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California

Experts Weigh in on Seismic Safety at Diablo Canyon in Letter to Newsom

An extensive review of the Diablo Canyon Nuclear Power Plant finds plant could safely withstand extreme seismic activity

<https://carbonfreeca.org/experts-weigh-in-on-seismic-safety-at-diablo-canyon-in-letter-to-newsom/>

(April 29, 2022) – Today, a group of experts in seismic issues associated with nuclear power plants [delivered a letter](#) to Gov. Gavin Newsom assuring him that an extensive review of the Diablo Canyon Nuclear Power Plant (DCNPP) found that the facility was “built to withstand with significant extra margins the largest earthquakes that the US Nuclear Regulatory Commission requires it to withstand.”

The letter concludes, “In summary, DCNPP does not pose a seismic danger, and thus the seismic issue should be taken off the table when considering increasing DCNPP’s useful life and operation.”

[Full text of the letter](#) can be found below:

April 29, 2022

*Honorable Gavin Newsom
Governor, State of California
1021 O Street, Suite 9000
Sacramento, CA 95814*

Dear Governor Newsom:

The Diablo Canyon Nuclear Power Plant (DCNPP) has been back in the news with your recent comments to the Los Angeles Times potentially opening the door for extending the plant’s operations. One of the issues raised is whether it is safe to continue to operate the plant given its location and the underlying geology.

We write as experts in seismic issues associated with nuclear power plants, who are also very familiar with the Diablo Canyon site. It is our opinion, and the opinion of the expert community, that, whatever the economic or environmental merits of continuing the plant’s operation may be, the seismic issue should be taken off the table: the plant does not pose a seismic danger as determined by a thorough analysis of the seismic risks.

Following the Fukushima accident in 2011, the Nuclear Regulatory Commission (NRC) reviewed the Diablo Canyon Nuclear Power Plant's ability to withstand external events (e.g., earthquakes, tsunamis, floods, tornadoes, wildfires, hurricanes) of exceptionally rare and severe magnitude ('beyond design basis events').

Using NRC's state-of-the-art seismic requirements, DCNPP was subject to a series of detailed new seismic evaluations specific to the Diablo canyon site. These assessments included:

- Development of a state-of-the-art new seismic hazard assessment for the DCNPP site;*
- Development of the plant seismic risk model to assess plant safety if exposed to an extreme seismic or flooding event;*
- Development of seismic failure probabilities correlated to the new seismic hazard for all DCNPP safety related and key non-safety related structures, systems and components;*
- Development of seismic risk estimates for the Diablo Canyon Nuclear Power Plant that are well within the limits established by the Nuclear Regulatory Commission as demonstrating a nuclear plant to have adequate safety;*
- Proximity of DCNPP to various faults and DCNPP site's high elevation with respect to sea level were taken into account in the seismic and flood protection analyses, respectively.*

After nine years of assessment the NRC's conclusion, [as embodied in an NRC letter dated 8th May 2020\[1\]](#), is that "existing seismic capacity or effective flood protection [at Diablo Canyon] will address the unbounded reevaluated hazards." That is, Diablo was designed and built to withstand with significant extra margins the largest earthquakes that the US NRC requires it to withstand. Further, "The staff confirmed that the conclusions in the various staff assessments continue to support a determination that no further regulatory actions are required for Diablo Canyon." That is, no seismic retrofits are necessary.

As an additional level of protection in response to the Fukushima event, DCNPP (along with all other nuclear plants in the US) has been retrofitted with special equipment and procedures known as FLEX. FLEX is meant to ensure reliable cooling of the reactor core and spent fuel pool under a hypothetical scenario in which all design-basis safety systems have been disabled by a severe external event.

The above conclusions and findings are not surprising, in fact expected, considering that the DCNPP evaluations are based on information from extensive and continual geosciences investigations since the early days of planning of the project, and several major plant evaluations, including the Long-Term Seismic Program, that have been conducted along the way after receiving the operating license. As a

result of these evaluations, a number of voluntary safety-enhancements above and beyond regulatory requirements have been made.

In summary, DCNPP does not pose a seismic danger, and thus the seismic issue should be taken off the table when considering increasing DCNPP's useful life and operation. We would be happy to discuss this matter further with state officials and others to better inform the public debate.

Sincerely,

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About Carbon Free California

Carbon Free California is funded by California-based entrepreneurs and brings together leaders from business, labor and the technology sector to focus on creating a pathway to a carbon-free future and securing the clean, reliable energy needed to power the world's fifth-largest economy. Carbon Free California believes the state must pursue all forms of emission-free energy to address the climate crisis and achieve our urgent emission reduction goals. Extending the operation of the Diablo Canyon Nuclear Power Plant will bolster the grid with reliable carbon-free energy and enable the state to transition to increasing shares of wind and solar power, while avoiding disruptive and costly rolling blackouts. Carbon Free California receives no funding from utility or nuclear industry interests.