

May 1, 2015

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:)
)
PACIFIC GAS AND ELECTRIC) Docket No. 50-275-LR
COMPANY) Docket No. 50-323-LR
)
(Diablo Canyon Power Plant, Units 1 and 2))

PACIFIC GAS AND ELECTRIC COMPANY'S ANSWER
OPPOSING PROPOSED ENERGY ALTERNATIVES CONTENTIONS

INTRODUCTION

Pursuant to 10 C.F.R. § 2.309(h), Pacific Gas and Electric Company (“PG&E”) hereby responds to the San Luis Obispo Mothers for Peace (“SLOMFP”) motion to admit two new contentions in this license renewal matter. The proposed contentions address the adequacy of PG&E’s Environmental Report (“ER”) sections addressing energy alternatives.¹ For the reasons discussed below, neither contention should be admitted for hearing.

BACKGROUND

On January 21, 2010, the NRC published the *Federal Register* notice offering an opportunity for a hearing on PG&E’s Diablo Canyon license renewal application. The period for filing a request for hearing, petition to intervene, and proposed contentions closed on March 22, 2010. SLOMFP filed a timely request, which the Licensing Board granted.

¹ “San Luis Obispo Mothers for Peace’s Motion to File New Contentions Regarding Adequacy of Environmental Report for Diablo Canyon License Renewal Application,” dated April 6, 2015 (“Motion”).

On February 25, 2015, PG&E submitted an update to ER, Chapter 7, *Alternatives to the Proposed Action*, Chapter 8, *Comparison of Environmental Impacts of License Renewal With the Alternatives*, and Section 9.2, *Alternatives*.² Consistent with the NRC’s approach in the Generic Environmental Impact Statement for License Renewal,³ the ER focuses on the relative environmental impacts of replacement generation for 2,285 megawatts of baseload, low carbon electricity. In the Revised ER PG&E included the environmental impacts of natural gas-fired generation, purchased power, a combination of generation sources, and demand-side management/energy efficiency (“DSM/EE”). The new information incorporated in the Revised ER generally relates to the combination and the DSM/EE alternatives. PG&E summarized the comparative impacts of each alternative. On April 6, 2015, SLOMFP filed the motion to admit two new contentions, supposedly based on the updated ER and relating to the discussion of reasonable alternatives to the proposed action (license renewal).

APPLICABLE LEGAL STANDARDS

The timeliness and admissibility of proposed contentions must be evaluated in accordance with the Commission’s standards in 10 C.F.R. Part 2. In general, a contention must be based on the application or other documents available at the time the hearing request and petition to intervene are to be filed.⁴ The Commission’s longstanding policy is that a petitioner has an

² PG&E Letter DCL-15-027, Enclosure 2, Attachment 1, “Update to the Diablo Canyon Power Plant License Renewal Application,” dated February 25, 2015 (ADAMS Accession Nos. ML15056A741 and ML15056A755) (“Revised ER”).

³ NUREG-1437, Rev. 1 “Generic Environmental Impact Statement for License Renewal of Nuclear Power Plants,” at Section 2.4 (June 2013) (“License Renewal GEIS”).

⁴ 10 C.F.R. § 2.309(f)(2); *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-00-27, 52 NRC 216, 223 (2000) (time to submit contentions tolls when the information on which the contention is based first becomes available, not publication of an NRC Staff NEPA review document).

“iron-clad obligation to examine the publicly available documentary material ... with sufficient care to enable it to uncover any information that could serve as the foundation for a specific contention.”⁵ Section 2.309(f)(2) provides that intervenors may file a new or amended environmental contention after the initial deadline only if the contention complies with 10 C.F.R. § 2.309(c)(1). Under 10 C.F.R. § 2.309(c)(1), the intervenor must demonstrate that:

- (i) The information upon which a new contention is based was not previously available;
- (ii) The information upon which a new contention is based is materially different from information previously available; and
- (iii) The new contention has been submitted in a timely fashion based on the availability of the subsequent information.

Documents merely summarizing earlier documents or compiling pre-existing, publicly available information do not render “new” the summarized or compiled information.⁶

All contentions must meet the Commission’s admissibility standards, which are “strict by design.”⁷ A petitioner must provide sufficient information to demonstrate that there is a genuine dispute with the application on an issue material to the license renewal decision. Vague references to documents do not suffice — the petitioner must identify specific portions of

⁵ *Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), CLI-93-3, 37 NRC 135, 147 (1993); *see also Florida Power & Light Co.* (Turkey Point Nuclear Generating Station, Units 3 & 4), CLI-01-17, 54 NRC 3, 24-25 (2001).

⁶ *See Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), CLI-10-27, 72 NRC 481, 493-96 (2010) (finding that a contention based on pre-existing information compiled in a safety evaluation report was untimely).

