Natural Hazards Analysis

Awareness and concern for natural hazards has increased significantly in recent years, both from internal risk management as well as insurance liability perspectives. Global Risk Consultants (GRC) regularly helps companies identify these exposures, evaluate their severity and potential impact, develop action plans, and implement cost-effective mitigation strategies at the local site and corporate levels.

An effective natural hazard analysis and control program is based upon simple, basic data. GRC acknowledges the importance of this and collects both primary and secondary building and site data, which can then be imported into hazard modeling programs. Using this collected data, aggregate loss potentials can be developed across a portfolio of properties.

GRC’s engineers are trained in natural hazard analysis and identification, allowing them to gather accurate information regarding critical construction and building envelope elements, as well as site-specific features.

Each assessment will identify key non-structural recommendations and any remedial action that can be taken to minimize the potential property loss and subsequent impact on ongoing operations. Since these types of losses frequently fall under the deductible of most insurance programs, benefits will accrue directly to your company’s bottom line.

Earthquake

Many heavily populated and industrialized areas live with major seismic exposure. Despite this significant risk, numerous industrial operations do not have earthquake insurance, or have purchased it with very high deductibles. As a result, the potential impact on the bottom line due to an earthquake far outweighs that of a fire, explosion, flood, windstorm, or other covered exposure.

GRC considers the exposure to seismic events in every site evaluation. We help reduce the potential impact of these events by working with site personnel to anchor key equipment, install seismic shut-off valves on flammable gas and other hazardous material distribution systems, develop effective emergency response and business continuity plans, review new construction specifications and plans, and implement cost-effective measures to address seismic exposures in the early stages of construction.
Flood
Examine flood exposure is a key part of a thorough site evaluation. The GRC natural hazards program includes a review of flood maps generated by government entities and special flood studies from other sources to determine the flood exposure level of a facility. Exposure could exist from a nearby river or other body of water, coastal flooding, breach of levee, or flash flooding.

We couple that information with a thorough understanding of site operations and site-specific data to provide recommendations on reducing the risk of damage and business interruptions from flooding.

Windstorm and Hurricane
GRC windstorm experts work closely with companies who have facilities exposed to hurricanes and other strong windstorms. Site preparedness is important in limiting loss potential from hurricanes and other windstorms, because there is usually time to prepare for an impending event. Our experts work with clients on corporate preparedness plans specific to the client’s occupancy and individual facilities.

In addition, GRC monitors and forwards information obtained from The National Hurricane Center and other sources to companies with locations in the projected path of a hurricane, providing additional consulting services for specific needs at these individual sites.

Other Exposures
GRC site evaluations also include other natural hazard exposures such as tsunamis (usually the result of an earthquake), landslide/earth movement, tornadoes, hail, rainwater ponding or heavy snow loading, volcanic activity, and wildfires. Data regarding event probability and potential severity is gathered from a variety of sources, including government studies, FM Global Data Sheets, and industry data.

GRC Natural Hazards Analysis services include:

- Analysis and documentation of earthquake, flood, windstorm, and other natural hazards
- Analysis specific to the features of each site including any previous efforts to mitigate loss or damage that go beyond code requirements at the time the facility was constructed
- Identifying natural hazard exposures and evaluating their severity and impact
- Extensive on-site evaluation
- Preparedness planning both on corporate and location-specific levels
- Monitoring and notification/consulting of events such as hurricanes, volcanic eruptions, and wildfires
- Training programs
- Cost-effective recommendations to reduce loss potential
Risk Managers should be aware that natural hazard models are not intended for one location or a small portfolio of sites and cannot take into account site-specific features of individual properties. The estimates of potential loss provided by models may not be adequate enough for high value or critical locations; business interruption or market-share driven sites; contents and/or equipment-intensive sites; countries where design, construction, and/or inspection practices are weak or variable or unusual; and non-typical construction types.

GRC has the capability to go beyond modeling, with detailed site-specific analyses conducted by licensed structural engineers specializing in risk analysis.

This approach goes far beyond desktop portfolio computer models by:

- Identifying building and equipment features that either significantly improve or detract from the performance, which may not be possible to model
- Including building, equipment, and business interruption loss expectancies and scenarios on a per site basis based on actual conditions instead of averages or percentages based solely on expected building damage
- Providing important mitigation, planning, and insurance data for corporate risk managers and insurance companies
- Accurately and quickly determining correct structural characteristics of your facilities for portfolio analysis
- Identifying major deficiencies which, if eliminated, would likely provide the greatest reduction in risk at the evaluated location(s)
- Studying damage potential due to earthquake, flood, windstorm, hurricane, and other exposures; a phased approach with priorities and business decisions based on actual expected loss scenarios, damage estimates, and retrofit schemes
- Understanding the risks and quantifying the damage with a quick, realistic estimate of the corporation’s existing Probable Maximum Loss (PML)
- Identifying and prioritizing Loss Control opportunities so that management can decide whether it is necessary to continue on to further steps
- Developing options for strengthening and performing cost vs. benefit analysis for the buildings, equipment, and systems that are identified as having an unacceptably high risk
- Prioritizing solutions that make business sense on the basis of safety, budgets, and overall corporate goals
The benefits of GRC Natural Hazards Analysis services include:

- Facility-by-facility analysis, specific to individual site conditions and location
- Site-specific analyses to identify risks and develop action plans and mitigation strategies
- Collecting primary/secondary modeling input data on a site-specific, building-by-building basis
- Thorough analysis utilizing actual site-gathered data and observations, not simply a desktop review
- Pre- and post-loss consulting to prepare sites for impending events and recovery
- Expert staff, trained in natural hazards analysis and preparedness planning
- Solutions designed to meet your particular needs
- Application of the latest, state-of-the-art engineering technology
- An unbiased perspective and analysis, regardless of insurance coverage