



Biotechnology Company Implements Seismic Safety

Full Mitigation Best Practice Story

San Francisco County, California



San Francisco, CA - Genentech, Inc., is a leading biotechnology company that discovers, develops, manufactures and markets human pharmaceuticals for significant unmet medical needs. Twelve of the currently marketed biotechnology products stem from Genentech science. Science at Genentech focuses primarily on three areas of medicine: cardiovascular, oncology and endocrinology.

To protect their employees and reduce business interruptions in the event of a natural disaster, Genentech has developed a comprehensive disaster preparedness program. The program includes the establishment of a fully trained and supplied emergency response team and the evaluation of the structural integrity of their facilities. A risk assessment was done to determine the level of risk for natural hazards and to devise an appropriate response plan for the company. One of the primary goals was to minimize the amount of damage to their facilities and to prevent the possibility of a "red tag" or condemnation situation, with the ultimate goal of minimizing business interruption.

Upon completing the evaluation of its facilities, mitigation projects were identified along with associated costs. Those costs were compared to the cost of insurance. It was determined that the value of the facilities and production time was such that the real value of insurance was questionable, given the cost. Knowing this information, Genentech officials decided to invest in the retrofitting of their facilities. Genentech occupies almost two million square feet of space in 21 buildings in South San Francisco and five buildings in Vacaville, CA.

Genentech's early seismic review and assessment of their facilities included an evaluation of corporate risk. Upon completion of the evaluation, two action plans were created. First, development of corporate design guidelines for new facilities; second, seismic upgrade plan for existing facilities. The decision to pursue upgrades of existing buildings was made with consideration for the practical aspects of insuring for business risk, and the real need to assure business continuity.

Strengthening of existing buildings (done in 7 of 9 buildings) included a variety of upgrades, such as additional ties at roof/interior wall junctions, and at roof support joists (for tilt up buildings) to additional steel cross bracing at column lines for other building types. The structural retrofit work exceeded the current minimum building code requirements.

Non-structural retrofit for seismic preparedness included bolting and bracing shelves, as well as adding shelf lips or edges to stabilize items placed on them. Emergency power generation was also deemed necessary for many of the critical facilities with adequate fuel available for at least 72 hours of operation. The broader plan includes emergency water and food for a portion of the employee population, as well as other business recovery safeguards for groups such as Information Resources.

The costs for the seismic retrofit work to date were approximately \$3-5 million. Genentech estimates that facilities loss values could be from zero to \$30 million per building, depending on the building, while business interruption could potentially be somewhat in excess of those values. With the large number of buildings currently completed, these cumulative values can represent a substantial overall value.

Loss of production time that could result from the effects of a natural disaster, primarily earthquake, was determined to be an unacceptable risk. Business continuity is of vital concern to Genentech to support the advancement of science and to meet the unmet needs of their customers who use Genentech's unique biotechnology products.

Mitigating the buildings and establishing a comprehensive employee preparedness plan will reduce significant risk to the organization in the event of future disasters.

Activity/Project Location

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

FEMA Region: **Region IX**

State: **California**

County: **San Francisco County**

Key Activity/Project Information

Sector: **Private**

Hazard Type: **Earthquake**

Activity/Project Type: **Retrofitting, Structural**

Structure Type: **Concrete, Reinforced**

Activity/Project Start Date: **01/1995**

Activity/Project End Date: **01/1998**

Funding Source: **Business Owner; Local Sources**

Funding Recipient: **Business/Industry**

Funding Recipient Name: **Genentech, Inc.**

Activity/Project Economic Analysis

Cost: **\$4,000,000.00 (Estimated)**

Non FEMA Cost:

Activity/Project Disaster Information

Mitigation Resulted From Federal
Disaster? **No**

Value Tested By Disaster? **No**

Repetitive Loss Property? **No**

Reference URLs

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

Reference URL 2: <http://www.gene.com/gene/index.jsp>

Main Points

- To protect their employees and reduce business interruptions in the event of a natural disaster, Genentech has developed a comprehensive disaster preparedness program.
- Facilities were evaluated and mitigation projects identified along with associated costs. Those costs were compared to the cost of insurance. It was determined that the value of the facilities and production time was such that the real value of insurance was questionable, given the cost.
- Strengthening of existing buildings (done in 7 of 9 buildings) included a variety of upgrades, such as additional ties at roof/exterior wall junctions, and at roof support joists (for tilt up buildings) to additional steel cross bracing at column lines for other building types. The structural retrofit work exceeded the current minimum building code requirements.
- The costs for the seismic retrofit work to date were approximately \$3-5 million. Genentech estimates that facilities loss values could be from zero to \$30 million per building, depending on the building, while business interruption could potentially be somewhat in excess of those values. With the large number of buildings currently completed, these cumulative values can represent a substantial overall value.