

not be considered for any license renewal proceeding. *Id.* NRC observed, based on the draft GEIS, that all plants had done sufficient analysis of severe accidents that it could conclude that their impacts were too small, when probabilities were considered, to warrant evaluating mitigation measures thus treating Limerick like all plants. *Id.* Proposed Action, Generic Environmental Impact Statement, Summary of Issues Analyzed in the GEIS at ¶ 9 and Proposed Table B. 1. ~~By not notifying the public that it was considering requiring a SAMA analysis for all plants but exempting Limerick, based on the 1989 SAMDA, from conducting a SAMA analysis, NRC did not comply with the notice requirements for a valid adjudication of rights with regard to Limerick (5 U.S.C. § 554(b)):~~

~~(b) Persons entitled to notice of an agency hearing shall be timely informed of—~~

- ~~(1) the time, place, and nature of the hearing;~~
- ~~(2) the legal authority and jurisdiction under which the hearing is to be held; and~~
- ~~(3) the matters of fact and law asserted.~~

~~*Id.* (emphasis added); see also 5 U.S.C. § 554(e)(2) (“The agency shall give all interested parties opportunity for . . . hearing and decision on notice and in accordance with sections 556 and 557 of this title [5 USCS §§ 556 and 557]”); *PSC of Ky. v. FERC*, 397 F.3d 1004, 1012 (D.C. Cir. 2005) (“The Due Process Clause and the APA require that an agency setting a matter for hearing provide parties ‘with adequate notice of the issues that would be considered, and ultimately resolved, at that hearing.’ This requirement ensures the parties’ right to present rebuttal evidence on all matters decided at the hearing.” (Citations omitted)).~~

~~Nor could the statement by the Commission in the SOC constitute a rule making by the Commission since that statement, purporting to determine the legal sufficiency of the Limerick~~

~~SAMDA for purposes of § 51.53(c)(3)(ii)(L), was not part of the notice issued by the Commission when it proposed the rules it eventually adopted and thus it would be in violation of 5 U.S.C. § 553(b) which requires that:~~

~~(b) General notice of proposed rule making shall be published in the Federal Register, unless persons subject thereto are named and either personally served or otherwise have actual notice thereof in accordance with law. The notice shall include—~~

- ~~(1) a statement of the time, place, and nature of public rulemaking proceedings;~~
- ~~(2) reference to the legal authority under which the rule is proposed; and~~
- ~~(3) either the terms or substance of the proposed rule or a description of the subjects and issues involved.~~

~~*Id.* (emphasis added); see also *Telecommunications Research & Action Center v. FCC*, 800 F.2d~~

~~1181, 1186 (D.C. Cir. 1986) (“Before an agency may adopt a substantive rule, it must publish a notice of the proposed rule and provide interested persons an opportunity to comment.”~~

~~(Citations omitted)).~~

It is ironic that Exelon and NRC Staff now argue that a statement made by the Commission in the SOC for the license renewal environmental regulations, constitutes a binding determination in this individual licensing proceeding on the issue of whether the SAMDA for Limerick was, or was not, legally sufficient to meet 10 C.F.R. § 51.53(c)(3)(ii)(L) or whether it needed to be updated with new and significant information. Reliance on a statement in the Commission’s Statement of Consideration to bar an actual adjudication in the future is akin to the legal violation that resulted in the Commission being compelled to conduct site-specific SAMA reviews for operating license proceedings. See *Limerick Ecology Action v. NRC*, 869 F.2d 719, 741 (3rd Cir. 1989)(NRC must consider SAMDAs in individual operating license

2) Exelon's population figures are unreasonable when compared to current best population estimates for the license renewal period

