Drilling Into Deep Trouble

by Laura Wright

On September 5, a year after Hurricane Katrina tore through the Gulf of Mexico, Chevron announced to great fanfare the successful testing of a new oil well located 175 miles off the coast of New Orleans, at a water depth of more than 7,000 feet. Wall Street analysts declared the find the best thing to happen to domestic oil since the completion of the Trans-Alaska Pipeline. Chevron's test well, dubbed Jack 2, is one of a dozen new drill sites that dip into an ultradeep geologic formation known as the Lower Tertiary Trend. It covers a 300-mile-wide swath of the Gulf and contains anywhere from 3 billion to 15 billion barrels of oil. (Total U.S. reserves are estimated to be less than 30 billion barrels; we consume more than 7.3 billion barrels in a year.)

Now here are the problems: First, all that fancy new gear will face an increasing threat of crippling hurricanes, spurred by rising ocean temperatures. Katrina and Rita shut down all oil production in the Gulf twice within four weeks. About 3,000 of the 4,000 platforms were in the direct path of the storms, as were 22,000 of the 33,000 miles of pipeline that snake along the seafloor. Despite the fact that such infrastructure is engineered to withstand hurricane-force winds and currents, 113 platforms were demolished; industry losses topped $15 billion. As deepwater fields are developed, potential economic losses skyrocket. Whereas the cost of setting up the infrastructure necessary to develop a single shallow-water field is about $100 million, developing a lone deepwater field costs more than $1 billion.
With more powerful storms comes a brand-new hazard: earthquakes. Earthquakes are exceptionally rare in the Gulf; there are no tectonic plates grinding together down there. Yet in the six months after Katrina and Rita ran ashore, there were two earthquakes off the Louisiana coast with a magnitude of 5.2 and 4.8. Meredith Nettles, a seismologist at Columbia University’s Lamont-Doherty Earth Institute, believes that Katrina and Rita redistributed seafloor sediments, piling up too much mass in some places, thereby triggering sudden underwater landslides large enough to generate seismic waves. Earthquakes and oil infrastructure are a bad combination. Before we venture too far from shore, we might consider the risks this will entail -- risks that will only increase with every barrel we burn.

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