

# Diablo Canyon Power Plant Seismic & Flooding Hazards Re-evaluation

## Quick Facts on Re-evaluations:

• Performed at direction of Nuclear Regulatory Commission (NRC)

• Continue to show Diablo Canyon can withstand earthquakes, tsunamis and flooding

• Performed with independent experts using latest scientific methodologies and site-specific information

• NRC will independently review

## Seismic & Flooding Hazards Re-evaluation

New and extensive analyses performed at the direction of the Nuclear Regulatory Commission (NRC) re-confirm that Diablo Canyon Power Plant can safely withstand extreme natural events, including potential earthquakes, tsunamis and flooding.

The hazard re-evaluations used the latest regulatory guidance, scientific methods and models, site-specific information and independent expertise to re-evaluate the impacts that earthquakes, large waves and flooding could have on the facility.

#### **Seismic Hazard Re-evaluation**

Represents a more extensive evaluation of the seismic hazard than previously performed.

Using the NRC's Senior Seismic Hazard Analysis Committee (SSHAC) process, independent seismic experts publically reanalyzed existing and new seismic information, including data acquired during the advanced seismic studies, to reevaluate how earthquakes could potentially impact the facility. The probability of earthquakes occurring on individual and multiple geologic faults was also determined.



#### Key Results:

- Confirms plant's design can withstand earthquakes from all regional faults.
- 0.0001 annual chance of an earthquake producing ground motions of .8g (red line on graph).
- .8g does not exceed the robust seismic design margin of the plant.
- The plant has at least 35% design margin beyond .8g (green line on graph).
- A minor exceedance (approx. 7%) in the Hosgri earthquake design in a specific, low frequency range (1.33 Hz) that does not impact safety (circle on graph).
- No safety structures, systems and components required for safe shutdown are sensitive to ground motions at a frequency below 3 Hz.

Above: Comparison of plant design margin spectrum versus Ground Motion Response Spectrum (GRMS), Hosgri Design Spectrum, Long Term Seismic Program (LTSP) Margins and Double Design Earthquake (DDE) Seismic Spectra for Diablo Canyon Power Plant.

\* Orange shading indicates critical natural frequency range in Hz of safety-related structures, systems and components at Diablo Canyon.



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## **Tsunami/Flooding Hazard Re-evaluation**

Used the latest NRC guidance, methodologies and independent expertise to determine the maximum waves and rainfall that could impact the site.

Key Results:

- Plant continues to be safe from tsunamis, including those generated from underwater landslides and earthquakes.
- Design can withstand expected storm flooding.
- Measures were identified -- and have already been implemented -- to address a rare, theoretical event of excessive rainfall.

## What's Next?

PG&E will submit the re-evaluations to the NRC for independent review on March 12, 2015.

The NRC will later provide guidance on how and when PG&E should perform an additional risk assessment that examines the probability of earthquakes potentially damaging plant safety equipment. The same evaluation is being asked of other U.S. commercial nuclear power facilities.

The NRC will also review the flooding re-evaluation to determine if additional actions might be required to further enhance safety.