NRDC's population arguments constitute new and significant information. In defending the inaccurate population estimates used in the 1989 SAMDA and the ER update of those numbers, Exelon argues that the total population for the 50-mile area is actually 2.5% less than those projected in the ER for 2030. Exelon Answer at 38. ~~But that argument misses the central point of NRDC's challenge. Since post-accident consequences are dependent on the person-remns of exposure, and since a significant component of the human exposure, i.e. collective dose, is expected within 10 miles of the plant, the key figure is the population within that 10-mile zone. NRDC E Declaration at ¶¶ 22-30. As NRDC demonstrates, and Exelon does not rebut, the population in that most vulnerable zone is substantially underestimated in the 1989 SAMDA and the ER update, thus substantially understating the impact of a severe accident. *Id.* Exelon also claims that it is not required, nor does any guidance provide, that it should do more than present a simplistic population projection without regard for transient populations. Exelon Answer at 40-41. However, NEI 05-01 (Rev. A) Severe Accident Mitigation Alternatives (SAMA) Guidance Document ("NEI Guidance") at 13, 16-17¹², guidance adopted by the NRC Staff (74 Fed. Reg. 45466 (Notice of Availability of the Final License Renewal Interim Staff Guidance LR-ISG-2006-03: Staff Guidance for Preparing Severe Accident Mitigation Alternatives Analyses) (Aug. 14, 2007)) includes the following:~~

Transient population included in the site emergency plan should be

¹² NRDC does not contend that the NEI guidance document, or any other guidance document, like NUREG-1437, the GEIS, is controlling. However, those guidance documents do provide support for certain propositions, some of which Exelon relies upon and some of which NRDC relies upon. The hearings and this Board's final decision will determine who is right.

those bases. Those Exelon arguments are addressed *supra* in the discussion of Contention 1-E and are incorporated here by reference.

4. Contention 3-E Is Admissible

NRDC's Contention 3-E rests not on an attempt to reclassify an issue which is Category 1 into a Category 2 issue nor does it demand that Exelon do "*another* SAMA analysis" (Exelon Answer at 17 (emphasis in original)). Rather NRDC alleges that there has never been an analysis of severe accident mitigation alternatives for Limerick that meets the requirements of 10 C.F.R. § 51.53(c)(3)(ii)(L) and that the 1989 SAMDA analysis upon which Exelon relies does not meet the regulatory standard to exempt the issue of severe accident mitigation alternatives from consideration in this license renewal proceeding. ~~The applicable standard for application of the exemption language in 10 C.F.R. § 51.53(c)(3)(ii)(L) is contained in 10 C.F.R. § 51.53(c)(3)(iii) which provides:~~

~~The report must contain a consideration of alternatives for reducing adverse impacts, as required by §51.45(e), for all Category 2 license renewal issues in appendix B to subpart A of this part.~~

~~*Id.* Since severe accident mitigation alternatives are Category 2 issues, Exelon must demonstrate that it has included, by reference or otherwise, an adequate analysis of severe accident mitigation alternatives. Exelon has failed to make that demonstration.~~

a. Whether an issue qualifies for exemption from being addressed in the ER is a legitimate contention in a license renewal proceeding

Exelon claims that if an issue is precluded by Part 51 from the ER because it is classified as a Category 1 generic issue *or for some other reason*, a challenge to the claim that it qualifies for exclusion is beyond the reach of the license renewal hearing. Exelon Answer at 28-34.

currently supplied by LGS.” Paine Declaration at 3-4. He then contends that the “reasonably foreseeable system resources” available under no action include, *in addition to* those reviewed by the Exelon as reasonable alternatives to extended operation of LGS, “all forms of Demand Side Management (DSM), waste heat co-generation, combined heat and power, and distributed renewable energy resources.” He contends that the ER’s analysis of the No Action Alternative “fails to consider the environmental impacts of this reasonably foreseeable portfolio of PJM system resources,” and thereby “fails to make the required comparison between the environmental impacts of No Action and the continued operation of LGS for an additional 20 years.” Paine Declaration at 4.

The GEIS clearly suggests and sanctions this approach to analysis of the No Action Alternative. Section 8.1 of the GEIS includes a brief, but highly instructive discussion of “conservation and power import alternatives:”

Although these alternatives do not represent discrete power generation sources they represent options that states and utilities may use to reduce their need for power generation capability. *In addition, energy conservation and power imports are possible consequences of the no-action alternative.* GEIS at 8-2 (emphasis added).

