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Paying Attention To Concentration

The focus has moved beyond natural disasters like earthquakes and hurricanes to include possible terrorist targets such as nuclear power plants, large public gathering locations, national historic sites and tall buildings in major cities.

BY JIM RATHBURN AND MITCH WALTMAN

In the post-Sept. 11 world, the ability to assess and manage risk exposure, particularly concentrated risk, has become increasingly important for group insurers and corporate risk managers. As a group reinsurer, we're seeing definite evidence of this trend among our customers. More than ever before, insurers want to know exactly where their risk is. They are willing to take the steps necessary to determine the amount of life and AD&D volume that is located in a specific area, building or geographic site in order to mitigate risk. There is emphasis on gathering and understanding the amount

of life and AD&D volume located at a specific address, building or significant geographic site. This is due in part to senior management or corporate boards seeking to define reasonable levels of concentrated risk, as well as the need to revise internal underwriting guidelines to price for, or manage, concentrated risk. It is also becoming a factor in the pricing of reinsurance and catastrophe coverage.

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tall buildings in major cities.

Group insurers have come to understand that the first 24 hours after a natural disaster or terrorism event are critical—not just for rescue workers and law enforcement—but for insurers to come up with an accurate assessment of risk and exposure. It comes down to two factors: How much you know beforehand and your capacity to react quickly afterward.

Here are three disaster scenarios that provide information you're likely to know after an event. Given this information, what *don't* you know about your concentration of risk?

The Big Quake

A 7.7 earthquake hits San Francisco at 10:19 a.m. on a Wednesday, near the epicenter of the 1906 quake. Major fires break out shortly after the first tremor. A major aftershock at 1:32 p.m. causes further destruction and compounds relief efforts. Damage extends south to San Jose and north to Santa Rosa.

Twenty-four hours after the quake, the best estimate of human casualties are 150 to 500 dead or missing and 1,000 to 5,000 people seriously injured in San Francisco; 75 to 250 dead or missing and 500 to 2,500 seriously injured in San Jose; and 25 to 80 dead or missing and 125 to 750 seriously injured in Santa Rosa.

You know you have interests throughout the affected area. Do you know how much exposure you have altogether, or in any particular building?

Fire in a Crowded Theater

A theater has 2,618 seats: 1,569 on the main floor and 1,049 in the balcony. There are four exits from the main floor (all located at the back), and four exits from the balcony (each centrally located in a quadrant of the seating).

During the show, an electrical fire starts on stage, ignites some drapes and, within two minutes, the first row of seats bursts into flames. The foam seats being very susceptible to fire, it moves quickly toward the back. The sprinklers had been turned off earlier to fix a leak and were not turned back on by accident. As the fire spreads, a panicked audience rushes to the exits and jams the doorways. When emergency crews arrive, about 10 minutes after the fire began, they free several of the exits and pull many from the fire before the balcony collapses.

Two companies—both of which you insure—brought employees and their families to the show. One company had 250 tickets on the main floor and the other had 318 tickets, all in the balcony. The remaining 2,050 tickets sold out to the general public.

Twenty-four hours after the fire began, the injury report looks like this: 1,188 people suffer minor injuries or walk out without a scratch. Another 496 victims suffer moderate injuries—severe burns, trampling trauma and smoke inhalation. There are 286 victims who suffer from major injuries—extensive burns and trauma. There are 159 people re-

ported dead, and another 489 are reporting missing.

Rescuers still hold out hope that some people may be trapped alive under the debris of the balcony. What's your exposure based on the number of potential deaths from the disaster?

Nuclear Terrorism

At 2:58 p.m. on a Tuesday, terrorists pilot a fuel-filled Boeing 747 into the main reactor at the nuclear power plant 30 miles northwest of a major U.S. population center. The impact breaks through the concrete containment walls, spilling burning jet fuel and possibly other explosives into the main reactor area, disrupting mechanical safety features and leading to a meltdown.

The force of the explosion and subsequent fire sends a cloud of radioactive debris and particulate matter into the air. Of the 200 workers at the plant at the time, 50 die in the initial explosion and another 50 will die from radiation poisoning in the first 24 hours.

News reports lead to widespread panic before evacuation plans can be implemented, and all primary routes out of the city are clogged during the first 24 hours. The government successfully evacuates most of the sparsely populated areas around the plant.

The primary risk to those away from the plant is from radioactive fallout. The prevailing wind is from the west at 15 mph, blowing the fallout in the direction of the northern suburbs. In an attempt to mitigate the risk of thyroid cancer, the government attempts to distribute radiation-blocking potassium iodide or iodate pills. However, these are most effective when taken before exposure, and the panic hampers distribution efforts.

Within hours, the following information has been posted on the Web site of an economic opportunist hoping to boost sales of potassium iodide: Exposure a mile from the plant is 26,000 Rem, exposure five miles from the plant is 11,600, exposure 10 miles away is 6,400, exposure 25 miles out is 2,200, exposure 50 miles out is 760, exposure 100 miles away is 200, exposure 150 miles out is 72 and exposure at 200 miles out is 32 Rem.

In addition, the Web site claims that exposure to 3,000 Rem or more results in death within hours of the explosion, exposure to 900 Rem or more means likely death within 2 to 14 days, expo-

sure to 300 Rem or more results in extensive internal damage, and exposure to 90 Rem or more causes a temporary decrease in white blood cells. Yet another source says that cancer risks may be increased as far as 500 miles away.

None of the data comes from an official or even necessarily reliable source. Based on your data on your interests in the area, what's your best estimate of your risk?

Steps to Better Management

Many of our clients have discovered that greater awareness means greater control. We've seen that insurers who have concentration of risk data at their fingertips and who can provide reasonably accurate estimates of exposure within a short time frame gain competitive advantages in pricing their own coverage and securing reinsurance.

Here are four steps you can take to put your company in a stronger position to assess and manage the impact of disasters:

- Define your risk tolerance. Whether by gut feel or by formula, determine how much exposure is acceptable for your organization in a particular geographic area.
- Collect and maintain meaningful data. An administration or billing address is not a realistic indication of actual business locations and dispersion of insureds. Build a comprehensive database that allows you to determine clients' exposures by geographic distribution, ZIP code by ZIP code, building by building.
- Map employee locations. A visual representation of total risk exposures by location and proximity to one another or specific landmarks can enhance understanding of exposure and aid determination of tolerable risk.
- Be ready with answers. Plan ahead with a methodology to estimate loss for potential disasters. Review likely scenarios or use risk modeling for a clearer picture of the possible impact on your interests.

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