



ALLIANCE FOR NUCLEAR RESPONSIBILITY

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August 29, 2023

Transmitted by email to: diablo@co.slo.ca.us

Susan Strachan
San Luis Obispo County Department of Planning & Building
976 Osos St., Rm 300
San Luis Obispo, CA 93408

Dear Ms. Strachan:

The Alliance for Nuclear Responsibility (“A4NR”), a California non-profit corporation that has participated extensively in state and federal regulatory and legislative proceedings over the past two decades, submits the following comments on the County’s Draft Environmental Impact Report (“DEIR”) for the Diablo Canyon Power Plant.

1. THE DEIR SHOULD TREAT RADIATION RISKS THE SAME AS CSLC DID AT SAN ONOFRE.

The San Onofre Units 2&3 decommissioning EIR adopted by the California State Lands Commission (“CSLC”) found that “(t)he Proposed Project’s established programs, processes, and procedures are devised in compliance with NRC requirements and are designed to lower the probability that exposure to radioactive materials would occur. Nonetheless, since the CSLC believes there is an inherent risk of radiological exposure at any facility where hazardous radiological materials are present that can never be fully eliminated, impacts associated with potential radiological release are identified in this EIR as significant and unavoidable.”¹

This logic applies equally to Diablo Canyon and reflects the same California policy of vigilance against an unavoidable radiological hazard that motivated Executive Order D-62-02, barring from California landfills all decommissioning wastes irrespective of measurable

¹ SONGS Units 2&3 Decommissioning Project FEIR, p. 4.1-3. CSLC embraced this approach despite strong opposition from the plant operator, Southern California Edison Company, which cited NUREG-0586 and argued, “Based on this extensive analysis by the NRC, as well as SCE’s compliance with its NRC license and applicable regulations, the impacts attributable to radiological hazards will be less than significant. Accordingly, the Participants request that the FEIR adopt the NRC’s conclusion that impacts attributable to radiological hazards would be less than significant.” See SCE, SONGS Units 2 & 3 Decommissioning Project DEIR Comments, August 29, 2018, pp. 8 – 9, footnotes omitted, citing DEIR p. 4.1-35

radioactive content, which has been in place more than 20 years across four gubernatorial administrations.

The DEIR appears unaware of the linear, no-threshold model (“LNT”), the cornerstone of both NRC and EPA radiological protective policies,² which postulates that all exposure to ionizing radiation is harmful, regardless of how low the dose is, and that the effect is cumulative over a lifetime. The DEIR is inexplicably out of step with the prevailing views of mainstream science regarding the significance of the radiation hazard.

2. THE DEIR IS WRONG ABOUT POST-LICENSE LEGAL PRE-EMPTION.

In the California Public Utilities Commission’s latest decommissioning proceeding, A.21-12-007, PG&E corrected its written testimony and acknowledged under oath that the federal pre-emption of radiological cleanup standards for NRC-licensed sites only applies “until termination of the Part 50 operating license.”³ With the testimony so corrected, PG&E’s witness acknowledged agreement, under oath, with the California Coastal Commission jurisdictional finding for Coastal Development Permit E-09-010 regarding the Humboldt Bay nuclear decommissioning: “the state has jurisdiction over post license site conditions, including those related to radiological concerns.”⁴

3. THE DEIR SHOULD GIVE CONSIDERATION TO THE 2022 SANTA SUSANA SETTLEMENT.

As a point of comparison for post-license site remediation at Diablo Canyon, the DEIR should assess the 2022 announced settlement between the California Department of Toxic Substances Control (“DTSC”) and the Boeing Company for cleanup of the Santa Susana Field Laboratory site. This agreement, an indicator of current state policy – and one prominent private sector entity’s assessment of feasibility, practicality, and cost considerations – requires remediation to background threshold values for the majority of potential Radionuclides of Concern (“ROCs”) identified in the 2018 Diablo Canyon Historical Site Assessment, including Co-60, Cs-134, Fe-55, H-3, Ni-59, Sr-90, and Te-99.⁵ Of the primary ROCs identified in the 2018 Historical Site Assessment, the settlement with Boeing Company would allow remediation to a level above background only for C-14, Cs-137, and Ni-63. In a post-license environment where federal pre-emption no longer applies, the DTSC-Boeing agreement would appear to provide better insight into contemporary feasibility, practicality and costs than the DEIR’s reliance on generic pronouncements from 1997 NRC documents.