⁷ *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001), *pet. for reconsideration denied*, CLI-02-01, 55 NRC 1 (2002).

documents on which it relies.⁸ Conclusory statements also are not enough.⁹ Contentions must be ruled inadmissible if they offer only “bare assertions and speculation.”¹⁰

DISCUSSION

A. Contention A Is Not Admissible

SLOMFP’s first proposed contention asserts that “Chapter 7 of PG&E’s Amended Environmental Report is inadequate to satisfy [the National Environmental Policy Act (“NEPA”)] and 10 CFR § 51.53(c)(2) because it does not evaluate a reasonable array of energy alternatives that either currently are commercially viable or will become so in the near term (*i.e.*, within the next ten years).”¹¹ SLOMFP claims that PG&E’s energy alternatives analysis is based on arbitrary and unreasonable assumptions about (1) the necessary characteristics of replacement energy; (2) the viability and availability of alternative energy sources; and (3) the reasonable combinations of energy sources. None of these bases support an admissible contention. SLOMFP also raises issues outside the scope of this proceeding.

1. A Challenge to the Need for Baseload Generation is Not an Issue Material to the License Renewal Environmental Review

In adopting the Part 51 regulations for license renewal¹² and in the License Renewal GEIS¹³ the Commission plainly stated the purpose and need for license renewal as it relates to

⁸ *Pub. Serv. Co. of N.H.* (Seabrook Station, Units 1 & 2), CLI-89-03, 29 NRC 234, 240-41 (1989).

⁹ *Northeast Nuclear Energy Co.* (Millstone Nuclear Power Station, Unit 3), CLI-01-3, 53 NRC 22, 27 (2001).

¹⁰ *Fansteel, Inc.* (Muskogee, Oklahoma, Site), CLI-03-13, 58 NRC 195, 203 (2003).

¹¹ Motion at 2.

¹² “Environmental Review for Renewal of Nuclear Power Plant Operating Licenses; Final Rule,” 61 Fed. Reg. 28467, 28472 (June 5, 1996) (“1996 Final Rule”).

the environmental review under NEPA:

The purpose and need for the proposed action (renewal of an operating license) is to provide an option that allows for power generation capability beyond the term of a current nuclear power plant operating license to meet future system generating needs, as such may be determined by State, utility, and, where authorized, Federal (other than NRC) decisionmakers.

PG&E identified in the ER that Diablo Canyon currently provides approximately 2,285 megawatts of baseload, low carbon electricity to PG&E's customers. In accordance with the NRC's regulations, the purpose of the proposed action (license renewal) is therefore to retain the option of operation of Diablo Canyon to supply baseload generation. In defining the scope of alternatives considered in both the original and the Revised ER, PG&E considered reasonable alternatives that could replace the baseload generation of Diablo Canyon during the license renewal term.¹⁴ But, according to SLOMFP, PG&E's assumption that Diablo Canyon capacity must be replaced with baseload capacity is "unreasonable" and "outdated."¹⁵ Based on a Declaration from Mr. Mark Cooper, SLOMFP claims that "improvement in technologies and declining costs for resources that are not considered 'baseload' are transforming the electricity sector, allowing active integration of supply and demand to reliably meet the need for electricity and replace the passive, baseload approach that dominated the electricity sector of the twentieth

¹³ License Renewal GEIS at 1-16.

¹⁴ ER at 7.1-1; Revised ER at 7.1-1. The NRC in the License Renewal GEIS also defined the purpose and need for the proposed action similarly: "The purpose and need for the proposed action (issuance of a renewed license) is to provide an option that allows for baseload power generation capability beyond the term of the current nuclear power plant operating license to meet future system generating needs." License Renewal GEIS at 1-3 (emphasis added).

¹⁵ Motion at 3.

century.”¹⁶ This particular aspect of the proposed contention raises an issue that the NRC does not need to resolve under NEPA.

Addressing the scope of alternatives to be considered in an environmental review under NEPA, the D.C. Circuit has stated that “[w]hen the purpose [of the proposed action] is to accomplish one thing, it makes no sense to consider the alternative ways by which another thing might be achieved.”¹⁷ For this reason, the Commission has held that, to be admissible, an environmental contention asserting that the applicant failed to consider a reasonable alternative must show that a suggested alternative would satisfy the purpose of the proposed action.¹⁸ The Commission gives “substantial weight to the preferences of the applicant and/or sponsor.”¹⁹ SLOMFP, on the other hand, would ignore the Commission’s definition of the purpose of license renewal (preserving a generation option) and reject the actual purpose of Diablo Canyon (baseload generation). The Commission has specifically rejected contentions asserting that an applicant must consider in detail alternatives that do not involve baseload generation.²⁰

¹⁶ Motion at 3; *see also* Cooper Decl. at ¶7.

¹⁷ *Citizens Against Burlington v. Busey*, 938 F.2d 190, 195 (D.C. Cir. 1991), *cert. denied*, 502 U.S. 994 (1991) (citation and internal quotation marks omitted).

¹⁸ *See NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-05, 75 NRC 301, 339 (2012) (explaining that neither the NRC nor the applicant must consider an alternative that does not “‘bring about the ends’ of the proposed action”); *City of Grapevine v. Dep’t of Transp.*, 17 F.3d 1502, 1506 (D.C. Cir.), *cert. denied*, 513 U.S. 1043 (1994); *accord Env’tl. Law & Policy Center v. NRC*, 470 F.3d at 683-84.

¹⁹ *Seabrook*, CLI-12-05, 75 NRC at 339; *see also Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-4, 53 NRC 31, 55 (2001).

