

✓ Back to 6.9 *Earthquake - Geological* 16-6-90 for big quake

But USGS sticks to 7.1 estimate

By MARK BERGSTROM

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SANTA CRUZ — If you bought one of the first earthquake T-shirts don't throw it away.

A team of seismologists headed by Karen McNally of UC Santa Cruz has determined that the "local" magnitude of the Oct. 17 quake was 6.9.

The earliest "I survived the quake" shirts used the 6.9 figure.

But then the U.S. Geological Survey upgraded the measurement to 7.1.

McNally said Friday that a team from UC Santa Cruz and Cal State Northridge have settled on the 6.9 figure after combining data from distant seismic stations with records from instruments that had been set in the summit area after the magnitude-5 foreshock in April 1989.

McNally said a precise measurement is crucial to structural engineers and emergency-response teams who must have some idea of the shaking and damage that could result from future large earthquakes.

The USGS says it will continue to use the 7.1 figure, which it says is based on the most modern scale of measurement of longer, surface waves that travel around the world.

The "local" measurement is based on an older measurement of high-frequency waves, according to U.S.G.S. seismology chief Bill Ellsworth.

The local measurement corresponds most closely to the original Richter scale developed by seismology pioneer Charles Richter, said Ellsworth.

Richter developed the scale, Ellsworth said, as a simple means of quantifying hundreds of earthquakes which had struck the Southern California region.

The number assigned to a quake, he said, was the maximum peak recorded on Richter's seismograph. Richter used the term magnitude to describe the strength of a quake in the same way that astronomers described the brightness of stars, Ellsworth said.

The 1906 San Francisco earthquake, which has been assigned an 8.3 magnitude based on long-wave measurements was given a 6.9-7.0 local measurement, Ellsworth said.

"What that means is that Santa Cruz probably got the maximum ride from the San Andreas Fault," Ellsworth said. The long and short of it to Ellsworth is that all of the measurements for the Oct. 17 quake are in the range of 6.9 to 7.1.

"It's satisfying that all of them agree so well," he said.