determine the building's level of risk:

- Model building type
- Soil classification at the site
- Occupancy-at-Risk (OAR) - the total actual occupancy of the building (see example of how the OAR is calculated)

The OAR shall be as detailed as possible to account for every person who uses the building for any period of time. The OAR may be calculated on a weekly, monthly, or even on a yearly basis.

If the building is determined to be low risk, then a formal letter stating that the building is low risk and no rehabilitation is being recommended will be sent to the client. Building data and risk assessment results will be attached to the letter.

Example of OAR Calculation

Occupancy:

7 office workers in bldg.
(6 employees for 40 hrs/wk, 1 employee for 50 hrs/wk)
1 maintenance worker in bldg. for 2 hrs/wk
30 meeting attendees for 2 hrs/month

Occupancy-at-Risk (OAR):

Weekly basis:	6 employees x 40 hrs/wk / 168 hrs/wk	=	1.43
	1 employee x 50 hrs/wk / 168 hrs/wk	=	0.30
	1 maintenance worker x 2 hrs/wk / 168 hrs/wk	=	0.01
	30 attendees x 2 hrs/mo. / 672hrs/mo.	=	0.09
	Total OAR	**=**	**1.83**

Monthly basis:	6 employees x 160 hrs/mo. / 672 hrs/mo.	=	1.43
	1 employee x 200 hrs/mo. / 672 hrs/mo.	=	0.30
	1 maintenance worker x 8 hrs/mo. / 672 hrs/mo.	=	0.01
	30 attendees x 2 hrs/mo. / 672hrs/mo.	=	0.09
	Total OAR	**=**	**1.83**

Yearly basis:	6 employees x 40 hrs/wk x (365/7) wk/yr / 8760 hrs/yr	=	1.43
	1 employee x 50 hrs/yr x (365/7) wk/yr / 8760 hrs/yr	=	0.30
	1 maint. worker x 2 hrs/wk x (365/7) wk/yr / 8760 hrs/yr	=	0.01
	30 attendees x 2 hrs/mo. x 12 mo./yr / 8760 hrs/yr	=	0.09
	Total OAR	**=**	**1.83**