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NPDES Unit
Central Coast Water Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401

Sent via email to: rb3-npdes@waterboards.ca.gov

Public comment from Committee to Bridge the Gap re: Central Coast Regional Water Quality Control Board's Tentative Clean Water Act Section 401 Water Quality Certification for Federal License ("Section 401 Certification") and Tentative Order R3-2026-0001 National Pollutant Discharge Elimination System Permit CA0003751 ("NPDES Permit") at PG&E's Diablo Canyon Nuclear Power Plant ("Diablo Canyon")

The Committee to Bridge the Gap writes to urge the Central Coast Regional Water Quality Control Board (hereafter "Water Board") to reject the NPDES Permit and Section 401 Certification now before you. Approving either action would allow PG&E to continue, and potentially intensify and expand, its pollution of Central Coast waters via Diablo Canyon water discharge. Approving either action would also advance the extension of an aging nuclear power plant with severe embrittlement and profound seismic vulnerabilities.

PG&E's long record of violating water quality standards, withholding critical environmental data, and failing to ensure compliant discharges makes a Section 401 certification untenable. Similarly, the NPDES Permit contains no meaningful numerical limits on radioactive releases and relies on outdated scientific assumptions. Issuing a NPDES Permit under these circumstances would enable substantial degradation of the marine environment.

Together, these actions would expose local California's Central Coast communities, such as San Luis Obispo, Shell Beach, Pismo Beach, and Oceano, and others, to unacceptable environmental and public-health risks. Given the factors discussed in this letter, approving these actions would pose serious and lasting risks. We therefore urge the Water Board to deny both the certification and the permit.

Section 401 Certification Would Have Water Board Ignore PG&E's History of Violating Water Quality Standards

The Water Board's Tentative Section 401 Certification states: "Clean Water Act section 401 requires applicants for federal licenses who will discharge to navigable waters of the United States to obtain certification from the State that the discharges will comply with water quality

standards."[1] Thus, PG&E is before you with a request to certify that PG&E's discharges will comply with water quality standards.

The Water Board should not agree to provide such a certification for the simple reason that the Water Board cannot ensure that PG&E's discharges will in fact comply with water quality standards. PG&E's history of evasion and noncompliance in its operation of Diablo Canyon gives ample reason to question PG&E's credibility or transparency in whether its Diablo Canyon discharges will comply with water quality standards. The historical record, in fact, shows that PG&E cannot be trusted.

For decades, Diablo Canyon's thermal discharges have caused significant and well-documented harm to the marine ecosystem surrounding Diablo Cove. The Water Board's own staff concluded in 2000 that the plant's hot-water effluent produced thermal plumes extending far beyond the outfall and resulted in "significant and consistent biological effects," including the degradation of intertidal and near-shore habitat directly affected by the discharge.[2] The damage was serious enough that Water Board staff prepared a proposed Cease-and-Desist Order, citing losses of marine life and impairment of designated beneficial uses—an extraordinary step that reflected the severity of the ecological harm observed at the time.[3]

Independent biological analyses reinforce the magnitude of this degradation. During Diablo Canyon's early years of operation, local populations of red and black abalone collapsed by nearly 90%, with researchers and environmental reviewers attributing much of this decline to the plant's thermal plume, entrainment, and impingement effects—stressors directly linked to Diablo Canyon's cooling system operations.[4] These impacts are not confined to the past. Recent federal environmental evaluations continue to find that the plant's thermal discharges alter water temperature, flow, and habitat conditions in the shoreline environment, rendering habitat near the discharge structure unsuitable for sensitive species such as black abalone.[5]

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[1] California Regional Water Quality Control Board, Central Coast Region, *Tentative Order 34024WQ31: Clean Water Act Section 401 Water Quality Certification for Federal License*, p. 2

[2] California Regional Water Quality Control Board, Central Coast Region, Staff Report on Diablo Canyon Power Plant (July 13, 2000), documenting thermal plume impacts and "significant and consistent biological effects." Available at: https://www.waterboards.ca.gov/rwqcb3/water_issues/programs/diablo_canyon/docs/2000_07_13_diablo_staff_report.pdf