²⁰ *Seabrook*, CLI-12-05, 75 NRC at 337-349; *see also First Energy Nuclear Operations Company* (Davis-Besse Nuclear Power Station, Unit 1), CLI-12-08, 75 NRC 393, 402 (rejecting admissibility of contention seeking expanded alternative analysis of wind, either alone or in combination with solar and storage, as failing to adequately demonstrate the capacity to produce baseload power).

SLOMFP's issue regarding the replacement of Diablo Canyon baseload generation with a new model for the electricity industry is also an argument related to whether the option of extended operation under a renewed license should in fact be exercised (as opposed to retained). This is an issue appropriate for a State regulatory forum, not the NRC.

This basis for the proposed Contention A is also untimely. The ER has, since it was initially filed, defined the reasonable alternatives to license renewal as alternatives that could replace the baseload capacity provided by Diablo Canyon. In this regard, there is no change in the Revised ER. SLOMFP could have challenged the scope of alternatives at the outset of the proceeding.²¹

2. *SLOMFP Fails to Demonstrate a Genuine Dispute Regarding the Viability and Availability of Alternative Energy Sources*

SLOMFP next alleges that “PG&E unreasonably rejects the prospect that ‘renewable technology, energy efficiency, and operational capabilities will have advanced sufficiently and be available to replace 2,285 MW of DCPD baseload generation.’”²² Relying on Mr. Cooper's Declaration, SLOMFP claims that “estimates of achievable distributed generation, efficiency and geothermal, alone indicate that four times as much ‘capacity’ will be available in the PG&E service territory in the time frame relevant to this license renewal request.”²³ Mr. Cooper's Declaration, however, does not establish a genuine factual dispute with the ER regarding the viability of efficiency and geothermal sources to replace Diablo Canyon baseload generation.

²¹ 10 C.F.R. § 2.309(c)(1).

²² Motion at 4, citing Revised ER at 7.2-2.

²³ *Id.*

First, in a change from the original ER, PG&E in fact included demand side management and energy efficiency in the Revised ER as an alternative to license renewal.²⁴ But, beyond offhand references to estimates of energy efficiency, neither SLOMFP nor Mr. Cooper engage or dispute any particular aspect of PG&E’s discussion of the issue. As a result, there is no basis for a genuine dispute with respect to DSM/EE as a replacement to baseload generation.

Second, Mr. Cooper cites the updated ER, which itself cited the NRC’s 2013 License Renewal GEIS, for the proposition that there is “the potential for additional geothermal power development [in California] on private and public lands of 9,282 MWe.”²⁵ According to Mr. Cooper, it would be “conservative” to assume that half of the potential geothermal capacity would be in PG&E’s service territory.²⁶ However, Mr. Cooper provides no support for the argument. In fact, the U.S. Geological Survey factsheet referenced in the License Renewal GEIS states that there is only a 5% chance that at least 9,282 MWe could be developed.²⁷ Conclusory statements, even when provided by an expert, are insufficient to demonstrate that further inquiry is appropriate.²⁸

²⁴ Revised ER at 7.2-6.

²⁵ Cooper Decl. at ¶10.

²⁶ *Id.*

²⁷ In the License Renewal GEIS, the reference is to *Assessment of Moderate- and High-Temperature Geothermal Resources of the United States*, Fact Sheet 2008-3082 (available at <http://pubs.usgs.gov/fs/2008/3082/>). The Fact Sheet explains that there is a 95% chance that only 2,422 MW could be developed.

²⁸ *USEC* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (“[A]n expert opinion that merely states a conclusion (*e.g.*, the application is ‘deficient,’ ‘inadequate,’ or ‘wrong’) without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary, reflective assessment of the opinion” (footnote omitted)).

Third, Mr. Cooper provides no information to demonstrate that development of geothermal resources is commercially viable at the scale needed to replace the baseload output of Diablo Canyon by 2024.²⁹ PG&E explained its reasoning for concluding that geothermal generation could not replace the baseload output of Diablo Canyon. Current geothermal plants range in size from under 1 MW to 110 MW.³⁰ This implies, at a minimum, construction of 20 new geothermal plants.³¹ The ER also highlighted the substantial land requirements for geothermal development (1-8 acres per MW), as well as the need to develop “many miles” of new transmission lines.³² For these reasons, PG&E concluded that developing an additional 2,285 MW of geothermal resources was not a reasonable alternative to license renewal. SLOMFP and Mr. Cooper present no information to specifically challenge the conclusion. Therefore, there again is no genuine dispute with the application.³³

²⁹ *Seabrook*, CLI-12-05, 75 NRC at 342 (a “‘reasonable’ energy alternative is one that is currently commercially viable, or will become so in the relatively near term”).

³⁰ Revised ER at 7.2-12; ER at 7.2-7.

³¹ According to Reference 14 in the Revised ER, the California Energy Commission’s *2013 Integrated Energy Policy Report*, dated January 2014 (available at: <http://www.energy.ca.gov/2013publications/CEC-100-2013-001/CEC-100-2013-001-CMF.pdf>) (at 153), unlike wind and solar where substantial investment is fueling a learning curve, geothermal development is “not expected to experience substantial cost reductions over the next decade.”

³² Revised ER at 7.2-12; ER at 7.2-7. PG&E did consider the potential for 100 MW of new geothermal development as part of the combination alternative. Revised ER at 7.2-4.