~~The GEIS outlines the necessary scope of environmental analysis for the no action alternative as follows:~~

~~[T]he no action alternative is denial of a renewed license. Denial of a renewed license as a power generating capability may lead to a variety of potential outcomes. In some cases denial may lead to the selection of other electric generating sources to meet energy demands as determined by appropriate state and utility officials. In other cases, denial may lead to conservation measures and/or decisions to import power. In addition, denial may result in a combination of these different outcomes. Therefore, the~~

~~environmental impacts of such resulting alternatives would be included as the environmental impacts of the no-action alternative.” GEIS at 8-2 (emphasis added).~~

~~The GEIS clearly construes the requirements for analysis of the No Action Alternative in a manner that supports NRDC’s contention.~~

2. Exelon’s Mentioning of Various Issues in its Discussion of the No Action Alternative and its Inaccurate or Incomplete Analysis of Those Issues Does Not Constitute an Adequate Analysis

Exelon and Staff assert that NRDC has ignored the analyses contained in the ER that have been incorporated by reference into the No Action Alternative analysis. Far from ignoring it, the Paine Declaration has eviscerated it.

NRDC has never asserted that the ER did not consider *some* of these “other electric generating sources”—which are incorporated by reference in the six paragraphs (slightly more than a page) that comprise the ER’s entire discussion of the No Action Alternative. ER at Sec. 7.1. Four of these six paragraphs, however, are devoted to a discussion of the treatment of decommissioning impacts, which discussion is entirely given over to cross-referencing other generic NEPA analyses, and concludes, “decommissioning activities and their impacts are not discriminators between the proposed action and the no-action alternative.” ER at 7-3.

This effectively reduces the ER’s discussion of “discriminators between the proposed action and the no-action alternative” to two short paragraphs. These, however, are devoted to explaining Exelon’s erroneous equation of the No Action Alternative with “replacing the generating capacity of LGS,” followed by *one sentence* that outlines three possibilities for how this “replacement” could be accomplished, namely, by: “(1) building new base-load capacity using energy from coal, gas, nuclear, wind, solar, other sources, or some combination of these; (2)

purchasing power from the wholesale market; or (3) reducing power requirements through demand side reduction.” ER at 7-3.³⁷ ~~Items 1, 2, and 3 are presented and analyzed as mutually exclusive options, whereas in reality, in the event of the denial of LGS license renewal (the GEIS definition of “no action”) the response of the electricity market represented by the PJM Interconnection would, or reasonably could, involve various combinations of these resources, as described in the GEIS.~~

It is readily apparent that the ER’s consideration of these options not only omits analysis of the “reasonably foreseeable portfolio of PJM system resources” described by Mr. Paine in his declaration, ~~but also fails to consider a “combination of these different outcomes” as called for in the GEIS. GEIS at 8-2.~~ This is easily demonstrated by examining the cross references included in the ER’s exceptionally truncated consideration of the No Action Alternative, which reference ER Section 7.2.1, and Section 7. 2.2.

3. NRC and Exelon Answers Ignore the ER's Failure to Consider Reasonable Consequences in the Event License Renewal Is Denied Which Do Not Require Centralized Generation

NRDC has no objection to the judicious use of cross-referencing to eliminate duplicative presentation of data or descriptive matter already included elsewhere, but do object to the use of cross-referencing that results, as it has in this case, in shortchanging an important part of the

³⁷ Exelon and NRC Staff insist that “need for power” is not a legitimate issue in license renewal and cite to 10 C.F.R. § 51.53(c)(2). However, a large portion of the analysis of the No Action Alternative involves Exelon’s handwringing about how the power supplied by Limerick to meet a current power need, will be supplied in the future. If Exelon chooses to rely on this “need for power” there is no lawful basis to preclude NRDC from challenging it. At this point such a challenge is not necessary since Exelon has not provided an analysis of the No Action Alternative that addresses the likely consequences of license renewal denial and thus has not relied upon any alleged need for power justification for rejecting the No Action Alternative.

NEPA analysis. Unfortunately, the cross-referenced material does not serve to satisfy consideration of the No Action Alternative, because “for the purposes of this report, alternative generating technologies were evaluated to identify candidate technologies that would be capable of replacing the LGS nominal total net base-load capacity of 2,340 MWe at the time the LGS Unit 1 license expires in 2024.” ER at 7-5.

