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Please do not extend Diablo Canyon's license to create more nuclear waste; we have enough in the state already

Shut Diablo Canyon Nuclear Power Plant down now. Don't even wait. Don't relicense.
August 16, 2022

by Ace Hoffman

Should the state of California and Pacific Gas and Electric (PG&E) seek to relicense the aging Diablo Canyon Nuclear Power Plant's two reactors, rather than shut them down in 2024 and 2025, as currently planned?

Absolutely not! Consider the nuclear dilemmas France is in right now:

France's electric supply is in deep trouble as a result of relying on the most unreliable source of energy ever invented: Nuclear Power. France's government-regulated national utility company, EDF, has just declared bankruptcy and been "taken over" by the French government. And what is the French government going to do with a bunch of broken reactors and a bunch more that cannot get enough water to operate because of a continent-wide drought?

The French would be better off turning to BOTH of the following: Better efficiency and more renewables.

Any other choice is bound to result in more expense and more problems later. Renewables are fully ready to take over, at lower cost and with much higher reliability.

Yes, higher reliability. Renewables, combined with battery storage (in electric vehicles (EVs), for example) and other forms of electrical energy storage (such as pumped hydro) is the *most* reliable energy system possible today, because it is distributed and very predictable.

The nuclear industry claims to have a >90% "reliability" factor. But they don't want you to consider the impact of sudden unexpected long-term shutdowns. And they'll even take a reactor "off the books" during extended shutdowns to maintain the appearance of higher capacity factors and reliability factors. And many natural disasters (fire, flood, hurricane, earthquake, etc.) require taking nuclear power plants offline just when electrical power is needed the most.

Currently, approximately half of France's nuclear reactors are shut down. At least eight of those are shut for stress corrosion cracking of the reactor pressure vessels, which can lead to a catastrophic accident far worse than Chernobyl, Fukushima AND Three

Mile Island combined. Those RPVs were built by Creusot Forge, which was discovered to be corrupt, didn't work the metals properly, and failed to do proper testing before shipping the forgings to the reactor sites. Many other French reactors were built by the same company and if they're not suffering from stress corrosion cracking yet...they will.

Stress corrosion cracking is the same sort of cracking that has been found on one of the Diablo Canyon's reactor pressure vessels. And it's the same sort of cracking which plagues the entire nuclear industry. And one key fact about stress corrosion cracking is that it is difficult to find, even more difficult to repair, and almost impossible to predict how quickly it will spread from a small problem to a catastrophic one.
Stress corrosion cracking also affects the thin-walled spent fuel canisters Diablo Canyon uses -- the same kind used throughout the nuclear industry in America. The fewer of those there are in existence, the safer we all are.

DCNPP supplies only a single-digit fraction of California's electricity needs, and a far smaller portion of our total energy needs. And on top of that, for years the large utilities have been "fudging the books" to make the percentage supplied by nuclear power seem larger than it actually is. For example, anyone who manages to disconnect from the grid completely...is completely removed from the accounting. Even those who power most of their electricity themselves often have that portion removed. So things are not as they seem, and California is a lot further along to energy independence than the large utilities want to admit.

Perhaps more importantly, the technologies needed to transition already exist. EVs exist in abundance now, and can power a typical house for days if needed. Highly efficient solar panels and wind turbines exist. Wave and tidal systems also exist and can be utilized as well. Geothermal systems have barely been tapped in the state. Electricity transmission can and should be a two-way street: Solar rooftops take up zero ground space that isn't already being utilized, and sending excess power to the grid should result in healthy payments. (PG&E should be required to sell ALL their transmission lines to a third party, and just operate large non-nuclear and non-fossil fuel power generating systems.)

Replacing Diablo Canyon's sporadic output with clean and reliable renewable systems is only part of the battle, of course. DCNPP's power output can be completely eliminated with greater efficiency and NO additional capacity.