³³ *See Seabrook*, CLI-12-05, 75 NRC at 343-344 (explaining that an intervenor’s failure to challenge an ER’s conclusion that a particular alternative is too costly to be a reasonable alternative to nuclear energy as a source of baseload power is “fatal” to the contention).

This aspect of Contention A is also untimely. New or amended contentions must be based on new facts not previously available.³⁴ Here, the USGS Factsheet that is referenced in the License Renewal GEIS was published in 2008, prior to PG&E’s submittal of the license renewal application in late 2009. In addition, the original ER — just like the Revised ER — concluded that geothermal energy, as a discrete resource, is not a reasonable alternative to license renewal. To the extent that SLOMFP wanted to challenge PG&E’s conclusion that geothermal resources could not, standing alone, replace the baseload power generated by Diablo Canyon, that challenge should have been made based on the original ER.³⁵

3. *SLOMFP Fails To Demonstrate a Genuine Dispute Regarding the Combination Alternative*

In the Revised ER (at 7.2-4), PG&E explained that it is currently pursuing wind, solar, and geothermal generation opportunities in order to meet California’s aggressive renewable power requirements. PG&E explained that there may be “insufficient operational flexibilities to both meet those renewable power requirements and replace DCCP baseload capacity with wind, solar, and geothermal generation.”³⁶ Nevertheless, in order to provide insights regarding the impacts associated with a combination of energy sources, PG&E considered a “combination” alternative that includes a contribution of natural gas, wind (with storage), solar (with storage), geothermal, and demand-side management. PG&E provided a basis for its selection of each component of the combination alternative, which includes:

³⁴ *Entergy Nuclear Generation Co. and Entergy Nuclear (Pilgrim Nuclear Power Station)*, CLI-12-10, 75 NRC 479, 493 n.70 (2012) (emphasis in original).

³⁵ 10 C.F.R. § 2.309(c)(1).

³⁶ Revised ER at 7.2-4.

Generation	Installed Capacity	Capacity Factor (if applicable)	“Baseload” Equivalent
Concentrated Solar	400 MW		400 MW
Wind	830 MW	35%	290 MW
Solar PV	1160 MW	25%	290 MW
Geothermal	100 MW		100 MW
Demand-Side	100 MW		100 MW
Natural Gas	1105 MW		1105 MW
Total			2285 MW

SLOMFP asserts that this combination scenario is “arbitrary and unreasonable” because PG&E “arbitrarily restricted the alternative combinations” and “ignores the dramatic developments in virtually every one of the individual technologies (solar, wind, battery storage, information and control technologies) that would allow a much more flexible approach to integrated management of supply and demand.”³⁷ According to SLOMFP, this results in an overreliance on natural gas.³⁸ But SLOMFP does not provide sufficient basis to demonstrate a genuine dispute with PG&E’s allocation of replacement baseload power among the various alternate energy sources.

First, the PG&E combination alternative already presumes significant technological advances will take place.³⁹ PG&E’s analysis and Mr. Cooper’s views are, in this respect, aligned. For example, PG&E is subject to California’s aggressive renewable power requirements and is on

³⁷ Motion at 4-5.

³⁸ *Id.* at 5; Cooper Decl. at ¶16, ¶9.

³⁹ In addition to incorporating technological advances in renewables and energy storage (discussed below), the Revised ER specifically recognizes (at 7.2-14) a new generation technology not considered in the original ER: ocean wave and current energy. This put to lie SLOMFP’s broad claim that “PG&E has not kept up with the massive changes in the energy environment that have taken place since [the original ER].” Motion at 14.

track to meeting the goal of 33 percent renewable electricity by 2020. PG&E conservatively considered an additional 400 MW of concentrated solar power (with storage), 830 MW of wind (with storage), 1160 MW of solar PV (with storage), and 100 MW of geothermal power in the combination alternative. But, as explained in the updated ER, there are operational and integration challenges associated with meeting those renewable power requirements and at the same time replacing Diablo Canyon’s baseload capacity with additional wind, solar, and geothermal generation.⁴⁰ Neither SLOMFP nor Mr. Cooper provide information to suggest that greater contributions to baseload power from these resources is technologically feasible or commercially viable now or in the near future.⁴¹

Second, the combination alternative also assumes — as Mr. Cooper suggests — that there will be dramatic technological developments related to energy storage. As explained in the ER, PG&E and other California utilities must develop energy storage system under California Assembly Bill (AB) 2514.⁴² The California Public Utility Commission (“CPUC”) adopted energy storage targets in 2013. Based on those targets, PG&E anticipates procuring 580 MW of energy storage by 2020, with installation required no later than the end of 2024. For purposes of the ER evaluation, PG&E conservatively assumed that all 580 MW of energy storage would be used to overcome the intermittency of wind and solar PV generation and permit development of additional

⁴⁰ Revised ER at 7.2-2, 7.2-5.

⁴¹ *Seabrook*, CLI-12-05, 75 NRC at 342 (explaining that an admissible contention on energy alternatives in a license renewal proceeding requires a petitioner to provide “alleged facts or expert opinion” sufficient to raise a genuine dispute as to whether the best information available today suggests that commercially viable alternate technology (or combination of technologies) is available now, or will become so in the near future, to supply baseload power).