~~While employing this CEIS-sanctioned screen to identify supposedly “reasonable” generating alternatives to LGS is problematic in its own right—and leads to several “hypothetical” and highly implausible NEPA alternatives for LGS baseload replacement—using this screen to delineate the impacts of the No Action Alternative results in the arbitrary and capricious exclusion of a wide portfolio of *decentralized and distributed* generation and DSM resources, as outlined by Mr. Paine in his declaration. Unlike the renewable energy alternatives considered in the ER, these resources are not “hypothetical” analytical constructs, and actually exist today as part of the electricity resources available in the PJM Interconnection’s wholesale power market. They are reasonably assessed as capable of playing a larger role in the future. Moreover, in the case of no action, various combinations of these resources, with or without power imports, plausibly *could* evolve by 2024 to effectively “replace” the energy services—not necessarily the “net base load capacity”—now provided by LGS, but the ER omits analysis of this scenario, in clear contravention of the CEIS, which states, “energy conservation *and* power imports are possible consequences of the no action alternative.” CEIS at 8-2 (emphasis added).~~

The ER’s analysis of reasonable alternatives rejects DSM, as it is apparently entitled to do under prior ASLB Board decisions, as an unreasonable alternative to LGS license extension. Exelon is

not entitled to import this rejection into the analysis of the No Action Alternative, ~~which is governed by other GEIS determinations.~~

The DSM energy savings scenario is no less reasonable than the ~~massive but wildly unrealistic centralized~~ renewable energy schemes concocted by Exelon for the sole purpose of performing pro-forma NEPA analyses. ~~In fact, the GEIS recognizes decentralized energy schemes but Exelon ignores them in its analysis of the No Action Alternative:~~

~~Every technology discussed in this section could generate power in much smaller facilities than 1000 MW(e) in dispersed locations throughout a utility's service area. Typically, conservation or demand side alternatives and renewable technologies lend themselves best to relatively small facilities, whereas conventional nonrenewable technologies are suited more for large central generating stations. Numerous exceptions to these generalizations exist or are feasible. Thus multiple alternatives could be selected to replace a single nuclear plant." GEIS at 8-16 (emphasis added).~~

~~The GEIS goes on to postulate that "a utility and state public utility commission could agree" that a "combination" of advanced fossil generation (coal and combined cycle gas), conservation, purchased power, wind power, and municipal solid waste combustion "would be the preferred set of alternatives to replace a single nuclear plant." GEIS at 8-16. But as Mr. Paine contends in his declaration, such objectively reasonable combinations of demand side alternatives and dispersed renewable energy technologies with conventional nonrenewable technologies are neither considered in the discussion of the No Action Alternative, nor included in the cross-referenced but skewed discussion of reasonable alternatives for replacing the baseload generating capacity of LGS. Paine Declaration at 3-4.~~

4. The Combinations of Electricity Resources Cited by NRC Staff and Exelon Answers Are Neither Feasible Nor Likely Consequences of License Renewal Denial

The ER discussion includes consideration of only two hypothetical combinations of electricity resources that are deemed “reasonable” by the Exelon: in the first, “LGS base-load capacity of 2,340 MWe would be replaced by one 2,308 MWe wind farm (with a 140 MWe gas-fired combined-cycle backup unit) and three 1,000 MWe PV solar facilities (each with a 100 MWe gas-fired combined-cycle backup unit).” ER at 7.2.1.6; in the second, 4400 MWe of new on-shore and offshore wind capacity would be combined with 2340 MWe of compressed air energy storage “to provide a nearly constant output of 2,340 MWe from the combined wind and CAES facilities.” ER at 7.2.1.6. Neither of these analyzed combinations incorporate the reduction in new generating capacity requirements afforded by DSM, or the distributed implementation of renewable and other energy technologies cited by Mr. Paine in his declaration, or the “energy conservation and/or power imports” cited by the GEIS as germane to consideration of the No Action Alternative. Nor does Exelon offer an analysis to demonstrate that its chosen combination of generation sources is a likely consequence of license renewal denial. So this cross-referenced analysis cannot serve as a proxy for the missing analysis identified in the Paine Declaration.