4. THE DEIR TREATS THE ROLE OF ALARA IN SITE REMEDIATION INCONSISTENTLY.

The DEIR’s chapter on Hazardous and Radiological Materials accurately states the NRC’s threshold for a site to be considered acceptable for unrestricted use is if the residual

² See <https://www.federalregister.gov/documents/2021/08/17/2021-17475/linear-no-threshold-model-and-standards-for-protection-against-radiation>.

³ A.21-12-007 Transcript (PG&E – Trevor Rebel), p. 10, ln. 27 – p. 11, ln. 3.

⁴ A.21-12-007 Transcript (PG&E – Philippe Soenen), p. 26, ln. 27, referring to CDP E-09-010, p. 19.

⁵ See <https://dtsc.ca.gov/boeing-cleanup-settlement-agreement/>, Exhibit 5, Attachment 5.

radioactivity that is distinguishable from background radiation results does not exceed 25 millirem per year, including that from groundwater sources of drinking water, **and** that the residual radioactivity has been reduced to levels that are as low as reasonably achievable (“ALARA”). The chapter on Alternatives twice misstates this requirement: as “will meet the Federal remediation threshold of 25 mrem per year **or** ALARA” at p. 5-16; and as “until the licensee(s) can prove the 25 mrem per year **or** ALARA requirement is met” at p. 5-19 (emphases added).

5. THE DEIR CITES AN OUTDATED COST ASSUMPTION FOR USE IN ALARA CALCULATIONS.

Citing a 1997 document, the DEIR states (at p. 5-17) that the NRC suggests \$2,000/person-rem be used for considering the costs and/or benefits of regulatory alternatives that may differ from the Federal 25 mrem threshold. This statement ignores the 2022 Revision 1 to NUREG-1530, summarized on the NRC web site as: “Revision 1 to NUREG-1530 incorporates updates to the dollar per person-rem conversion factor and establishes a method for keeping this factor up-to-date. The dollar per person-rem conversion factor has been updated from \$2,000 (in constant dollars) to \$5,200 in 2014 dollars based on the application of an updated best estimate VSL [i.e., value of a statistical life] of \$9.0 million and the U.S. Environmental Protection Agency’s cancer mortality risk coefficient of 5.8×10^{-4} per person-rem. Revision 1 to NUREG-1530 uses a conversion factor with two significant figures instead of rounding to the nearest \$1,000 value and provides guidance to the staff on when to use a higher dollar per person-rem conversion factor.”⁶

6. THE DEIR UNDERSTATES THE NUMBER OF STATES REQUIRING A 10 MREM STANDARD.

The DEIR accurately identifies Maine, Massachusetts, and New York as opting for a more stringent standard, but omits Vermont. Additionally, a 2016 briefing by Southern California Edison’s Chief Nuclear Officer to the SONG Executive Committee on two decommissioned plants that had been required to use the 10 mrem standard included Connecticut Yankee (See Attachment A to this letter).

7. THE DEIR OBSCURES THE MAGNITUDE OF HUMBOLDT BAY/RANCHO SECO ACHIEVEMENTS.

Rather than identify the extent to which site remediation at Humboldt Bay and Rancho Seco improved upon the NRC’s 25 mrem standard, which documents the laxity of the standard, the DEIR (at p. 5-18) simply characterizes both plants as “reducing dosage levels to well below 25 mrem per year.” According to the NRC’s November 18, 2021 Safety Evaluation Report for termination of Humboldt Bay’s operating license, PG&E’s cleanup achieved an average dose of 6 mrem, including a maximum level for the heavily contaminated caisson survey unit of less than 10 mrem, and a dose through the groundwater pathway bounded at 1 mrem.⁷ The NRC letter terminating the Rancho Seco Part 50 license identified an average survey unit dose of 1.16

⁶ See <https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1530/r1/index.html>

⁷ See <https://www.nrc.gov/docs/ML2129/ML21295A251.pdf>.

mrem for the 2009 release of a portion of the site, and an average dose of less than 0.34 mrem for all survey units for the 2017 release of the remainder of the site.⁸

