Oregon Department of Environmental Quality

Seismic Vulnerability Assessment Forms

Form 7: Buildings and Building-Like Structures (BLG)

Primary Reference: ASCE Standard 41-23, "*Seismic Evaluation and Retrofit of Existing Buildings*", 2023.

This document provides the questions for walk-through assessment of one-two story buildings and structures such as loading racks and spill containment structures.

1. Obtain all structural drawings, calculations, geotechnical reports and possible damage reports for each structure. If no drawings or sets of relevant calculations exist, prepare a "baseline inspection" set of drawings used for the seismic evaluation (See Section 3.2). Provide the building type, per Table 3-1: **(BLG1)**
    - W = Wood
    - S = Steel
    - CFS = Light Steel
    - C = Concrete
    - PC = Precast Concrete
    - RM = Reinforced masonry
2. From Table 2-1, determine the structural performance category, either S-1 or S-2 to comply with OAR 340-300-0003 and the mitigation plan requirements to satisfy Risk Category IV, which satisfy the intent of (OAR 340-300-0004(1)(a). The non-structural performance requirement should remain "operational", category "N-A" and have an importance factor Ip = 1.5. Per DEQ, the risk category is IV (Table 2-3). The BSE-1E cited is based on 20% in 50 years, but the DEQ requires the DE (2475-year return period). For the different types of structures, Table 3-4 provides references for the seismic evaluation and retrofit of structures (risk category IV). Use the appropriate ASCE/FEMA references. Provide criteria for risk category IV for this specific type of structure. From Table 2-1, Risk Category IV, BSE-1N states that for non-structural components, use 1-A and for BSE-2N, use 3-D. **(BLG2)**
3. The scope of the investigation or inspection is described in Section 4.2 for each specific structural type. The table 4-1 for Tier 1 evaluations delineates areas to inspect and report for each type of building. Use Chapter 17 tables for the appropriate structural configuration and risk level IV to respond to each relevant question. **(BLG3)**
4. For Tier 1 evaluation, Chapter 4 prescribes the procedure. Table 4-1 provides direction for the structural inspection. Tier 1 checklist is in Chapter 17. **(BLG4)**
5. If Tier 2 is required, it includes analyses to determine the seismic capacity and demand, but using the deficiencies already reported in Tier 1. Procedure is to follow the flowchart in Figure 5-1. Chapter 7 prescribes analyses methodologies following Tier 2 evaluation. **(BLG5)**

Contact

Program contact: Killian Stoltenburg

DEQ Seismic Stability Program Administrative Coordinator

971-295-8734

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