~~Moreover, several of the cross-referenced “reasonable alternatives,” cited by both Exelon and NRC Staff as satisfying the requirement for analysis of the No Action Alternative, are in fact patently unreasonable, and plainly violate NRC Staff determinations in the GEIS that “a reasonable set of alternatives should be limited to ... electric generation sources that are technically feasible and commercially viable”, and that “...the consideration of alternative energy sources in individual license renewal reviews will consider those alternatives that are~~

~~reasonable for the region, including power purchases from outside the applicant's service area..." CEIS (NUREG 1437), as cited in ER at 7.2 (emphasis added).~~

~~Exelon's ER alternatives analysis repeatedly violates these criteria. To take but one example, Exelon states that, "for the purposes of this environmental report, it is assumed that a solar plant using PV generation with no firming capacity could be a reasonable alternative" for replacing LGS base load generating capacity. ER at 7.13. However, a massive solar plant of the type described, with inherently intermittent supply and without associated energy storage or other "firming capacity," could not substitute on the grid for the base load capacity currently provided by LGS. This so-called "reasonable alternative" is utterly implausible and exposes the lack of serious consideration that Exelon gives to its alternatives analysis.~~

~~The environmental impacts of the sham solar alternative are then described as follows:~~

~~Replacement of the LGS approximate annual average net base load generating capacity of 2,340 MWe, assuming the current day [PJM] capacity credit for solar generating capacity would require dedication of about 40,000 hectares (98,000 acres) of land for PV and about 62,200 hectares (154,000 acres) of land for CSP. In comparison, the LGS plant site occupies approximately 261 hectares (645 acres), and no new land development would occur as a result of license renewal.~~

~~No existing power plant sites in the ROI are large enough to accommodate either type solar plant of the generating capacity needed to replace the LGS base load generation capacity. Accordingly, any solar plant constructed to replace LGS would have to be located on a greenfield site. Assuming that sufficient land could be acquired for a solar generation facility, development of the greenfield site would cause much larger land use impacts in comparison to renewal of the existing LGS operating licenses. Overall, land use impacts from both CSP and PV solar energy development is characterized LARGE.~~

~~Much of the land area occupied by either a CSP or PV generation facility would be cleared and maintained as an~~

~~unvegetated or sparsely vegetated surface throughout the life of the facility. This would create an extensive loss of habitat for terrestrial, avian and plant communities.”~~

~~This highly implausible rendition of the PV solar power alternative is not remotely “reasonable for the region” nor would it be “commercially viable,” now or in the future because the land requirements and cost alone, in the densely populated Mid Atlantic region served by LCS, rule it out. The GEIS itself notes that solar and other renewable energy alternatives “lend themselves best to relatively small facilities” (GEIS at 8-16) but Exelon eschews such reasonable alternatives in favor of those whose adverse impacts are easily identified.~~

~~As for the postulated Concentrating Solar Power (CSP) deployment, it is not merely unreasonable for the region and commercially non-viable, but *technically infeasible* as well – yet another violation of the GEIS criteria. Exelon offers no basis to believe that any PJM member utility or independent merchant power generator has proposed or would propose deployment of the massive CSP plant described in the ER, given the comparatively low levels of direct normal solar radiation available in the ROI served by PJM. ER at 7-13. In short, Exelon and NRC Staff assertions that the missing analysis of reasonable consequences of the No Action Alternative can be found in the Alternatives portion of the ER is demonstrably wrong.~~

5. The NRC Staff and Exelon Defense of the ER’s Vision for the Future Development of Energy Supplies and DSM in the Exelon Service Area Is Unrealistic and Unsupported

The NRC Staff and Exelon answers assert that the ER supplies, by reference, a legally sufficient proxy analysis of the environmental impacts of the No Action Alternative. However, as alleged in the Paine declaration, the ER fails to demonstrate how any of these alternatives

fairly represent the way renewable energy, DSM, and other distributed generation assets are deployed and integrated today on the PJM Interconnection, ~~nor do they plausibly represent the way in which these resources will be deployed and integrated in the future if relicensing is denied.~~ Therefore they cannot possibly serve as a suitable proxy for how the LGS load would be served in the event of the denial of a renewed operating license for LGS, and their environmental impacts do not fairly represent the impacts that would flow from that decision.

