

Two reports claim Diablo Canyon is safe from earthquakes

Colin Rigley, San Luis Obispo New Times, 9-18-14

Pacific Gas & Electric and the Nuclear Regulatory Commission nearly simultaneously issued two separate, hefty reports that address the seismic hazard at the Diablo Canyon nuclear power plant. Both reports concluded that the plant is safe from the largest conceivable earthquakes and is properly licensed, and that claims to the contrary don't fit the data.

The announcements came within an hour of one another on the morning of Sept. 10.

First, the NRC publicly released its response to claims from Michael Peck, currently an NRC senior reactor technical instructor and the former senior resident NRC inspector at Diablo Canyon. As detailed by the Associated Press and in the June 2013 *New Times* article, "[Calculational garbage](#)," Peck was involved in a years-long regulatory dispute process over Diablo Canyon's license as it relates to seismic hazards. He claimed that PG&E was in violation of its existing license and that new seismic information spurred by the 2008 discovery of the Shoreline fault led him to conclude the plant requires a license amendment.

His protests were raised to the level of a "differing professional opinion" (DPO) and a later appeal to the NRC. In the appeal, Peck argued that Diablo Canyon is operating outside the boundaries of its license, and PG&E is required to obtain a license amendment. In the interim, he said the plant should be closed until that amendment is granted.

In fact, PG&E applied for such an amendment in October 2011, but was informed that the NRC would deny its amendment as it didn't meet the necessary criteria. The company withdrew its request a year later, and the ruling opinion remains that the plant's license is in order.

At the crux of the issue is a complex regulatory framework over Diablo Canyon's ability to safely shut down in the event of an earthquake. While his superiors claim the plant is licensed to withstand the largest jolt possible from the Hosgri fault—the largest known in the area—Peck countered that the license holds Diablo Canyon to a different standard.

After reviewing the DPO, an NRC ad hoc panel determined:

- Peck's DPO did not "reveal a significant immediate concern" with Diablo's seismic vulnerability.
- "The seismic licensing history of Diablo Canyon ... is long, complex and unique, and has been thoroughly evaluated by both staff and the licensee."
- Peck brought to light important information about ambiguities in Diablo Canyon's license, but it remains seismically safe.
- NRC staff followed the appropriate processes, and any further seismic evaluation will turn up when PG&E submits a post-Fukushima report early next year.
- There's a lack of "formal regulatory guidance for evaluating new information on natural hazards," which led to "differing interpretations."

"Ultimately, the Panel believes that the licensee's expected response to the Fukushima 2.1 seismic issue

should provide the appropriate framework for evaluating the potential significance of new seismic information,” the panel wrote in one response to Peck.

Overall, Peck claims that PG&E failed to update its operating license to incorporate new seismic information, Diablo Canyon has been operating in violation of its license, and the NRC allowed it to do so.

“We’re not doing our job,” Peck told *New Times*. “We’re not ensuring that the design basis is being maintained.”

Asked whether his opinion has changed in light of the panels’ conclusions, Peck said the NRC told him he was wrong, but didn’t elaborate why.

“From my view, when you read through what they wrote and what they did, they didn’t address the issues,” he said.

Within minutes of the NRC announcement on Peck’s DPO, PG&E announced its long-awaited seismic studies, required under Assembly Bill 1632, and the first release of a years-long evaluation before the company submits a complete seismic report to the NRC by March 2015.

PG&E began evaluating the geology and seismicity around Diablo Canyon in 2010 through a series of two-dimensional and three-dimensional studies, as well as other geologic surveys. The process has involved multiple state agencies, an independent review panel, and numerous meetings of the Senior Seismic Hazards Analysis Committee, which are still ongoing.

“This research effort, utilizing the latest technologies, demonstrates Diablo Canyon continues to be seismically safe,” PG&E Senior Vice President and Chief Nuclear Officer Ed Halpin said in a press release. “These studies provide scientists and regulators an unprecedented scientific analysis of the seismic characteristics near Diablo Canyon.”

Though the results of those studies altered the current seismic picture around Diablo Canyon, researchers concluded that the plant is still capable of withstanding the region’s largest possible quake.

According to the new seismic data, there are links between the various faults in the region, and the Shoreline extends farther south than previously believed. In response, PG&E increased the largest believed Hosgri temblor from a magnitude 7.1 to a magnitude 7.3. Diablo Canyon is said to be capable of withstanding a magnitude 7.5.

The Shoreline fault was also increased from magnitude 6.5 to a magnitude 6.76 earthquake, still below the largest possible Hosgri quake.

Spanning 14 chapters and hundreds of pages, the study offered little chance for a complete outside review as of press time.

PG&E also addressed specific concerns from people such as Dr. Doug Hamilton, who worked as a contractor at Diablo Canyon from its construction through the early 1990s. Hamilton has argued that other faults and the Inferred Offshore Fault could pose a more immediate threat to the reactor units.

However, PG&E concluded that Hamilton’s concerns didn’t turn up any new problems. The company said that such issues as the “Diablo Cover fault” do “not represent a seismic hazard,” and other data

discount his prediction of a thrust-fault formation under the plant. In its conclusions, PG&E said it would continue to consider Hamilton's models in the next phase of seismic research.

Asked about the studies, and whether the new data had changed his position, Hamilton dismissed PG&E's conclusions.

"Their approach seems to have been to gather a lot of excellent data, and then interpret it in a way that it is essentially a benign situation for the safety of the power plant," he said, noting that he was still reviewing the studies related to his models.

Jeanne Hardebeck, a research geophysicist with the U.S. Geological Survey, has also raised questions about the possibility of a reverse fault in the Irish Hills. Hardebeck, who's often credited with the 2008 discovery of the Shoreline fault, said PG&E's new data disputes some specific models, but doesn't necessarily eliminate the possibility of another fault.

"I guess it hasn't really changed my view of the Irish Hills," she told *New Times*.

She said more research is necessary at greater depths to fully understand the geology in the area, but added that the latest report has helped create a greater understanding of earthquakes.

But with the release of the studies, some people have questioned the timing and lack of outside review.

In a November 2013 PG&E email thread, PG&E Director of Geosciences Richard Klimczak told PG&E spokesman Blair Jones that an Independent Peer Review Panel (IPRP) was supposed to have been allowed two months to look over the studies before they were released to the broader public.

That email was one of several internal communications included as part of an ongoing case brought by the Alliance for Nuclear Responsibility.

IPRP Chair Chris Wills didn't return a *New Times* call for comment.

John Geesman, the attorney for the Alliance for Nuclear Responsibility, said in a prepared statement that PG&E's study "is a propaganda document, rushed into print without the advance IPRP review required by the CPUC decision which funded the \$64 million studies."

"The sole purpose for PG&E's peculiar timing is to counter Dr. Peck's report and the FOE [Friends of the Earth] action at the NRC," he added.

According to a PG&E press release, the final report was also presented to the IPRP.