

DOCKETED

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Gene Nelson, Ph.D.'s Op-Ed supporting continuing operation of the Diablo Canyon Power Plant (DCPP) was published on 16 March 2016 in the San Luis Obispo Tribune. The benefits of DCPD are summarized. The California Energy Commission's "study" which concludes that DCPD is not necessary to meet California's stringent emissions targets that appears on page 204 of the 2015 IEPR is criticized as mere public-relations puffery. Many of the "study" assumptions are either irrational or improbable. However, the assumptions appear to be selected to support the "conclusion" that Diablo Canyon Power Plant is unnecessary to meet the emissions targets identified by California's executive and legislative branches.

Additional submitted attachment is included below.

MARCH 15, 2016 4:27 PM

Why we should keep Diablo Canyon nuclear power plant open

Diablo Canyon is a dependable source of clean energy

It also has the potential to provide water to South County by tapping into Diablo's desal plant

Join Diablo supporters at a support rally in front of the county government center Thursday



Diablo Canyon nuclear power plant near Avila Beach. Joe Johnston
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By Gene Nelson

<http://www.sanluisobispo.com/opinion/letters-to-the-editor/article66255217.html>

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California's largest powerhouse by far is about 10 miles from downtown San Luis Obispo on the coast. Diablo Canyon Power Plant is run by a team of professionals who have safely kept this power plant humming since 1985, without emitting any gases that worsen global warming and increase ocean acidification.

However, this beneficial plant needs your help, as a small number of very vocal people have attempted to instill fear, both locally and statewide, in an attempt to close the plant. The fearmongers' emotional appeals have already helped close three other California nuclear power plants. You can help the cause of green energy by attending the second annual Diablo Canyon support rally on St. Patrick's Day in downtown San Luis Obispo.



Gene Nelson. Courtesy photo

In an area the size of a few football fields, the plant annually generates about 18 terawatt hours of electricity, which meets the needs of about 3 million Californians. This power generation is over five times the 3.5 terawatt hours produced annually by Hoover Dam. One of the world's largest solar farms, Topaz Solar Farm in eastern San Luis Obispo County, produced 1.301 terawatt hours in 2015, per the U.S. Energy Information Administration. Topaz cost about \$2.4 billion and occupies 9.5 square miles. Thus, Diablo Canyon produced over 13 times the power produced by Topaz last year. Each of these power sources produces power without emitting carbon dioxide or other greenhouse gases that worsen global warming.

To underscore the massive amount of power generated by the plant, in 2014, Diablo Canyon generated 131 percent of the power generated by all wind sources in California,

or 161 percent of all California solar power. Since the generation cost for Diablo Canyon power is about \$.05/kilowatt hour, the plant dilutes the exorbitant cost of solar and wind contributions to California ratepayers. The plant generates its power 24/7, not subject to solar's limitation of having adequate cloud-free sunlight, which reduces solar's "capacity factor" to about 23 percent at Topaz. Wind's capacity factor in California is about 30 percent. Think of the many applications for which electric power must be on 100 percent of the time, such as for traffic signals, hospitals or for your employer.

The fearmongers' emotional appeals have already helped close three other California nuclear power plants.

Power demand in California peaks in the late afternoon. At night, Diablo Canyon utilizes some of its carbon-free power to "charge up" the Helms Pumped Storage Plant east of Fresno. (See the Oct. 12 [David Middlecamp story](#), "Diablo Canyon's odd cousin in the mountains.") The next day, the Helms Pumped Storage Plant's emissions-free power is released.

As I learned firsthand during [California Energy Commission](#) hearings in Sacramento, the commission supports burning ever-increasing amounts of fossil fuel, including natural gas, which increases global warming. Note the significant increase in the importation of out-of-state dirty coal power and the combustion of more natural gas within California after the [San Onofre Nuclear Generating Station shutdown](#) in January 2012. San Onofre was producing about 18 terawatt hours per year of carbon-free power prior to closure. While a small amount of this power is now generated by solar and wind with low-capacity factors, most of the difference is met by burning fossil fuels.

The news media recently spotlighted one of the problems associated with the combustion of natural gas, namely the significant leakage of unburned natural gas. In the case of the leak at the [Aliso Canyon Storage Facility](#), 107,000 tons of climate-changing methane and ethane escaped.

The Energy Commission recently commissioned a "study" regarding [Diablo Canyon's clean power not being](#) needed to meet California's clean air goals via a number of indefensible assumptions to reach that illogical conclusion. This suggests the commission's "study" was more public-relations puffery than a factual analysis.

SLO County supervisors should work with PG&E to significantly expand the plant's reverse osmosis desalination plant.

In 2013, per industry statistics, Diablo Canyon avoided 13.43 million metric tons of carbon dioxide emissions, equal to the carbon dioxide emissions from about 72 million modern design automobiles. I believe politics are preventing Diablo Canyon's owners from deriving any economic benefit from this significant carbon avoidance. To support the goal of decreased California emissions, as advocated by Gov. Jerry Brown's 2015 [executive order B-30-15](#), carbon avoidance credits should be provided independent of the generation technology.

There is another significant benefit located at the plant. SLO County supervisors should work with PG&E to significantly expand the plant's reverse osmosis desalination plant and install a large-diameter water line from the expanded desalination plant to the South County (See [David Sneed's Feb. 21 article](#), "South County water projects to be

considered.”) This would provide an extremely reliable and cost-effective source of water, not subject to the vagaries of climate. Permitting wouldn't be a significant burden, as the reject brine is diluted to ordinary salt water levels as it is discharged to the substantial ocean water cooling stream before it leaves the plant. Obviously, the power to run this expanded desalination plant is abundant, cost-effective and emission-free.

PG&E should be able to obtain lease renewals to 2025 (or 2045) from the [State Lands Commission](#) for the intake and outfall structures. [State Water Resources Control Board](#)-developed alternative compliance should be utilized instead of the proposed cooling towers. Then, Diablo Canyon will continue to generate profits for PG&E shareholders, who have enjoyed stock price increases since early 2014.

Otherwise, as PG&E's [2015 10-K filing notes](#), there will be multibillion dollar costs to be absorbed by ratepayers and shareholders.

Please connect with SLO residents who want to keep this beneficial plant running by joining the group of interested citizens, including environmentalists, union members, plant retirees and plant workers, at the second annual Diablo Canyon support rally. Also, please inform California politicians about Diablo Canyon's benefits.

Dr. Gene Nelson earned his Ph.D. in radiation biophysics in 1984 from the State University of New York at Buffalo. He has served as a professor of science and engineering courses at several colleges, including Cal Poly and Cuesta College. He is the government liaison for [Californians for Green Nuclear Power \(www.cgnp.org\)](#).

RALLY ON THURSDAY

Thursday's Diablo Canyon support rally will be from 11 a.m. to 1 p.m. in front of the SLO County Government Center, 1055 Monterey St. Wear green in support of green nuclear power and to celebrate St. Patrick's Day.

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One of the things that I did not mention in my op-ed is how Diablo Canyon advances the cause of world peace. The plant was one of the participants in the "Megatons to Megawatts" program <http://www.centrusenergy.com/russian-contracts/megatons-megawatts> where the Former Soviet Republics sold the equivalent of 20,000 nuclear weapons to the U.S. for use in our nuclear power fleet. There are a number of technical reasons (which the Soviets understand) that render nuclear weapons material that has been placed in a nuclear power reactor USELESS for weapons. The key isotope is Plutonium-240, a nuclear weapons "poison." The North Koreans performed the experiment in 2006, using some fissionable material from their nuclear power reactors. The result: A "fizzle yield."