~~In the introduction to its alternatives analysis, Exelon states, “[i]t must be emphasized, however, that all scenarios are hypothetical.” ER at p. 7-10. Rather than resting on “hypothetical scenarios,” analysis of the No Action Alternative, to the extent feasible, must reflect the actual environmental impacts of existing, planned, proposed and “reasonably foreseeable” PJM electricity resources that would, or reasonably could, be made available by 2024 in the event the LGS operating license is not renewed. As Exelon itself admits, it has no “current plans” to build any of the hypothetical, impractical, and uneconomic “base load” solar, wind or hybrid solar-wind-gas power plant alternatives described in the ER, and neither does it provide any basis to believe any other member company of the PJM Interconnection would do so. ER at p. 7-10.~~

~~As noted above, the ER posits the need for gratuitously massive solar and wind power plants (e.g. 4400 MW) to replace the baseload generating capacity represented by LGS. When misapplied to the No Action Alternative, this arbitrary supposition also has the unfortunate effect of obscuring and distorting the view of related, environmentally protective energy storage technologies.~~

~~Demonstration projects have been deployed for varying other applications, but, there are no current applications or demonstration studies of battery storage systems that approach the~~

~~reserve capacity required for balancing the output from a wind or solar generation power plant of the size necessary to replace the LGS approximate annual average net base load generating capacity of 2,340 MWe (NREL, 2010a). Because this method for balancing intermittent output from wind and solar generation facilities has not been demonstrated, Exelon Generation does not consider it to be a reasonable firming capacity method and, thus, impacts of combining it with wind or solar generation are not evaluated further. ER at p. 7-7, emphasis added.~~

~~However, as the ER itself describes, several types of battery storage systems are available or under development that can support less massive renewable energy deployments. ER at p. 7-7. These are being designed to support “dispersed” and modular applications of solar and wind technologies, as discussed in the GEIS. GEIS at 8-16. Exelon provides no analysis of the availability or likelihood that such systems can or will be deployed within the area served by PJM, and therefore comprise a reasonably foreseeable component of the PJM electricity resources that would be available in 2024, under the No Action Alternative, to assume a portion of the system load now served by LGS.~~

The no action analysis should fully examine, as initially outlined in the Paine Declaration, the likely consequences of the No Action Alternative and explore and project the growth and future balance of PJM system electricity resources, including DSM and various forms of distributed generation, that are likely to exist if relicensing is denied: (a) to comply with existing PJM-area state renewable energy mandates, including but not limited to those state mandates described in Section 7.2.1 of the ER; (b) in response to varying plausible assumptions regarding the evolution of natural gas prices and other relevant factors, such as technological change and power imports from outside the region, and (c) in response to provision or removal of federal and state incentives, such as investment and production tax credits for certain clean energy

technologies.

Such an analysis would allow the Commission to fairly balance the likely environmental consequences of the No Action Alternative against relicensing to determine which is preferable, ~~thereby providing a *bona fide* basis for the Commission to determine that it “has taken all practicable measures within its jurisdiction to avoid or minimize environmental harm from the alternative selected, and if not, to explain why those measures were not adopted”. 10 C.F.R. § 51.103(a)(4). The ER fails to provide a basis for NRC to determine whether it has taken “all practicable measures within its jurisdiction [including license renewal denial] to avoid or minimize environmental harm”.~~

6. The NRC Staff Answer Seriously Distorts the Paine Declaration

In a number of instances, the NRC Staff Answer contains misleading and inaccurate characterizations of the statements made by Mr. Paine in his Declaration: characterizations that in fact form the basis for the NRC Staff Answer and that could, if not corrected, carry over in the NRC Staff Draft Supplemental Environmental Impact Statement (“DSEIS”). Nine of these mischaracterizations are addressed below, juxtaposing the NRC Staff assertion and the relevant portions of Mr. Paines Declaration or the Intervention Petition.

a. NRC Answer erroneously claims that NRDC seeks analysis of an excessive number of No Action Alternative consequences

NRC Staff Answer at 41 states “[m]oreover, Mr. Paine claims without factual support that the Applicant must analyze ‘all forms of Demand Side Management (DSM), waste heat cogeneration, combined heat and power, and distributed renewable energy sources in addition to the alternatives put forth in the ER.’”

Exelon's or NRC's obligation in this regard is "unlimited"-NRC Staff cites the 1996 GEIS determination that, "While many methods are available for generating electricity, and a huge number of combinations or mixes can be assimilated to meet a defined generating requirement, such expansive consideration would be too unwieldy to perform given the purposes of this analysis."