[3] California Regional Water Quality Control Board, Staff Report re: Proposed Cease and Desist Order for Diablo Canyon Power Plant (October 27, 2000), noting serious habitat impairment and consideration of enforcement action. Available at: https://www.waterboards.ca.gov/rwqcb3/water_issues/programs/diablo_canyon/docs/2000_10_27_diablo_staff_report.pdf

[4] Nuclear Information and Resource Service (NIRS), Comments on Diablo Canyon NPDES Permit (June 9, 2003), summarizing nearly 90% decline in red and black abalone populations associated with thermal discharge and cooling-system impacts. Available at: https://www.nirs.org/wp-content/uploads/reactorwatch/natureandnukes/nirscmts06092003diablonpdes.pdf

[5] National Marine Fisheries Service, Biological Opinion for Diablo Canyon Power Plant Operations (2023), documenting continued thermal and hydrodynamic impacts near the discharge structure and unsuitable

The advocacy group Beyond Nuclear, which has long been tracking PG&E's saga at Diablo Canyon, explains the situation this way:

> "In the spring of 2000, Diablo Canyon's operators were discovered to have withheld information from environmental regulators for two decades revealing the true effect of the reactor's hot water discharges into the coastal waters off Diablo Cove and miles beyond. The concealed data included infrared images indicating more extensive thermal plume impact zones than previously admitted and time-series photographs showing the progressive deterioration of biologically important marine habitat in coastal waters around the reactor. The damage was catastrophic to the indigenous marine life community, including the near obliteration of the already threatened black and red abalone populations."[6]

The record, which spans decades of regulatory review and scientific assessment, demonstrates a continuous pattern of ecological degradation associated with Diablo Canyon's operation. Any proposal to continue or expand these discharges must contend with this long, clear record of harm to the marine environment.

PG&E's long history at Diablo Canyon includes multiple documented instances of withholding or obscuring critical environmental information, raising serious doubts about its transparency and its willingness to comply with monitoring and reporting requirements. As early as 2000, Water Board staff found that PG&E had failed to disclose key thermal plume and habitat-impact data, forcing regulators to discover on their own the extent of ecological degradation occurring offshore from Diablo Canyon.[7]

State energy officials also criticized PG&E's seismic hazard submissions for lacking full transparency and failing to provide the data needed for independent verification—a troubling pattern given the plant's location amid active fault lines. Multiple state agencies, including the California Energy Commission (CEC) and the California Geological Survey (CGS), explicitly state that PG&E withheld crucial details needed for independent scientific review.[8] A second Independent Peer Review Panel also found that PG&E had not yet provided the complete,

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habitat for black abalone. Available at: https://repository.library.noaa.gov/view/noaa/70085/noaa_70085_DS1.pdf

[6] *Licensed to Kill*, https://beyondnuclear.org/licensed-to-kill, PDF p. 11; see also PDF pp. 50-51

[7] California Regional Water Quality Control Board, Central Coast Region, Staff Report on Diablo Canyon Power Plant (July 13, 2000), documenting failure to disclose full thermal plume and habitat-impact data. https://www.waterboards.ca.gov/rwqcb3/water_issues/programs/diablo_canyon/docs/2000_07_13_diablo_staff_report.pdf

[8] CEC Independent Peer Review Panel (IPRP) reports repeatedly criticized PG&E for incomplete seismic disclosure. IPRP Report No. 1 (2011): https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/electric-costs/diablo-canyon-independent-peer-review-panel-reports/iprp-report-no1.pdf

reliable seismic data needed to fully assess Diablo Canyon's earthquake risk, leaving key fault parameters and hazard analyses unresolved and regulators without the information required to make a sound safety determination.[9]

The Tentative Section 401 Certification states that PG&E's Diablo Canyon discharges will comply with the Clean Water Act "as long as all the conditions listed in this Order are met."[10] PG&E's failure to maintain compliance with water quality standards, however, continues to this day. As is explained in more detail below, PG&E's Diablo Canyon effluent starkly violates the NPDES Permit's prohibition against degradation of the marine environment. The Water Board should not grant PG&E a certification that is conditioned on PG&E's compliance with water quality standards that PG&E continues to violate.

