Expert Says Quakes in England May Be Tied to Gas Extraction

Henry Fountain, New York Times, 10-22-1

A British seismologist said Friday that two minor earthquakes in northwestern England "appeared to correlate closely" with the use of hydraulic fracturing, a method of extracting natural gas from wells that has raised concerns about environmental and seismological risks in the United States.

The scientist, Brian Baptie, seismic project team leader with the British Geological Survey, said data from the two quakes near Blackpool — one of magnitude 2.3 on April 1, the other of magnitude 1.5 on May 27 — suggested the temblors arose from the same source. Cuadrilla Resources, a British energy company, was conducting hydraulic fracturing, or fracking, operations at a well nearby when the quakes occurred.

In fracking, water, sand and chemicals are injected into a well at high pressure to split shale rock and release trapped gas.

The company suspended its fracking operations shortly after the second earthquake, which, like the first, was barely felt and caused no damage. Paul Kelly, a Cuadrilla spokesman, said a report by several academic scientists on the quakes, commissioned by the company, should be released in a few weeks.

"We're waiting for the independent report," he said.

One possibility is that the British government, through the Department of Energy and Climate Change, might require modification to the fracking process.

Mr. Kelly said Cuadrilla Resources had drilled three wells — the only shale-gas wells so far in Britain — and had conducted fracking operations at only one.

Fracking is now widespread in the United States, and has been blamed by some landowners, environmentalists and public officials for contaminating waterways and drinking water supplies. Some critics have also said that the technology could cause significant earthquakes.

But Stephen Horton, a seismologist at the University of Memphis, said, "Generally speaking, fracking doesn't create earthquakes that are large enough to be felt." Even so, Mr. Horton said that after looking at the British Geological Survey's analysis of the Blackpool earthquakes, "the conclusions are reasonable."

Mr. Horton and others investigated a swarm of earthquakes in 2010 and 2011, including one of magnitude 4.7, in an area of central Arkansas where fracking was being conducted. The scientists found that the earthquakes were probably caused not by fracking but by the disposal of waste liquids from the process into other wells. Those wells have since been shut down.

Mr. Baptie said that in the Blackpool quakes, the high-pressure injection of water during fracking may have reduced the stresses on a nearby fault, causing it to slip.

He said one question was whether even larger earthquakes could occur if the fracking continued. While he said that it might be possible to go from a magnitude 2.3 to about a 3.0, "the chances of getting a very large earthquake are negligible."