To fully inform decisionmakers, the DEIR should forthrightly discuss these results – a 76% improvement on the 25 mrem standard at Humboldt Bay, and 95-99.7% at Rancho Seco – and their implications. It might be argued that both results validate the reliance on ALARA – but that would likely contradict the DEIR’s reliance (at p. 5-17) on 1997 assurances from the NRC: “The NRC has specifically stated that while returning a site to preexisting background conditions is optimal, that threshold may not be reasonable because it ‘may result in a net detriment or ... [the] cost cannot be justified.’ ” Logically, is the DEIR implicitly suggesting that the Humboldt Bay and Rancho Seco ALARA calculations – both conducted before the NRC tripled its VSL estimate in 2022 – led to a level of remediation that “may not be reasonable”? Or were the earlier generalizations about “net detriment” and costs that “cannot be justified” overstated when applied to Humboldt Bay and Rancho Seco? What would an “optimal” threshold be when the NUREG-1530 Revision 1 values are incorporated into the ALARA process? Would reliance on opaque ALARA calculations to reduce dose rates from a 10 mrem ceiling, rather than from a lofty 25 mrem, inspire more public confidence in PG&E’s exercise of discretion?

8. THE DEIR IMPRESSION ABOUT INCREMENTAL COSTS OF 10 MREM IS EXCESSIVE.

In addition to re-examining its implicit assumptions about costs in light of the Humboldt Bay and Rancho Seco results, the DEIR should also consider the remediation cost assumptions being used in the San Onofre decommissioning. Southern California Edison specified a 15 mrem remediation level in its bid solicitation for a Decommissioning General Contractor, although the Navy (as landowner of the site) has indicated a 12 mrem standard may apply. Edison asked bidders about the difference in costs associated with meeting a 12 mrem criterion versus a 15 mrem criterion and reported that “the bidders considered the cost difference between the criteria values to be immaterial.” (See Attachment B to this letter)

Similarly, PG&E testified in its most recent decommissioning proceeding at the California Public Utilities Commission that the company considers it “very likely” that its efforts will achieve a level below 25-millirem with no additional cost to customers.⁹

9. THE DEIR WRONGLY ASSERTS A NEED FOR STATE ACTION TO IMPOSE A 10 MREM LEVEL.

The DEIR fails to recognize the County’s authority, as issuer of the Development Plan/Coastal Development Permit and Conditional Use Permit, to condition approval on site remediation to a not-to-exceed 10 mrem level. The County’s responsibilities under its certified Local Coastal Program, its Coastal Zone Land Use Ordinance, and its Land Use Ordinance do not enable it to dodge the 10 vs 25 mrem issue on procedural grounds. Although appealable to the Coastal Commission, the substantive issue must first be addressed by the County.

⁸ See <https://www.nrc.gov/docs/ML1808/ML18082B076.pdf>.

⁹ A.21-12-007, PGE-8, p. 1-13, lns. 1 – 3.

10. THE DEIR ERRS IN REFUSING TO EVALUATE A 10 MREM ALTERNATIVE.

The DEIR's mistaken divergence from the CSLC's approach to radiological risk in the San Onofre EIR (See Comment #1 above) appears to have enabled its dismissal of a 10 mrem standard as an alternative worth evaluating. This avoidance is inconsistent with the State CEQA Guidelines §15126.6(a) – (c). It also is inconsistent with the County's testimony to the California Public Utilities Commission in the most recent Diablo Canyon decommissioning proceeding:

The County supports cleanup of the site to ensure that it is safe for unrestricted reuse and repurposing once the power plant has been decommissioned. The County must point out, however, that a more stringent standard may have unintended environmental impacts on the plant site and on the community. Specifically, a lower standard may require more site disturbance due to additional excavation/backfill work and more truck and/or barge transportation associated with transporting contaminated soil for disposal. This could translate into increased traffic impacts and increased emissions of greenhouse gas, criteria pollutants, and fugitive dust. In addition, further excavation could result in impacts to cultural and biological resources. If the Commission decides to consider a lower standard, the Commission must consider the potential environmental impacts associated with such a decision.¹⁰

These potential impacts from a 10 mrem standard should be fully evaluated, and the DEIR is the proper forum in which to do so. Failure to analyze a 10 mrem standard as a CEQA alternative could preclude the County from later adopting it as a condition of PG&E's Development Plan/Coastal Development Permit and Conditional Use Permit.

