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# Residents seek relief from quakes

## Lake County town seeks counties' help in reducing tremors from The Geysers

By [BOB NORBERG](#)  
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Residents of the Lake County community of Anderson Springs, where there are hundreds of small earthquakes felt every year related to The Geysers power plants, are asking county officials for help.

The Anderson Springs Community Alliance has filed a petition asking the boards of supervisors in Lake and Sonoma counties to regulate the power companies' activities to lessen the number and severity of the quakes.

"It has been the sleeping gorilla, just ignored by the counties and the industry," said alliance president Jeff Gospe.

The petition asks the counties "to use existing public nuisance laws to pressure the companies to operate in a way to reduce earthquakes," he said.

If they can't do that, Gospe said, the companies should compensate the residents more than they do now.

Sonoma County Board of Supervisors Chairman Paul Kelley said the petition has been forwarded to the planning department, but he doesn't know what the county could do.

"We would be actively involved in the process if there is a new facility proposed, but there is not much we can do at this point," Kelley said. "It is challenging to tie causes and effects; seismic activity is naturally occurring. Aside from the aggregate, it is hard to know what is the impact."



*PD File*

Glinda Addington talks about the crack in the foundation of her Anderson Springs home that has appeared recently, thought to be caused by the increase in earthquakes in the area due to treated sewage water being put in the geysers in the area, in this 2004 file photo.

The Geysers is the world's largest geothermal operation, straddling Sonoma and Lake counties, where wells remove steam to produce enough electricity at 22 power plants to serve 750,000 homes.

The producers also inject ground water and wastewater from the Santa Rosa regional treatment facility deep into the ground to recharge the field.

U.S. Geological Survey seismologist Dave Oppenheimer said that both actions contribute to the small quakes, 332 in 2008 alone, that shake the countryside. Most are of magnitude 1 or 2, shallow and only felt close to the epicenter.

However, it has not been established which specific steam removal or injection causes which specific quake, or how to stop the quakes without stopping the operation entirely, Oppenheimer said.

"You want to abate something, you have to understand it," Oppenheimer said.

Murray Grande, geothermal manager for the Northern California Power Administration, said the power company is trying different things, such as distributing the injection of water around its site. But officials aren't sure yet that the approaches make much of a difference.

"The science is ongoing," Grande said. "There is no definitive conclusion."

Norma Dunn, spokeswoman for Calpine, the largest operator at The Geysers, said engineers are trying to mitigate the impacts by managing the injection rate at some wells and shunting some of the water to other wells.

The petition, filed Sept. 15 and signed by 109 residents of the 200-home community, said the quakes "represent an ongoing public nuisance that infringes on the rights of residents and property owners to the quiet enjoyment of their homes, damages their property and diminishes its value, and poses potential risks to their health & safety."

Since 1975, more than 8,000 small earthquakes have shaken the area around The Geysers.

The quakes have increased in number and intensity over the years as the amount of activity has increased.

In 1975, there were 38 quakes, of which seven were magnitudes of 3 and none of 4. In 2008 there were 332, with 12 magnitude 3 and three of magnitude 4, according to UC Berkeley.

The continual shaking causes damage to homes, roads and infrastructure.

"It is like the woodpecker, you keep pecking at something and what happens? It gets weaker and weaker and weaker," said longtime Anderson Springs resident

Meriel Medrano. "You are constantly fixing minor cracks and windows and that sort of thing."

The Northern California Power Administration, which provides power to Healdsburg, Ukiah and other cities, puts \$30,000 a year into a mitigation fund for Lake County homeowners. Calpine provides \$60,000 a year for community projects in Sonoma and Lake counties.

So far, Calpine has donated \$136,281 for community projects, and since 2003 the power administration has paid \$69,219 for damage to homes, Medrano said.

*You can reach Staff Writer Bob Norberg at 521-5206 or [bob.norberg@pressdemocrat.com](mailto:bob.norberg@pressdemocrat.com)*

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