⁴² Revised ER at 7.2-4.

“baseload” power.⁴³ Neither SLOMPF nor Mr. Cooper provide any information showing that additional storage beyond that mandated by the CPUC is technologically feasible or commercially viable. The proposed contention is entirely speculative in this regard.

Third, Mr. Cooper asserts that PG&E’s analysis is “fundamentally weak” because it ignores “the dramatic development in battery technology that has been occurring over the past several years.”⁴⁴ But, the updated ER in fact recognizes that development of battery storage options is “ongoing” and concludes that “none are currently available in the quantities or capacities that would provide baseload amounts of power.”⁴⁵ Mr. Cooper does not acknowledge, much less dispute, this conclusion. For example, he states only that batteries may become the “the lowest cost peak resource.”⁴⁶ Nowhere does he claim that battery technologies are likely to be sufficiently advanced to approximate baseload power when used in conjunction with intermittent renewables, such as wind and solar PV.

Mr. Cooper faults PG&E for relying on compressed air energy storage (“CAES”), rather than batteries, when assessing energy storage. But the ER explains PG&E’s choice:

Technologies currently available or under consideration for deployment as potential energy storage alternatives include battery storage, flow batteries, flywheel, superconducting magnetic energy storage, supercapacitor, and CAES. PG&E has chosen CAES as being representative of the energy

⁴³ In fact, much of the energy storage that will be procured will store between 15 minutes and several hours of energy, far short of that needed to overcome the 25% and 35% capacity factors of solar PV and wind, respectively. *See, e.g.*, PG&E’s “2014 Energy Storage Request for Offers (“RFO”) Frequently Asked Questions,” dated February 11, 2015, at 2 (available at http://www.pge.com/includes/docs/pdfs/b2b/wholesaleelectricssuppliersolicitation/Energy_Storage/2014_EnergyStorage_FAQs_021115.pdf).

⁴⁴ Cooper Decl. at ¶16.

⁴⁵ Revised ER at 7.2-11 (emphasis added).

⁴⁶ Cooper Decl. at ¶16.

storage technologies because of the potential for supplying adequate amounts of backup power of a longer duration.⁴⁷

Neither SLOMFP nor Mr. Cooper address the deficiencies associated with batteries that PG&E assumed could be solved with CAES: scale and duration. SLOMFP therefore fails to demonstrate a genuine dispute on this issue.

SLOMFP also alleges that the combination alternative unreasonably assumes that a significant amount of gas generation would be needed to replace the baseload generation of Diablo Canyon. But Mr. Cooper provides no basis on which to conclude that relatively inexpensive natural gas would not be a significant part of a reasonable combination. And, in fact, natural gas makes up less than 50% of PG&E's combination alternative. The updated ER explains that this is a lower percentage of natural gas than the mix of generation in California in 2012, which was 60% natural gas.⁴⁸ The ER also compared (at 7.2-5) the gas contribution in the combination alternative to the resources authorized to meet Southern California local area requirements following closure of the San Onofre Nuclear Generation Station:

Of the minimum of 2,700 MW authorized by CPUC, approximately half (1,300 MW) will come from gas-fired generation. Of the maximum of 3,600 MW authorized by the CPUC, up to 2,400 MW could be gas-fired generation. Therefore, the actual combination of resources used to meet local area requirements after the SONGS closure will have about the same or greater contribution from gas-fired resources than the hypothetical combination alternative considered in the ER.

SLOMFP did not dispute this rationale, nor did it provide any other support for its broad claim that the gas-fired contribution to the combination alternative is unreasonable.

For all of these reasons, SLOMFP has failed to demonstrate that there is a genuine, litigable dispute with the PG&E's consideration of a combination alternative. Given that an

⁴⁷ Revised at 7.2-19.

⁴⁸ Revised ER at 7.2-1. This was the latest generation information available.

alternatives evaluation under NEPA need not consider every conceivable alternative or every speculative future scenario,⁴⁹ SLOMFP has not demonstrated that there is a dispute on a material issue of fact or law to be litigated in this forum.

4. *SLOMFP Fails To Demonstrate an Issue That Would Lead to Relief in This Proceeding*

Under 10 C.F.R. § 51.95(c)(4), the NRC’s consideration of alternatives to license renewal is required only to lead to an NRC finding whether “the adverse environmental impacts of license renewal are so great [compared to alternatives] that preserving the option of license renewal for energy planning decisionmakers would be unreasonable.”⁵⁰ Under this standard, license renewal would only be denied if the expected environmental effects of license renewal significantly exceed all or almost all alternatives.⁵¹ SLOMFP and Mr. Cooper, however, never argue that some combination would in fact have significantly fewer environmental impacts than renewing Diablo Canyon’s license for an additional 20-year term. SLOMFP ignores the impacts of alternatives and offers no specific basis for a conclusion that preserving the option of continued operation would be unreasonable.

SLOMFP concludes its arguments in Contention A only by broadly claiming that costs of renewables and efficiency improvements are declining, while costs related to operation of

⁴⁹ See *Headwaters, Inc. v. Bureau of Land Management, Medford Dist.*, 914 F.2d 1174, 1181 (9th Cir. 1990) (“An agency’s consideration of alternatives is sufficient if it considers an appropriate range of alternatives, even if it does not consider every available alternative.”); *Seabrook*, CLI-12-05, 75 NRC at 342 (“Except in rare cases where there is evidence of unusual predictive reliability, it is not workable to consider, for purposes of NEPA analysis, what are essentially hypothetical or speculative alternatives as a source of future baseload power generation.”).