However, as noted previously above, neither Mr. Paine's declaration nor the contention it supports seek an analysis of "every conceivable alternative to its proposed action." ~~On the contrary, NRDC has already noted its view that several of the "conceivable alternatives" examined by the Applicant are, in the Applicant's own words, so "hypothetical" as to be utterly implausible, and therefore not "feasible" and indeed, "speculative".~~ The cases cited do not involve comparable facts or contentions to those in the Paine Declaration. For example, *Louisiana Energy Services, LP*, CLI-98-3, 47 NRC at 97 describes a situation in which an applicant planning to build an enrichment plant cross-references an earlier FEIS chapter on environmental consequences of the Proposed Action, and then declares the impact of no action to be "that all the impacts described there [in the cross-referenced material] would not occur if the license were denied." The factual situation is actually reversed in the instant case. Exelon itself has declared, "The No-Action alternative is defined as ...replacing the generating capacity of LGS [and decommissioning the LGS facility]," thereby triggering, not the analogized absence of impacts, but a different set of impacts under the no-action alternative. ER at 7-3.

Contention 4-E does not demand analysis of "a huge number of combinations or mixes" of "methods...for generating electricity," but rather seeks an analysis of the range of likely environmental impacts for a reasonably foreseeable range of electricity resources in PJM's .

electricity portfolio at two distinct periods of time, following LGS Unit 1 license expiration in 2024 and LGS Unit 2 license expiration in 2029. Paine Declaration at 3-4. Both target dates for the requested analysis are well within the time horizon of the proposed action, which runs to 2049, and are therefore “reasonable” in NEPA terms.

c. The NRC Answer arbitrarily limits a reasonable set of alternatives.

The NRC Staff response cites the GEIS statement that “a reasonable set of alternatives should be limited to single discrete electric generation sources and only electric generation sources that are technically feasible and commercially viable” and asserts that NRDC is violating that guidance. ~~However, as already noted, by postulating the deployment of massive 98,900–154,000-acre solar plants on land cleared for this purpose within the ROI for Limerick, it is the ER's that violates the “technically feasible” and “commercially viable” criteria for selection of reasonable alternatives set forth in the GEIS, a failing not noted by NRC Staff. In addition, the analysis requested by NRDC of reasonably foreseeable PJM system resources under the No Action Alternative actually does conform to these criteria because electricity resources, whether they be DSM, distributed generation, or conventional central station generating assets, can be included in the PJM portfolio only if they are “technically feasible” and “commercially viable.”~~ But the NRC Staff response goes on to err in yet another way. The quoted sentence, from the Introductory section of the GEIS discussion on “Alternatives to License Renewal,” makes clear that this GEIS determination applies to the consideration of reasonable alternatives “to meet a defined generating requirement,” - i.e. as defined by the base load capacity of LGS-and not to the analysis of the No Action Alternative, which by definition does not have a “defined generating requirement” associated with it. In the immediately preceding paragraph, which defines the No

Action Alternative as “the denial of a renewed license,” the GEIS states:

In general, if a renewed license were denied, a plant would be decommissioned and other electric generating sources would be pursued if the power were still needed. It is important to note that NRC's consideration of the No Action Alternative does not involve the determination of whether any power is needed or should be generated. The decision to generate power and the determination of how much power is needed are at the discretion of state and utility officials.

GEIS at 8.1.³⁸ As noted above, the ER contravenes this GEIS determination by “defining” the No Action Alternative as also providing “a large amount of base load power” to “replac[e] the generating capacity of LGS”, another failing of the ER noted by NRDC and not identified by NRC Staff.

~~Finally, the GEIS section specifically dedicated to consideration of the No Action Alternative does not contain or repeat the NRC Staff cited guidance limiting NRC's consideration of this alternative to “single discrete electric generation sources.” Instead, it refers to the latter alternatives as “possible actions resulting from the denial of a renewed license” that “represent[s] additional impacts of the no action alternative.” GEIS at 8.2. But, as previously noted, power plant alternatives are to be considered “possible” actions only if, per the GEIS, they are also “technically feasible,” “commercially viable”, and “reasonable for the region,” which, as we have already noted, several of them are not.~~

³⁸ At 16 years, the GEIS analysis is showing its age, as the “discretion of state and utility officials” has been replaced by varying degrees in some areas of the country, including the mid-Atlantic ROI by “Independent System Operators” who continually assess future electricity needs and manage competitive wholesale markets for delivering the electricity resources to meet those needs. All of which is to say, in the ROI for this facility, the analog of what was once the “state and utility official” view of future power needs is now a continually evolving set of forecasts and responsive electricity resource portfolios assembled by PJM using a competitive wholesale market mechanism and not directly regulated by state and utility officials.

demonstrated in Paine Declaration and in reply to inaccurate allegations by Exelon and NRC Staff that the ER fails at numerous points to comply with the determinations of the 1996 GEIS, and more broadly, “misapplies” these determinations to the detriment of adequate consideration of the No Action Alternative, precisely as alleged in the Paine Declaration.

