



Brewery Avoids Business Disruption Following Earthquake

Full Mitigation Best Practice Story

Los Angeles County, California



Los Angeles, CA - Anheuser-Busch operates a large brewery just a few miles from the epicenter of the January 17, 1994 Northridge Earthquake. The facility serves the company's markets throughout the Southwest and Pacific regions. Because it is in a high earthquake hazard area, Anheuser-Busch initiated a risk reduction program at the brewery in the early 1980s.

A risk assessment of critical buildings and equipment was performed. Those with unacceptable levels of risk were seismically upgraded, without impacting daily operations. Seismic reinforcements were designed for a number of buildings and the critical equipment contained within, including buildings housing beverage production and vats where the beer is stored and aged.

The Northridge Earthquake produced very strong ground motion, causing extensive damage in the immediate vicinity of the brewery. However, post-earthquake surveys conducted by the company's engineering consultants, indicated that none of the retrofitted structures sustained damage. On-site facilities of lesser importance to the business had not been strengthened and consequently sustained damage, requiring repairs. None of the vats which are essential to the brewery's operations, was damaged. The brewery was quickly returned to nearly full operations following minor cleanup, repairs, and restoration of the off-site water supply.

Anheuser-Busch conservatively estimates that had seismic strengthening not been performed, direct and business interruption losses at the brewery could have exceeded \$300 million. According to Anheuser-Busch, this is more than 15 times the actual cost of the loss control program.

Clearly, this loss control program paid for itself in the Northridge Earthquake event. While this is but one example, the Anheuser-Busch case study indicates that mitigation measures can strengthen corporate balance sheets.

Activity/Project Location

Geographical Area: **Single County in a State**

FEMA Region: **Region IX**

State: **California**

County: **Los Angeles County**

City/Community: **Los Angeles**

Key Activity/Project Information

Sector: **Private**
Hazard Type: **Earthquake**
Activity/Project Type: **Retrofitting, Structural**
Structure Type: **Tilt-up (Concrete Pre-cast)**
Activity/Project Start Date: **01/1980**
Activity/Project End Date: **12/1993**
Funding Source: **Business Owner**
Funding Recipient: **Business/Industry**
Funding Recipient Name: **Anheuser-Busch**

Activity/Project Economic Analysis

Cost: **\$20,000,000.00 (Estimated)**
Non FEMA Cost:

Activity/Project Disaster Information

Mitigation Resulted From Federal
Disaster? **No**
Value Tested By Disaster? **Yes**
Tested By Federal Disaster #: **No Federal Disaster specified**
Year First Tested: **1994**
Repetitive Loss Property? **No**

Reference URLs

Reference URL 1: <http://www.oes.ca.gov/Operational/OESHome.nsf/1?OpenForm>
Reference URL 2: <http://neic.usgs.gov/>

Main Points

- The company, Anheuser-Busch, knowing that their facilities were in a high hazard area, conducted an independent risk assessment and hazard analysis.
- As a result of the assessment, structural retro-fitting was done on the plant and buildings that were identified as critical facilities.
- The Northridge Earthquake of 1994 produced strong ground motion and caused extensive damage in the vicinity of the brewery.
- None of the retrofitted structures were damaged, the company did not have business interruption losses and saved in excess of \$300 million.