⁵⁰ See also 61 Fed. Reg. at 28471-73.

⁵¹ *Id.* at 28472.

nuclear power plants are increasing.⁵² But, under 10 C.F.R. §§ 51.53(c)(2) and 51.95(c)(2), the ER and the License Renewal GEIS supplement do not need to address the economic costs and benefits of license renewal and alternatives.⁵³ Economic costs of nuclear generation compared to other energy sources is an issue explicitly beyond the scope of this proceeding. As the Commission made clear in adopting the Part 51 regulations, the “determination of the economic viability of continuing the operation of a nuclear power plant is an issue that should be left to appropriate State regulatory and utility officials.”⁵⁴ State regulators and system operators ultimately decide whether a plant will continue to operate — based on factors within the State’s jurisdiction or the owner’s control. The NRC has no role in deciding whether a particular plant should continue to operate based on economic considerations. SLOMFP therefore fails to raise an issue that is material to the environmental review and that could lead to relief in this proceeding.⁵⁵

For all of the above reasons, Contention A is inadmissible.

B. Contention B Is Not Admissible

SLOMFP’s second proposed contention asserts that PG&E’s ER is inadequate to meet 10 C.F.R. § 51.53(c)(2) because “it presents a distorted and inaccurate comparison between the environmental impacts of continued operation of Diablo Canyon . . . and the environmental impacts of energy alternatives.”⁵⁶ SLOMFP asserts that PG&E (a) arbitrarily excludes “energy

⁵² Motion at 6.

⁵³ *See also* License Renewal GEIS at 1-3.

⁵⁴ 61 Fed. Reg. at 28471.

⁵⁵ The Commission has defined a “material” issue as one where “resolution of the dispute would make a difference in the outcome of the licensing proceeding.” 54 Fed. Reg. at 33172 (emphasis added).

⁵⁶ Motion at 8.

alternatives with small impacts” and (b) “misrepresents some of the impacts of renewing Diablo Canyon’s license as small.” The proposed contention, however, does not raise a genuine dispute on an issue material to the findings required by NRC regulations for license renewal. The basis for the contention does not identify any particular alternatives with small impacts that are excluded. And, more importantly, the basis for the proposed contention challenges the impacts of license renewal by challenging generic findings embedded in the NRC’s regulations. The proposed contention is also based on information and arguments that were available long ago. The contention is therefore untimely.

I. Contention B Does Not Establish a Genuine Dispute on a Material Issue

As discussed above, under 10 C.F.R. §§ 51.53(c)(2) and 51.95(c)(2) the ER and the License Renewal GEIS supplement do not need to address the economic costs and benefits of license renewal and alternatives. That issue is left to State regulators and utility officials.⁵⁷ Under 10 C.F.R. § 51.95(c)(2), the analysis of alternatives to the proposed action “should be limited to the environmental impacts of such alternatives.” And, ultimately, under 10 C.F.R. § 51.95(c)(4), the NRC will determine only “whether or not the adverse environmental impacts of license renewal are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable” (emphasis added). When considered against these regulations that define the issues material to the NRC’s license renewal decision, SLOMFP has not raised a genuine dispute within the scope of issues in this proceeding.

In the basis for proposed Contention B, SLOMFP begins by asserting:

As provided by 10 C.F.R. § 51.53(c)(2), PG&E would have to perform a cost-benefit comparison between the proposed action of renewing Diablo Canyon’s license and energy alternatives of the comparable environmental

⁵⁷ 61 Fed. Reg. at 28471.

impacts of license renewal are great enough to tip the balance against license renewal.⁵⁸

This assertion is incorrect as a matter of law. Under the Part 51 regulations, Sections 51.53(c)(2) and 51.95(c)(2), no economic cost-benefit comparison is required. Instead, only a comparison of environmental impacts is required — which is precisely what PG&E has presented in ER Tables 8.1 and 8.2 of the ER. This information supports an NRC determination that the impacts of license renewal, when compared to the alternatives, are not so great that preserving the option of operation under a renewed license would be unreasonable.

SLOMFP vaguely challenges the impacts of the combination alternative by alluding to its reliance on natural gas for a portion of the generation.⁵⁹ This aspect of the contention is addressed above in connection with proposed Contention A. Here, in the basis statement for proposed Contention B, there is still no specific support for an assertion that the combination alternative should not involve a significant natural gas component. (Indeed, any contrary assumption would be patently unreasonable.) Likewise, there is no specific support for a contention that renewable alternatives would not have the environmental impacts shown in the ER. There is simply no basis to litigate infinite variations of a combination alternative.⁶⁰

SLOMFP's focus in proposed Contention B is not on the impacts of alternatives, but on the alleged environmental impacts and associated economic costs of nuclear generation. Starting with the environmental impacts, SLOMFP vaguely challenges PG&E's conclusions in the

⁵⁸ Motion at 9.