11. THE DEIR IGNORES REMEDIATION'S IMPACT ON POST-LICENSE SITE REPURPOSING.

Notwithstanding the County's acute interest in future uses of the post-license site, the DEIR is premised on the belief that satisfaction of the NRC's 25 mrem "default" threshold for unrestricted use – in contrast to the 10 mrem remediation "best practices" standard required in the Northeastern states – will avoid adversely affecting the marketability of different reuse options. PG&E alerted the County to a very different reality in its December 2021 Repurposing and Reuse Concepts Report, candidly admitting that public perception of contamination of the site may result in resistance to certain uses. Nothing would more quickly contribute to such a perception than the County's refusal to objectively consider a 10 mrem alternative.

Sincerely,

/s/

Rochelle Becker
Executive Director

¹⁰ A.21-12-007, Rebuttal Testimony of Susan Strachan on Behalf of the County of San Luis Obispo, p. 2, Ins. 1 – 12.

ATTACHMENT A

Southern California Edison
2018 NDCTP A.18-03-009

DATA REQUEST SET A.18-03-009 A4NR-SCE-002

To: A4NR

Prepared by: Katie Chollet-Guibert

Title: PM

Dated: 09/03/2018

Question 38:

38. Please provide a copy of the summary compiled by Thomas Palmisano of “release criteria used at other U.S. decommissioning sites” in response to the action item assigned him at the June 9, 2016 meeting of the SONGS Executive Committee. If this summary has been updated since its original completion, please provide a copy of any such update.

Response to Question 38:

Please see the attached file that provides the summary of the "release criteria used at other U.S. decommissioning sites" that was provided in response to the action item assigned during the June 9, 2016 SONGS Executive Committee meeting and an updated version of the information.

The key takeaways from these tables are that: 1) the release criteria is not formally established until a decommissioning approach is determined and documented in the LTP; 2) most plants use the 25 mR limit established by the NRC unless alternative agreements are made with other governmental or non-governmental stakeholders; and 3) release criteria are approved by the NRC via review and approval of the LTP.

Decommissioning Status for Shut Down NRC-Licensed Power Reactors (As of June 2016)

Reactor	Type	Thermal Power	Location	Shutdown	Status	Fuel Onsite	Site Release Criteria
Big Rock Point	BWR	67 MW	Charlevoix, MI	08/29/97	ISFSI Only *	Yes	25 mR/yr, Resident Farmer w/o meat and milk pathways
Crystal River 3	PWR	2,609 MW	Crystal River, FL	02/20/13	SAFSTOR	Yes	Not established
Dresden 1	BWR	700 MW	Morris, IL	10/31/78	SAFSTOR	Yes	Not established
Fermi 1	Fast Breeder	200 MW	Monroe Co., MI	09/22/72	SAFSTOR	No	Not established
Fort St. Vrain	HTGR	842 MW	Platteville, CO	08/18/89	ISFSI Only	Yes	NRC Reg. Guide 1.86*****
GE VBWR	BWR	50 MW	Alameda Co., CA	12/09/63	SAFSTOR	No	Not established
Haddam Neck	PWR	1825 MW	Haddam Neck, CT	12/09/96	ISFSI Only	Yes	19 mR/yr***** Resident Farmer
Humboldt Bay 3	BWR	200 MW	Eureka, CA	07/02/76	DECON	Yes	25 mR/yr Resident Farmer
Indian Point 1	PWR	615 MW	Buchanan, NY	10/31/74	SAFSTOR	Yes	Not established
Kewaunee	PWR	1772 MW	Carlton, WI	5/07/13	SAFSTOR	Yes	Not established
LaCrosse	BWR	165 MW	LaCrosse, WI	04/30/87	DECON	Yes	Will requested 25 mR/yr Industrial Worker in LTP
Maine Yankee	PWR	2772 MW	Bath, ME	12/06/96	ISFSI Only	Yes	10 mR/yr (4 mR/yr groundwater)***** Resident Farmer
Millstone 1	BWR	2011 MW	Waterford, CT	07/21/88	SAFSTOR	Yes	Not established
N.S. Savannah	PWR	80 MW	Norfolk, VA	11/70	SAFSTOR	No	Not established
Pathfinder	Super-heat BWR	190 MW	Sioux Falls, SD	09/16/67	License Terminated	No	NRC Reg. Guide 1.86*****
Peach Bottom 1	HTGR	115 MW	York Co., PA	10/31/74	SAFSTOR	No	Not established
Rancho Seco	PWR	2772 MW	Sacramento, CA	06/07/89	ISFSI Only**	Yes	25 mR/yr Industrial Worker

Decommissioning Status for Shut Down NRC-Licensed Power Reactors (As of June 2016)