The Water Board's Tentative Section 401 Certification states: "The Permittee previously obtained a Certificate of Conformance with water quality standards from the Central Coast Water Board for the Facility in 1971."[11] That certification, however, occurred nearly 55 years ago, long before PG&E's track record of obfuscation and demonstrated environmental harm occured. Given the history that has unfolded in the half a century since the initial certification, it would be prudent for the Water Board to thoroughly and cautiously reconsider whether such broad certification is appropriate. The local community and environment should not be forced to withstand another half century of environmental impacts and data obfuscation by PG&E.

NPDES Permit Allows Large Amounts of Radioactivity to Degrade Marine Environment

PG&E's NPDES permit contains, as best we have been able to find, no numerical limit to the amount of radioactivity allowed to be discharged to the ocean. Instead, the permit contains Discharge Prohibition 3.4: "The discharge of radioactive waste that causes degradation to marine life is prohibited."

One of the radionuclides released to the marine environment in PG&E's Diablo Canyon effluent is tritium, a radioactive isotope of hydrogen. In 2024 alone, PG&E discharged 1,582 curies of tritium in its Diablo Canyon effluent.[12] To put this in perspective, that is enough tritium to contaminate 79,100,000,000 (79 billion) liters of water at EPA's drinking water limit.[13] This is a

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[9] Independent Peer Review Panel (IPRP) Reports to the California Energy Commission, documenting insufficient seismic data transparency from PG&E, Report No. 5 (2012): https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/electric-costs/diablo-canyon-independent-peer-review-panel-reports/iprp-report-no5.pdf

[10] Central Coast Water Board, *Tentative Section 401 Certification*, p. 8

[11] *Ibid.*, p. 2

[12] Pacific Gas & Electric Company, *2024 Annual Radioactive Effluent Release Report*, p. 22, Table 4A, https://www.nrc.gov/docs/ML2510/ML25107A210.pdf

[13] EPA's drinking water limit for tritium is 20,000 picocuries per liter of water (Environmental Protection Agency, National Primary Drinking Water Regulations; Radionuclides; Final Rule,

staggering volume. Based on an average residential water use of roughly 300 liters per person per day,[14] PG&E's annual tritium discharge represents enough water to supply all 39 million residents of California with two full days of household water.

PG&E is actively engaged in a breathtaking scale of radiological contamination. For example, PG&E's tritium discharges at Diablo Canyon are arguably larger than the tritium discharges each year from the Fukushima nuclear meltdown site.[15] Direct comparisons are somewhat challenging given that PG&E's discharge figure is given in curies (Ci), while Fukushima's public data often use becquerels (Bq). However, if the 1,582 Ci (≈58.5 trillion Bq) number for PG&E is correct, Diablo Canyon's discharge could be roughly 2–3 times greater than Fukushima's maximum planned annual tritium release — a potentially massive release of radioactivity into marine waters.

The Water Board must bear in mind that tritium is a very dangerous radiological poison. The release of tritium-containing water at the Fukushima meltdown site, for example, triggered intense public and international backlash.[16] In 2023, large protests erupted in South Korea over fears of radioactive contamination, while fishing associations in Fukushima and governments across the region condemned the discharge as a threat to marine ecosystems, public health, and trust in nuclear-waste management.[17] At Diablo Canyon, the tritium discharge problem appears to be far worse.

