



Basic Earthquake Scenario

M6.5 Earthquake - New Madrid Seismic Zone

Background

At 10:15AM local time, a damaging earthquake strikes along the New Madrid Seismic Zone (NMSZ) in the central region of the United States. The epicenter is determined in the Bootheel of Missouri. The most damaging shaking occurs in Northeastern Arkansas, Western Tennessee, the Bootheel of Missouri, Western Kentucky, and Southern Illinois. Less severe but still damaging shaking occurs in an area stretching from St. Louis, Missouri southward to Grenada, Mississippi and from Little Rock, Arkansas east to Nashville, Tennessee. Seismologists measure the earthquake a magnitude 6.5, making it the largest earthquake to hit the region since 1895. Ground shaking from the main shock lasts for approximately 45 seconds in some areas. Aftershocks of varying intensity are felt throughout the region for several days after the main shock, and cause further damage to structures already weakened by previous shaking. Tremors are felt as far away as the east coast of the United States, and damage is seen in at least eight states.

Direct Earthquake Damage

As a result of this earthquake, there are more than 2,500 people with injuries requiring hospitalization and an estimated 100 fatalities. Thousands others receive injuries requiring minor medical attention. Most of the injuries are caused by objects (bookshelves, top-heavy furniture, appliances, and electronics) falling on people. Other injuries are caused by walking on broken or falling glass, people who were trying to walk or run during the earthquake, and were injured by pieces of buildings falling on them and they were thrown to the ground, many suffering broken bones.

Thousands are missing or separated from their families. Thousands of earthquake victims' homes and possessions are destroyed or damaged, causing many to seek short term shelter. Partial levee collapses and high water conditions due to heavy spring rains result in flooding along the Mississippi River, displacing hundreds of people. Most of the region is experiencing shortages of essential supplies, such as fresh food, bottled water, fuel, and generators.

Damaged bridges and roadways and damage to shipping vessels cause oil and hazardous material (HAZMAT) contamination in cities, towns, waterways, and farmland in the affected area. The Mississippi River experiences a brief uplifting of its riverbed, causing temporary appearance of reverse-flow.

Across the affected states widespread damage occurs to drinking water distribution and wastewater collection systems as well as treatment facilities, the national power grid, oil and natural gas pipelines, and roadways. Large structural fires break out because of damage to gas pipelines.

Due to the nature of the geology in the Mississippi River Valley, shaking and soil liquefaction of land surrounding the fault line caused the following:

- Localized flooding in low-lying areas with river bed changes along the Mississippi River
- Compromised or damaged bridges, roads, railroad bridges and tracks, buildings, and other

This scenario is provided for planning purposes only. It is not intended to be representative of what may or may not happen in a real earthquake, which is impossible to predict.

infrastructure

- Compromised or damaged oil and natural gas pipelines
- Structural damage to dams and levees (including burms and built-up road beds)
- Structural damage to drinking water treatment and distribution and wastewater collection and treatment facilities
- Power outages as a result of transmission line damage
- Communication failure because of cell phone tower and phone line damage

Long Term Effects

Many buildings, bridges, and other infrastructure will need to be inspected for safety and repaired before they are safe to use after a damaging earthquake. This process could take months to complete in some areas, and years to complete in others. Aftershocks may cause the inspection process to start over. Some households will need long-term sheltering or relocation assistance. Many businesses may close in the areas closest to the epicenter, causing economic depression, loss of jobs, and loss of tax base for many small communities.

What Can You Do to Prepare?

By planning and practicing your response to an earthquake (or any disaster) you are putting yourself in a better position to be able to resume a normal life afterwards. This is why the ShakeOut is important. It allows us an opportunity to prepare now, and increase our chances for survival. What we do now before an earthquake, will help determine what are lives are like afterwards. Some key questions to ask yourself if a major earthquake were to hit your community:

- How would you react when the ground begins shaking? You never know when a tremor might be the next big earthquake.
- After a disaster, who would you contact? What actions would you take to ensure the immediate safety of yourself, your family, or those in your workplace?
- Do you have a family emergency plan? Is your information stored in several locations (even out of state or online) so that if your residence is destroyed, you can still access it?
- Do you have an emergency supply kit? If so, do you review its contents regularly? Do you need to add anything to it (new prescriptions, extra clothes, etc.)
- What items in your home or workplace could be easily secured to prevent earthquake related injuries or deaths? Things like bookshelves, water heaters, appliances, and heavy pictures are all easy candidates for earthquake mitigation measures. Earthquake mitigation can be affordable and easy to do when taken in small steps. For more information, see http://www.earthquakecountry.info/roots/seven_steps.html.

Plan today to be ready before, during, and after the next earthquake or other disaster. Visit

www.shakeout.org/centralus for more information