Reactor	Type	Thermal Power	Location	Shutdown	Status	Fuel Onsite	Site Release Criteria
San Onofre 1	PWR	1347 MW	San Clemente, CA	11/30/92	SAFSTOR	Yes	Will establish with SONGS 2&3
Saxton	PWR	28 MW	Saxton, PA	05/01/72	License Terminated	No	25 mR/yr Resident Farmer
Shoreham	BWR	2436 MW	Suffolk Co., NY	06/28/89	License Terminated	No	NRC Reg. Guide 1.86****
Three Mile Island 2	PWR	2772 MW	Middletown, PA	03/28/79	SAFSTOR ***	No	Not established
Trojan	PWR	3411 MW	Portland, OR	11/09/92	ISFSI Only	Yes	25 mR/yr Resident Farmer
Vermont Yankee	BWR	1912 MW	Vernon, VT	12/29/14	SAFSTOR	Yes	Not established
Yankee Rowe	PWR	600 MW	Franklin Co., MA	10/01/91	ISFSI Only	Yes	10 mR/yr***** Resident Farmer
Zion 1 and 2	PWR	3250 MW	Zion, IL	02/21/97 09/19/96	DECON	Yes	25 mR/yr Resident Farmer requested in LTP

Decommissioning completed

* An independent spent fuel storage installation (ISFSI) is a stand-alone facility within the plant boundary constructed for the interim storage of spent nuclear fuel. ISFSI Only means the plant operating license has been reduced to include only the spent fuel storage facility or a new Part 72 License issued by the NRC for the ISFSI and the operating Part 50 license terminated.

** Rancho Seco has shipped all low-level waste from a separate storage facility that had been used until recently and is decommissioning that facility.

*** Post-defueling monitored storage (PDMS).

****These plants' licenses were terminated before the issuance of the NRC 25 mrem/yr dose based regulations (the License Termination Rule) in 1996. The criteria before that time was the concentration limits in Regulatory Guide 1.86 which were based on the sensitivity of available instruments and not dose.

*****The lower dose criteria at these plants was required by the state regulator where they were located. The NRC criteria was still 25 mrem/yr. How this was handled was different at the different sites. As Maine Yankee put these lower criteria in their LTP, the NRC enforced the lower limits. As Connecticut Yankee did not put the lower dose limits in the LTP and stated the lower values as administrative limits in documents prepared for the NRC, the NRC did not enforce the lower limits.

ATTACHMENT B

Southern California Edison
2018 NDCTP A.18-03-009

DATA REQUEST SET A.18-03-009 A4NR-SCE-002

To: A4NR

Prepared by: Katie Chollet-Guibert

Title: PM

Dated: 09/03/2018

Question 36:

36. Please explain the basis for Nino Mascolo's statement to the SONGS Executive Committee that the radiological release standard "currently used by the Navy" is 12 mrem, as reported in minutes of the June 9, 2016 meeting of the SONGS Executive Committee.

Response to Question 36:

The Navy's 12 mrem/year release criteria described by Nino Mascolo was established in the Navy's August 20, 2015 letter, provided in response to Question No. 21, in which the Navy directed SCE to show that the Mesa lease parcels 5, 6, and 7 met certain cleanup criteria, including "The Mesa Site (OR PARCELS 5, 6, and 7) achieve a release criteria of no more than 12mrem/year...." Mr. Mascolo's discussion identified the August 20th letter's Mesa release criteria as a Navy position that possibly could be applied to the SONGS site in the future.

Southern California Edison
2018 NDCTP A.18-03-009

DATA REQUEST SET A.18-03-009 A4NR-SCE-002

To: A4NR

Prepared by: Katie Chollet-Guibert

Title: Project Manager

Dated: 09/03/2018

Question 37:

37. Please provide a copy of the analysis performed by Nino Mascolo “pertaining to the difference in cost between 12-15 MREM and the potential for 15 MREM to be surpassed” in response to the action item assigned him at the June 9, 2016 meeting of the SONGS Executive Committee. If this analysis has been updated since its original completion, please provide a copy of any such update

Response to Question 37:

No formal analysis was prepared. Instead, discussions occurred between the DGC bidders and SCE regarding the difference in costs associated with meeting a 12 mrem criteria versus a 15 mrem criteria. The bidders considered the cost difference between the criteria values to be immaterial. No further inquiries were conducted and the SONGS Executive Committee was informed accordingly.