Tritium is in fact a dangerous radioactive poison. A radioactive form of hydrogen, when people drink tritiated water, inhale tritium, or absorb it through their skin, tritium distributes throughout the body's tissues and, like all ionizing radiation, increases the risk of cancer and other health effects.[18] Authoritative scientific reviews conclude that internal exposure to tritium can damage DNA and other cellular structures, and that there is no completely risk-free dose of ionizing

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https://www.federalregister.gov/d/00-30421/p-581, Table A). A picocurie is one trillionth of a curie; thus, EPA's limit converted to curies is 0.00000002 curies of tritium allowed per liter of drinking water.

[14] SGS, *Estimated Use of Water in the United States*, reporting ~82 gallons/day residential per capita use: https://pubs.usgs.gov/circ/1405/pdf/circ1405.pdf

[15] TEPCO's figure for the maximum annual amount of tritium it plans to release from Fukushima each year for the next 20-30 decades is 22 trillion becquerels, equivalent to 595 curies. https://www.tepco.co.jp/en/decommission/progress/treated-water-lan/index-e.html

[16] PBS NewsHour, reporting on protests in Seoul opposing Japan's release of treated radioactive water (2023): https://www.pbs.org/newshour/world/japans-neighbors-share-fear-and-frustration-over-radioactive-water-release

[17] Marine Policy (ScienceDirect), analysis of regional and fishing-industry opposition to Fukushima wastewater discharge (2024): https://www.sciencedirect.com/science/article/pii/S0308597X24001180

[18] U.S. Environmental Protection Agency (EPA), "Radionuclide Basics: Tritium." https://www.epa.gov/radiation/radionuclide-basics-tritium

radiation.[19] In aquatic and marine environments, tritium released to water is readily taken up by organisms, can be incorporated into organic molecules, and has been shown to cause genotoxic and reproductive effects in species such as marine mussels and fish at low to moderate dose rates.[20]

Any dose of radiation produces some risk of cancer and other health harms; even without considering the other radionuclides or hazardous chemicals in PG&E's effluent, PG&E's releases of tritium alone are enough to cause significant degradation to the marine environment.

We note that PG&E's dose calculations, purporting to show compliance with radiation dose limits, are based on outdated science: the bioaccumulation factors and dose conversion factors used in PG&E's dose calculations are largely sourced from the Nuclear Regulatory Commission's Regulatory Guide 1.109 – from 1977.[21] In the nearly half century since, radiation science has advanced greatly, particularly the scientific understanding of the risks of relatively low doses of radiation. A cursory search turns up more up-to-date dose conversion factors, such as those produced by the International Commission on Radiological Protection in 1990 and 2008.

Given the extensive record of environmental harm, noncompliance, and withheld information, the Water Board cannot reasonably certify that PG&E's discharges will meet water quality standards. The evidence shows persistent degradation of marine habitat, ongoing violations of key prohibitions, and radiological releases large enough to pose significant risks to coastal communities and ecosystems. PG&E has not demonstrated the transparency, technical reliability, or environmental stewardship required for a certification of compliance. The Water Board's responsibility is to protect the public interest, not to legitimize continued pollution under the guise of regulatory approval. For these reasons, the Section 401 Certification and NPDES Permit should be denied.

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[19] U.S. Nuclear Regulatory Commission (NRC), "Backgrounder on Tritium, Radiation Protection Limits, and Drinking Water Standards."
https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/tritium-radiation.html

[20] United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), 2016 Report, Annex C: *Biological effects of selected internal emitters – Tritium.*
Official UN publication page: https://www.unscear.org/publications/2016.html, also see Adam-Guillermin, C. et al., "Genotoxic and reprotoxic effects of tritium and external gamma irradiation in aquatic organisms," *Mutation Research* (2012).
https://doi.org/10.1016/j.mrgentox.2012.05.007, also see Jha, A. N. et al., "Impact of low doses of tritium on the marine mussel *Mytilus edulis*: genotoxic effects and tissue-specific bioconcentration," *Mutation Research* (2005).
https://doi.org/10.1016/j.mrgentox.2005.03.001

[21] PG&E, *2024 Radioactive Effluent Report*, PDF p. 204