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Continued Operation of Diablo Canyon is Essential

I am commenting as Policy Lead of Generation Atomic, a national grassroots nuclear power advocacy organization. We thank you for the opportunity to comment on the topic of continued operation of the Diablo Canyon Nuclear Plant.

Continued operation of the Diablo Canyon nuclear plant beyond 2025 would greatly increase grid reliability and significantly reduce California power sector CO2 emissions.

Even if things go very well, in terms of renewable generation and energy storage deployment, California is projected to have a power generation shortfall of 1800 MW in 2025. Continued operation of Diablo Canyon, by itself, would eliminate that shortfall. However, if Diablo Canyon closes in 2025, the likelihood of power shortages and blackouts would increase greatly.

Continued operation of Diablo Canyon would significantly reduce the use of natural gas generation in the future and would thus reduce CO2 emissions and play a critical role in meeting California's climate commitments. The reduction in gas generation would also significantly reduce air pollution, in disadvantaged (frontline) communities and elsewhere.

Continued operation would also significantly reduce power costs and would preserve high-paying jobs and tax base in the local area. There is strong political support for keeping Diablo Canyon open, throughout the state and especially in the local area.

The reasons for keeping Diablo Canyon open are discussed in more detail in the attached PDF file below.

Additional submitted attachment is included below.

Reasons to Keep Operating the Diablo Canyon Nuclear Plant

Continuing to operate the Diablo Canyon nuclear plant past the current 2025 closure date is the right decision for many reasons, most of which are discussed in this Stanford/MIT report that was published last year. A very recent (June 9) Brattle report reaches similar conclusions.

As discussed in the Stanford/MIT report, keeping Diablo Canyon open would reduce air pollution and CO_2 emissions, reduce power costs, bolster grid reliability, and alleviate power shortages. Diablo Canyon could serve other purposes as well, such as generating hydrogen or producing a large amount of desalinated water. Each of these benefits are discussed in the sections below.

Reduced CO_2 Emissions and Air Pollution

According to the Stanford/MIT report, continued operation of Diablo Canyon would reduce California power sector CO_2 emissions by more than 10%. This result is expected. It should be obvious that keeping a large source of carbon-free electricity operating would reduce emissions.

Some argue that it's "OK" to shut down Diablo Canyon because the state plans to replace all of its output with renewable sources. There are two flaws in that argument. First of all, the state is currently not on track to bring the necessary amount of renewable generation on line. Thus, emissions will actually increase as a result of Diablo Canyon's closure.

Secondly, even if Diablo Canyon could be entirely replaced by renewables, those renewable sources could be used to replace fossil generation instead. Using renewable sources to replace (also non-emitting) nuclear amounts to an indefensible choice of gas over nuclear. To make progress on climate we need to keep the existing carbon-free generation sources we have, and use growing renewable generation to replace fossil fuels!

California has actually been treading water for decades with respect to decarbonizing its power sector. California Energy Commission data show that gas plants still provide just over half of California's in-state power generation, and that the gas fraction has not decreased much over the last ~20 years. The reason for this is that the solar and wind generation that has been built has replaced (non-emitting) hydro and nuclear, as opposed to natural gas. Allowing Diablo Canyon to close in 2025 would continue that trend (particularly considering lower projected future hydro output). Keeping Diablo Canyon open would allow California to make progress with respect to grid decarbonization.

Enhanced Grid Reliability

As discussed in the Stanford/MIT report, keeping a large, reliable, non-interment generating source like Diablo Canyon in operation will clearly enhance grid reliability and alleviate power shortages, thus reducing the frequency of blackouts. For example, Diablo Canyon would provide steady power when it's needed most, e.g., right after sunset when power demand is high but solar is no longer producing.

California is facing serious problems with respect to grid reliability and insufficient power generating capacity. Analyses predict a generation shortfall of ~1,800 MW by 2025. The situation is so serious that, despite climate and air pollution concerns, California has approved five ***new*** gas plants, in an effort to keep the lights on.

Diablo Canyon's generating capacity of 2,256 MW is more than enough to cover the 1,800 MW shortfall. Thus, keeping Diablo Canyon open would resolve the state's power shortage, and would be a better, non-polluting alternative to gas plants. The projected generation shortfall, and grid reliability in general, is the main reason why Governor Newsom is reconsidering the closure of the plant.

Economic Benefits

Keeping the existing, already-built Diablo Canyon plant would be less expensive, overall, than closing it down and replacing it with renewable sources, especially after including the cost of the large-scale storage that would be required. Analyses show that inclusion of "firm" sources like nuclear in a carbon-free grid significantly reduces overall system cost, as it greatly reduces the amount of storage (batteries, etc.) that is needed.

The Stanford/MIT report concurs with this. It shows that continued operation of Diablo Canyon could reduce overall costs by up to $21 billion, over the long term. Keeping the plant open would also avoid a devastating economic impact on the local area, that would result from the loss of high-paying local jobs and much of the local tax base (which is provided by the plant).

Keeping existing nuclear plants running also protects ratepayers from price spikes associated with increased fossil fuel costs (like those occurring today). While power rates have increased significantly in most of the country, due to increased fossil fuel costs, power costs actually went down in the Chicago area, where they recently took measures to keep their nuclear plants open.

The economic case for keeping the plant open is further bolstered by the fact that a new federal program may cover some or all of the costs associated with extending its operation. The program is intended to prevent existing nuclear plants losing money. Thus, it essentially ensures that continued operation of Diablo Canyon will be an economic option. Governor Newsom has expressed interest in the program, and is urging PG&E to apply.

Other Uses for Diablo Canyon

As is also discussed in the Stanford/MIT report, the Diablo Canyon plant could be used to make hydrogen and/or desalinated water, in addition to producing electricity. Diablo Canyon could be operated in a flexible mode that effectively provides backup for intermittent sources, by providing electricity when it's needed most (e.g., periods of low wind and sun) and then using its power to generate hydrogen and/or desalinated water when there is ample electricity.

As shown in the Stanford/MIT report, Diablo Canyon could create hydrogen at ~half the cost of other sources such as solar or wind. It could also produce desalinated water at ~half the cost of

traditional, fossil fueled desalination plants, and at a much lower cost than other water supply options like the Delta Conveyance Project. Lower costs are possible because Diablo Canyon already exists and because the plant's waste heat can be utilized to increase the efficiency of the desalination and hydrogen generation processes.

The amount of desalinated water that Diablo Canyon could produce is quite large. The Stanford/MIT report concludes that if all of its power were directed towards desalination, it could generate over 4.5 million acre-feet per year. That would be enough to cover most of California's overall water shortfall.

Political Support

Support for nuclear power has increased significantly over the last year or so. Keeping existing nuclear plants operating, in particular, now has strong bipartisan support (including from Democrats and environmentalists). The Biden administration, Energy Secretary Granholm, and the two previous Democratic energy secretaries (Chu and Moniz) have expressed support for keeping Diablo Canyon open. A large number of climate scientists have expressed report as well. In an effort to prevent the loss of over a thousand local jobs, labor (IBEW 1245) is supporting continued operation of the plant. Finally, recent poll data shows strong support in California for keeping Diablo Canyon. Support exceeds opposition in all regions of the state. In the local area around the plant, public support is strongest of all (74%).