⁵⁹ *See id.* (“PG&E arbitrarily evaluated an energy alternative — the ‘combination alternative’ — that has more significant impacts than other reasonable alternatives because it relies heavily on natural gas.”).

⁶⁰ *See, e.g., Nuclear Mgmt. Co. (Monticello Nuclear Generating Plant), LBP-05-31, 62 NRC 735, 753 (2005)* (holding that “there is no requirement for an applicant to look at every conceivable alternative to its proposed action”).

ER that the impacts of license renewal are “small” in “all ten categories.”⁶¹ SLOMFP fails to recognize, or at least acknowledge, that the findings for many categories under the proposed action in Table 8-1 of the ER are based on Category 1 findings from 10 C.F.R. Part 51, Table B-1, and addressed in the License Renewal GEIS (*e.g.*, land use, air quality, human health). Other findings summarized in the table (*e.g.* water quality, socioeconomics, cultural resources) are addressed elsewhere in the ER and SLOMFP offers no substantive challenge to the conclusions. SLOMFP’s generalized assertion fails to support a litigable issue.

SLOMFP specifically challenges the conclusion in the ER for the impacts of waste management.⁶² But the environmental impacts of storing spent fuel and other waste during the license term are (as SLOMFP recognizes) a Category 1 issue and have been determined to be small.⁶³ And the longer term impacts of storage of spent fuel after the license renewal term are addressed in the Commission’s Continued Storage Rule and Continued Storage GEIS.⁶⁴ In the Continued Storage GEIS the NRC considered impacts of extended storage beyond a license term in three different time-frames (short-term, long-term, and indefinite). The NRC concluded that the short-term time-frame (60 years of storage after the licensed life for operation) is the “most likely”

⁶¹ Motion at 9.

⁶² *Id.* at 9-10 (PG&E “apparently restricts its analysis of environmental impacts to the license renewal term.”).

⁶³ 10 C.F.R. Part 51, Table B-1 (as amended, 79 Fed. Reg. at 56263); *see also Pacific Gas and Electric Co.* (Diablo Canyon Power Plant, Units 1 and 2), CLI-11-11, 74 NRC 427,445 (2011) (“[T]he potential environmental impact of storing fuel in pools for an additional twenty years — including the risk of spent fuel pool accidents — has been addressed generically in the GEIS, and is designated as a ‘Category 1’ issue.”).

⁶⁴ NUREG-2157, “Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel” (September 2014) (“Continued Storage GEIS”).

scenario and the impacts are small.⁶⁵ Impacts in the two more extended, and less likely, time-frames are also addressed in the Continued Storage GEIS. Under the Continued Storage Rule, 10 C.F.R. § 51.23(b), these generic findings “shall be deemed” incorporated into the license renewal supplemental environmental impact statement in accordance with 10 C.F.R. § 51.97(a).⁶⁶ These findings are not subject to litigation in this proceeding.

SLOMFP next asserts that in the License Renewal GEIS and in Part 51, Table B-1, the environmental impacts of spent fuel disposal have not been assigned “any level of significance.”⁶⁷ But this also is not an admissible issue. First, the Continued Storage GEIS in fact supplies levels of impact of storage in various areas for all time-frames. More importantly, SLOMFP itself cites the pertinent conclusion from Part 51, Table B-1, with respect to spent fuel disposal, adopted in connection with the Continued Storage Rule:

The Commission concludes that the impacts would not be sufficiently large to require the NEPA conclusion, for any plant, that the options of extended operation under 10 C.F.R. Part 54 should be eliminated.⁶⁸

The Commission reclassified the issue of waste disposal as a Category 1 issue. SLOMFP’s arguments about spent fuel disposal constitute a challenge to the regulations and therefore are not admissible in this proceeding.

SLOMFP next cites the Mr. Cooper’s Declaration for the proposition that the “socioeconomic consequences of disposing of spent fuel are also likely to be extremely high.”⁶⁹

⁶⁵ See, e.g., Continued Storage GEIS, NUREG-2157, at xxx and xlviii.

⁶⁶ See also 10 C.F.R. Part 51, Table B-1 (as amended, 79 Fed. Reg. at 56263) (onsite storage of spent nuclear fuel is a Category 1 issue).

⁶⁷ Motion at 10.

⁶⁸ 79 Fed. Reg. at 56263.

⁶⁹ Motion at 11.

Putting aside that the license renewal ER is not (and need not be) an environmental report for a high level waste repository, Mr. Cooper’s analysis is focused on demonstrating that the economic “costs of managing spent nuclear fuel are likely to be quite large in absolute value, running to hundreds of billions of dollars.”⁷⁰ But economic costs are beyond the scope of the license renewal review as discussed above.⁷¹ Moreover, the costs of interim storage and disposal are already addressed by the Nuclear Waste Policy Act.⁷²

The NRC also addressed Mr. Cooper’s comments regarding the economic costs of waste management in the Continued Storage GEIS. In his comments in the Continued Storage rulemaking, re-filed here, he suggested “that the costs of waste management would significantly change the costs of nuclear power in relation to other power options, making nuclear power a less attractive option, and possibly the least attractive option.”⁷³ The NRC disagreed with the comment and found the comment to be outside the scope of the Continued Storage rulemaking and GEIS.⁷⁴ The generic issue is not litigable here.