It takes a bit more effort on the part of the consumer, but not an undue amount. However, some things might require subsidized assistance to make it happen: For example, homes made of adobe, which is mostly quartz (silicon dioxide) are far better insulated than homes made of gypsum (calcium sulfate). Homes built with adobe walls last longer too -- hundreds of years. They keep you cooler in the summer and warmer in the winter. So what's the problem? Quartz is much harder, making it harder to work with, and harder to dig out of the ground. We have few, if any, adobe manufacturing plants in California. But tax breaks could change all that. Building an efficient home that lasts should be cost-effective for the original builder, so that generations of people who

live there can save on electricity bills.

Electric vehicles can communicate with each other to reduce traffic congestion by taking alternate routes and by safely squeezing more cars at higher speeds into the same lanes. But that takes a lot of regulatory help, including pushing out the older, inefficient ICE cars that spew toxic vapors and are not significantly computerized with modern interconnected systems. Human-operated vehicles would be kept out of the high-speed, dense lanes, and eventually from all the main highways and byways. Sorry, but technology MUST move forward if civilization is to survive!

People who want DCNPP to stay open complain loudly that some of these technologies suggested here (and many others) don't exist in fully deployable form right now. This is largely completely false, but for those items for which it might be somewhat correct, I'd like to know why those same pro-nukers ignore the fact that the nuclear power industry has STILL not even begun to solve the nuclear waste problem. Letting the waste sit in deadly piles at widely scattered locations in California is a recipe for disaster: That waste is vulnerable to airplane strikes (accidental OR on purpose), other acts of terrorism, war, earthquakes, and many other hazards (including, for the coastal nuclear waste sites, tsunamis that could be hundreds of feet tall).

Nuclear waste takes millions of years to decay to less toxic, or non-toxic, isotopes, but the rate of decay slows greatly over time. So the sooner California stops making new nuclear waste, the better by far.
Do NOT relicense the Diablo Canyon Nuclear Power Plant. Doing so is a recipe for disaster. It sets the stage for a prolonged extreme risk. Although the current "offer" (or rather, "devil's bargain") is that the plant will only remain open for an extra five to seven years so that renewables can "ramp up" in the meantime, that's NOT what the license would be for: That would be 20 years, with another extension possible after that, according to the biased, industry-funded and industry-lapdog federal Nuclear Regulatory Commission (NRC), which has already licensed some reactors for an incredible 80 years of creating nuclear waste (and electricity), with talk of going to 100 year extensions.

Embrittlement, rust, stress corrosion cracking -- call it what you will, an aging reactor is a dangerous reactor (so is a new one).

Lastly, it must not be ignored that PG&E has been deferring numerous maintenance issues they would have resolved by now if they had expected to keep the reactors operating beyond their current close dates. These repairs will cost downtime and ratepayer money and add to the reactor's accident risk potential unless they are properly handled in a timely manner. The costs of any repairs will be paid with money that would be far better spent building up California's renewables portfolio. And after they are done (at great expense) one can completely expect PG&E to apply to keep the reactors operating for the rest of the license period -- and beyond. PG&E has proven their dishonest intentions time and again. Don't be fooled this time.

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The author is an independent researcher. Hoffman has studied nuclear power for more than 50 years and has interviewed, and/or worked with, and/or been educated by, dozens of leading experts in and around the nuclear industry, including John Gofman, Ernest Sternglass, Karl Z. Morgan, Marion Fulk, Helen Caldicott, Arjun Makhijani, Arnie Gundersen, Judith Johnsrud, Rosalie Bertell, Daniel Hirsch, Stanley Thompson, Ed Siegel, Kay Drey, Pamela Blockey-O'Brien, Carrie Dickerson and many others, as well as attending lectures and presentations by Timothy Mouseau, Kate Brown, Mary Olson, Ian Fairlie, and at least a dozen atomic bomb test veterans...the list goes on in an endless quest for information and explanations. Hoffman has a collection of over 500 books on nuclear technology, weapons, regulations...and failures, from 1945 to the present. He has attended over 100 NRC and State of California hearings on nuclear topics, as well as related hearings in New Mexico and Connecticut. All views expressed here are his own.