

Relicensing for Diablo Canyon nuclear plant is on hold, but seismic studies draw critics

Sara Rubin, Monterey County Weekly, 8-4-11

Months after a massive earthquake and tsunami devastated northeast Japan, the full impact of a wrecked cooling system at the Fukushima Daiichi nuclear power plant likely won't be known for years to come. Meanwhile in the U.S., regulators, legislators and utilities are still probing for lessons from Fukushima.

Some geologists now say that plans for seismic studies near Diablo Canyon Power Plant may not provide the information to best help regulators determine whether the San Luis Obispo-area nuclear energy plant is safe.

In April, while Tokyo Electric Power Co. workers were still trying to contain radioactive spent fuel in Fukushima, Pacific Gas & Electric requested the U.S. Nuclear Regulatory Commission put its relicensing application for Diablo Canyon on hold, citing "considerable public concern" as the cause for delay.

The current operating licenses for Diablo Canyon's two reactors expire in 2024 and 2025. Renewed licenses would allow the plant to run until 2045, pending updated seismic studies in the San Luis Obispo area.

The studies, mostly 2D and 3D maps, are expected to resolve some unknowns about the length and geometry of at least two faults within three miles of the plant. And they're studies that State Sen. Sam Blakeslee (R-San Luis Obispo), who holds a doctorate in seismology from UC Santa Barbara, has been advocating for years.

"I think the relicensing process is the perfect time to do a top-to-bottom review," he says, "now that we're considering another 20 years."

Blakeslee called on PG&E to pull its relicensing application while conducting studies based on a bill he authored in 2006. AB 1632 required the California Energy Commission to complete an assessment of the state's nuclear power plants; the commission's 50-page report, published in 2008, called for more sophisticated mapping around Diablo Canyon. The California Public Utilities Commission approved \$17 million, to be shouldered by ratepayers, to fund the mapping.

The day after that report was released, geologists announced they had identified the Shoreline Fault, less than a mile from the plant.

Now a research geologist who discovered the Shoreline Fault says the mapping is on the wrong track for better understanding earthquake risk.

"I'm fairly skeptical about how well these imaging studies are going to work," says Jeanne Hardebeck of the U.S. Geological Survey in Menlo Park.

"My colleagues at USGS have tried these sorts of imaging studies out there. They have a very poor ability to actually see any structures in the Franciscan Rock," the granite formation underlying the Diablo Canyon plant.

She describes the formation as "different rock types smushed together, not in a coherent way" – making it a site that likely won't reveal great detail with the technique that's preferred by oil companies for examining flat,

horizontal layers of rock.

Hardebeck and her colleague, USGS research geologist Bill Ellsworth, say ocean bottom GPS would help scientists better understand the seismic risk to Diablo Canyon. The technology uses GPS devices stuck to the seafloor to show how fast plates are moving. But satellites that read GPS signals can't go through water, so to read the data, ships go out a few times a year to pick up the signals as an intermediary.

"We know the Hosgri and the Shoreline Faults are there," Ellsworth says. "The question is, how fast are they moving?"

The mapping process, for which PG&E is still obtaining necessary permits, doesn't show how fast plates are moving and doesn't provide information on how frequently earthquakes are likely to occur. It's the same technology that was used to discover the Hosgri Fault three miles offshore in 1969, when Diablo Canyon was already under construction. Re-engineering and a subsequent misreading of the revised blueprints cost \$4.4 billion.

The industry's preferred research method, the detailed mapping, appears to have more political support than the academics' method of choice, GPS. "It's absolutely the right direction to go," Blakeslee says of PG&E's approach.

But Jane Swanson, spokesperson for San Luis Obispo Mothers for Peace, worries that even if it delays the relicensing process, the detailed mapping might be the easier way to learn more about fault movement, but not necessarily the best.

"I think this much-touted seismic mapping of the Shoreline Fault is a red herring," she says.

Duncan Agnew, a geology professor at UC-San Diego's Scripps Institution of Oceanography, helped develop ocean bottom GPS. But the technology might not help officials in the immediate future, requiring a decade of monitoring.

"If the goal is to have information for relicensing in a couple of years, this is not the answer," he says.

NRC staff conducted a "walkdown" of Diablo Canyon in April, looking for operational hazards. They identified 10, but none would jeopardize PG&E's chance of getting an updated operating license.

Among the findings: doors that safeguard against flooding did not latch automatically; all six emergency diesel generators are located in the same area, making them vulnerable to one emergency event; an earthquake could destroy the building where PG&E's fire truck is stored, or block access to it.

Blakeslee maintains that detailed mapping will allow NRC to make a well-informed decision on whether to renew Diablo Canyon's license.

"I'm of the opinion that NRC has a history of only responding to hard data before them, which causes them to be very industry-friendly," Blakeslee says. "However, when there are hard facts at their disposal, my impression is they will consider that information responsibly. This has mostly been a battle about forcing the information into the hands of the NRC."

Joel Reynolds, an attorney who represented activist groups including Mothers For Peace in litigation

surrounding the original 40-year operating license and now works for the Natural Resources Defense Council, doubts the NRC's objectivity.

"I think the NRC is the best example of a captured regulatory agency that I know," he says. "I would hope that in the wake of the Fukushima disaster, the [nuclear plant] reassessments done in this country are independent. I don't think that either the industry or the NRC have demonstrated the level of objectivity necessary to engender public confidence."