SLOMFP next asserts that, because of license renewal, decommissioning costs will rise — due to the increased amount of spent fuel generated and due to increased decommissioning costs over time.⁷⁵ This again is an economic issue outside the scope of this proceeding. The

⁷⁰ *Id.*

⁷¹ 10 C.F.R. §§ 51.53(c)(2) and 51.95(c)(2).

⁷² 42 U.S.C. §§ 10131(b)(4), 10222.

⁷³ Continued Storage GEIS, Appendix D, at D.2.42.5.

⁷⁴ *Id.*

⁷⁵ Motion at 11.

environmental impacts of decommissioning are addressed in the PG&E ER (summarized in Table 8-1), and SLOMFP does not challenge those conclusions.

Finally, SLOMFP challenges “characterizing the human health and socio-economic impacts of renewing the Diablo Canyon operating license as ‘small,’ without acknowledging that this assessment is based on probabilistic risk estimates that are fraught with uncertainty.”⁷⁶ However, the NRC has made a generic determination that “probability-weighted” impacts of severe accidents are small for all plants (only SAMAs are a Category 2 issue).⁷⁷ This approach has been upheld in the courts.⁷⁸ There is no admissible issue on this point.

At bottom, SLOMFP’s proposed Contention B amounts to an argument against nuclear generation under a renewed license based on purported risks, impacts, and costs. However, SLOMFP is raising issues that have been addressed by generic regulations and generic environmental impact statements that cannot be re-litigated in this proceeding. And SLOMFP is again raising economic matters related to whether the option of extended operation should be exercised (as opposed to retained). This is an issue appropriate for a State regulatory forum, not the NRC. The NRC license renewal rule explicitly reflects that the NRC is not the forum for an energy planning decision on whether a plant will continue to operate during the renewed license term.

⁷⁶ Contention at 12.

⁷⁷ 10 C.F.R. Part 51, Table B-1.

⁷⁸ *See, e.g., Carolina Env'tl. Study Group v. United States*, 510 F.2d 796, 799 (D.C. Cir. 1975) (“[I]t is entirely proper, and necessary, to consider the probabilities as well as consequences of certain occurrences in ascertaining their environmental impact.”); *City of New York v. DOT*, 715 F.2d 732, 752 n. 20 (2d Cir. 1983) (recognizing that an agency may decide “whether or not the gravity of the ‘worst case’ accident or other less serious accidents discounted by their improbability, presents an overall risk of sufficient significance to warrant an EIS.”). Both cases were cited as authority by the Court in *New York v. NRC*, 681 F.3d 471, 478-79 (D.C. Cir. 2012).

2. *Contention B Is Not Based on New Information and Is Untimely*

Proposed Contention B is also untimely for two reasons.

First, it is not focused on any new information in PG&E's February 2015 Revised ER. Instead, it challenges aspects of the alternatives analysis that were addressed in the original ER and therefore could have been challenged at the appropriate time. Specifically, proposed Contention B challenges (in varying degrees) the following issues previously addressed in the ER:

- The environmental impacts of the proposed action in Tables 8.1 and 8.2 of the ER;
- The impacts and costs of waste management;
- The impacts and costs of spent fuel disposal;
- The costs of decommissioning; and
- The impacts of severe reactor accidents.

However, there is not any new information on any of these issues contained in the Revised ER (as evidenced, for example, by an easy review of the redline changes included in Table 8.1 in the Revised ER). SLOMFP has not shown why its proposed contention could not have been filed based on the original ER. In fact, the only new information on these issues arising in the interim has been the issuance of the Continued Storage Rule and GEIS. However, that development bars SLOMFP's waste management issues from this proceeding as discussed above.

Second, the proposed contention is based entirely on Mr. Cooper's Declaration. That declaration itself is not new information. It is a rehash of his comments filed with the NRC as part of the Continued Storage rulemaking in December 2013 and his comments filed in an Environmental Protection Agency matter in November 2014. (Both of these were also filed by SLOMFP as support for its contentions here.) PG&E's ER update does not create a second bite at the apple with respect to contentions on old issues and does not re-set the timeliness clock for new

contentions based on previously existing information. Proposed Contention B is untimely as well as inadmissible.

CONCLUSION

For the reasons discussed above, the Motion should be denied. The proposed contentions are not admissible in this license renewal proceeding.

Respectfully submitted,

/s/ signed electronically by

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Executed in accord with 10 C.F.R. 2.304(d)

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AND ELECTRIC COMPANY

Dated at Washington, District of Columbia
this 1st day of May 2015

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:)	
)	
PACIFIC GAS AND ELECTRIC)	Docket No. 50-275-LR
COMPANY)	Docket No. 50-323-LR
)	
(Diablo Canyon Power Plant, Units 1 and 2))	

CERTIFICATE OF SERVICE

I hereby certify that copies of “PACIFIC GAS AND ELECTRIC COMPANY’S ANSWER OPPOSING PROPOSED ENERGY ALTERNATIVES CONTENTIONS” in the captioned proceeding have been served via the Electronic Information Exchange (“EIE”) this 1st day of May 2015, which to the best of my knowledge resulted in transmittal of the foregoing to those on the EIE Service List for the captioned proceeding.

Respectfully submitted,

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