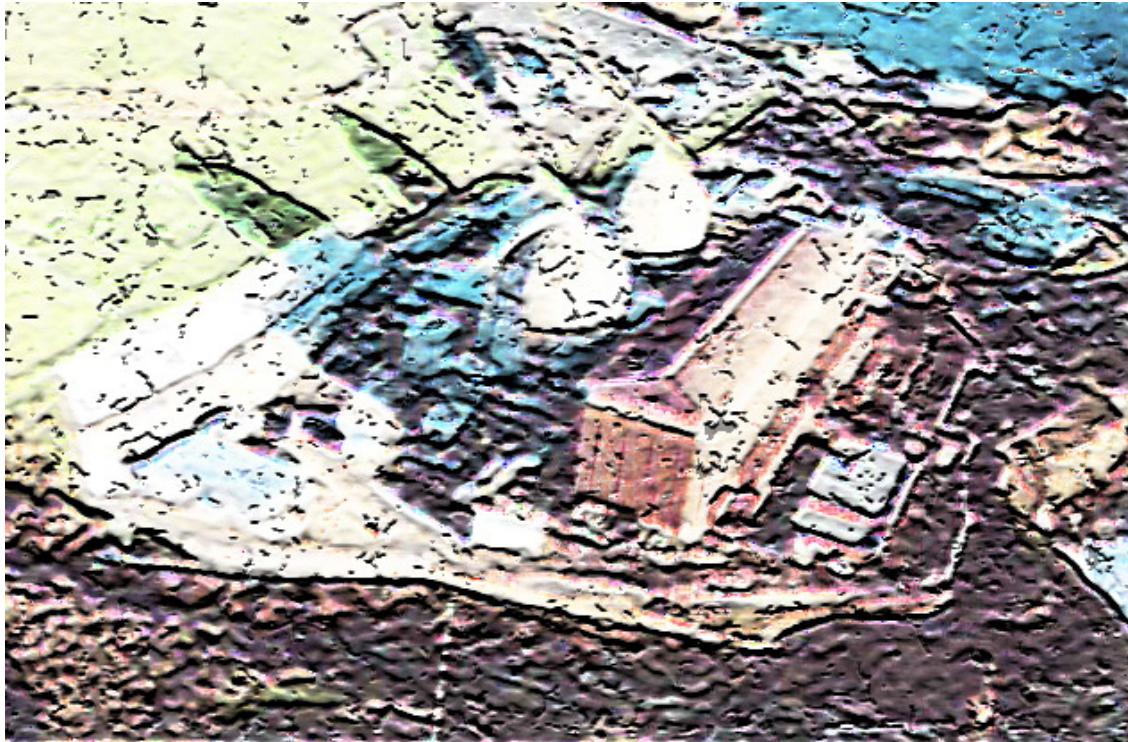


# What's Shaking at Diablo?

**The nuclear plant's new lease on life has a mountain to climb**



When the state legislature expressed its intent to keep the Diablo Canyon Nuclear Power Plant open six years beyond its planned 2024 closure date, it attached contingencies to a promised \$1.4 billion loan to PG&E for that purpose. One of those contingencies was “a covenant that the operator shall conduct an updated seismic assessment.”

On June 5, when [the California State Lands Commission issued a new lease](#) for Diablo’s cooling water outfall to match up with the new potential 2030 plant retirement date, they became the first state agency to formally connect the requirement for updated seismic assessments with the state mandate that the extension of Diablo’s life must be all about “maximizing reliability, minimizing interruptions to the Diablo Canyon Power Plant’s generation of electricity, and minimizing the need for costly purchases of replacement electricity.”

In other words, the new state lease has made it clear that Diablo must pass seismic muster, and it won’t be sufficient to show that the reactors, spent fuel pools, and other safety features can take the worst that the surrounding web of earthquake faults can throw at it without a catastrophic radiological release. The seismic assessment must also show the ability of the plant’s non-safety

structures, systems and components to survive that quake. The continued functioning of those structures and components is required to keep the plant running. Their survival means the difference between uninterrupted electricity generation and the plant going out of commission for up to a year or more while the state scrambles to make those costly purchases of replacement electricity. If PG&E can't show that those structures could survive that quake, Diablo can't meet the state's reliability requirement.

(Nuclear energy proponents are fond of pointing out that Diablo came through the 2003 San Simeon earthquake just fine. That was a 6.5 magnitude quake on a fault thirty miles away – far less than the 7.5 jolt that could be generated by a joint rupture of the nearby Shoreline and Hosgri faults.)

Last year, the [Alliance for Nuclear Responsibility](#) pointed out to the state that its loan requirement for an updated seismic assessment should “include structures, systems, and components (‘SSCs’) that are Design Class II, as well as the Design Class I SSCs that are ordinarily the focus of review by the U.S. Nuclear Regulatory Commission.”

The Alliance noted that PG&E contractors assessed 300 Design Class II Structures, Systems and components at Diablo in 2010, finding that:

“The non-safety related systems, structures, and components (SSCs) of the plants are most vulnerable to damage from earthquakes. Damage to non-safety related SSCs is the greatest source of seismic-related plant reliability risk for [San Onofre] and Diablo Canyon. Damage to non-safety related SSCs could pose risks of injury and loss of life to plant workers and occupants but damage would not pose a direct safety hazard to the public; however, it could result in extended outages for repairs lasting weeks or months. The seismic-related reliability risk of non-safety related SSCs is not well understood in large part because the nuclear industry and the NRC historically have focused on safety-related SSCs.”

That has indeed been the focus of the nuclear industry. (And elsewhere in its assessment, PG&E identified a specific Class II component that has the potential risk of a one to two-year shutdown due to seismic vulnerabilities.)

The testimony of Dr. Norman Abrahamson, a senior PG&E geoscientist, at a Sept. 25, 2008, hearing of the California Energy Commission underscored the point:

“When we talk about reliability, we are generally looking at the performance of the plant for a below design basis earthquake that is actually likely to happen.... We think reliability is going to be driven by a much more frequent, smaller magnitude earthquake for which our non-safety-related systems would be damaged.... That has not been addressed by the industry in general. It has been so focused on safety that we have let that part go.”

They can't let that part go anymore. The extension of Diablo's life and PG&E's \$1.4 billion payday depends on the identification and mitigation of seismic risks to plant reliability. As the Alliance for Nuclear Responsibility puts it, “SB 846's qualification as an urgency statute is based upon the necessity of ‘ensuring electrical reliability in the California electrical system.’”

