

Calculating America's earthquake risk

Agustin Armendariz, California Watch, 2-17-10

In a report to Congress, the likelihood of devastating earthquakes occurring within the United States is balanced against the costs associated with reducing the nation's vulnerability.

"Close to 75 million people in 39 states face some risk from earthquakes," according to the report, but the relative hazard each state faces in a given year vary widely.

"Alaska is the most earthquake-prone state, experiencing a magnitude 7 earthquake almost every year and a magnitude 8 earthquake every 14 years on average," the report says. "Because of its low population and infrastructure density, Alaska has a relatively low risk for large economic losses from an earthquake."

California, on the other hand, with its large number of residents and wide-spread infrastructure, is at the greatest risk because of "the state's frequent seismic activity."

These facts shouldn't come as a big surprise, considering both California and Alaska are both part of the Pacific Ring of Fire.

Far away from the ocean, or any tectonic boundaries, lies another potentially hazardous area: the New Madrid Seismic Zone, which stretches from Northwestern Tennessee to Southern Illinois.

Unlike most earthquake zones, which occur along plate boundaries, New Madrid is special, in that it is in intraplate zone. This unique fault setting is rare, but makes the region vulnerable to particularly devastating earthquakes, even if they don't occur nearly as frequently as in Alaska or California

In the winter of 1811-1812, a series of three earthquakes with magnitudes ranging from 7.2 to 8.0 rocked the Mississippi Valley, with epicenters nearest the town of New Madrid, Mo. Over the course of the following year, the region would experience more than 200 earthquakes.

It's also been generations since an earthquake hit the New York-Northern New Jersey-Long Island metropolitan area, but the area does have a "relatively low seismic hazard," according to the report.

Back in California, residents have long been told that the "Big One" is on its way. According to a 2008 report from the U.S. Geological Survey, a large earthquake is nearly certain within the next few decades. The chance of a magnitude 6.7 or greater earthquake hitting California in the next 30 years is 99 percent, the report said.

Despite the ominous prediction for California and the frequent big ones in sparsely-populated Alaska, the report concludes that devastating major earthquakes are "low-probability but high-impact natural hazards" in the United States.