- e. **The NRC Staff in fact qualifies its consideration of the No Action Alternative in a manner that is consistent with NRDC’s requested analysis while Exelon ignores findings of the GEIS**

NRC Staff response states, “It is not unreasonable to assume for the purpose of considering the no-action alternative that power would need to be replaced in some fashion.” NRC Staff Answer at 47. We agree - the added qualifier “in some fashion” leaves open the very possibilities raised by Mr. Paine in his declaration, but this qualifier is not present in the Applicant’s definition of no action, which as we have noted above, defines the No Action Alternative as providing “a large amount of base load power” to “replac[e] the generating capacity of LGS.” DSM measures, for example, are dismissed by the Applicant as a reasonable consequence of no action, ~~either alone or in combination with distributed renewable generation or other electricity resources, such as natural gas-fired generation or Canadian hydropower imports,~~ to “replacing the generating capacity of LGS.” According to the ER, “Exelon Generation does not consider DSM to be a viable supply of replacement base-load electricity. Hence, DSM does not represent a reasonable alternative to renewal of the LGS operating licenses.” ER at 7-17. ~~But this finding contravenes the findings of the GEIS, which “assumes that conservation technologies produce enough energy savings to permit the closing of a nuclear plant” (GEIS at 8.3.14),~~ yet another instance in which NRC Staff distorts the Paine Declaration and Contention 4-E to make its case against NRDC intervention, while ignoring blatant

violations of NRC guidance, violations that NRDC identified in its Intervention Petition.

f. The NRC Staff's list of deficiencies is ill-founded and goes to the merits of NRDC's contention

NRC Staff provides a list of alleged deficiencies in the Contention 4-E and the supporting Paine Declaration. NRC Staff Answer at 50-51.

As the preceding discussion demonstrates these charges are ill-founded. First, NRC Staff, and Exelon, would have NRDC prove its case as a precondition to admission of the Contention, a clear violation of the controlling Commission precedents cited above. Second, NRDC identified the portions of the ER that failed to provide the necessary analyses, identified what those analyses should include, offered an Expert Declaration to support that statement and cited to portions of the GEIS that Exelon failed to follow. The discussion above in response to numerous inaccuracies by Exelon and NRC Staff fully rebuts NRC Staff charges of inadequate support for Contention 4-E. In addition the NRC Staff Answer implicitly concedes the existence of a material dispute on these pages by noting that “other than to allege without support that the no-action alternative must include the ‘expected growth in demand side management and renewable energy sources,’” and “other than to argue in a conclusory fashion that the Applicant must model a likely evolution of electricity resources [without LGS license renewal] , NRDC does not identify any dispute with the ER's analysis of such resources”. But, contrary to NRC Staff's assertion, NRDC provided references to the GEIS that indicated that the very analysis not conducted by Exelon is required as part of the No-Action Alternative.

g. The NRC Staff wrongly charges that NRDC is seeking to compel applicant to implement demand side management

NRC Staff charges that nothing in the Paine Declaration “establishes that the Applicant

could implement demand side management in PJM”. NRC Staff Answer at 52.

Mr. Paine's declaration never makes this specific claim, limiting itself to making the reasonable allegation, based on the information from the company's website, that Exelon Generation Company’s characterization of its own capacities “is not a fair characterization of the business and abilities of the parent company, Exelon.” Moreover, his entire declaration speaks to the *analysis* of the combined impact of DSM measures within a broad portfolio of other electricity system resources, and not to who has or doesn’t have the corporate capacities to “implement” DSM.

h. The NRC Answer claims that NRDC fails to identify a dispute with the Exelon’s existing analysis of DSM

The NRC Staff Answer states: “The Applicant analyzes DSM and its potential as an energy alternative and concludes that DSM is not a viable option for supplying the base load electricity currently supplied by LGS. NRDC does not identify any dispute with the Applicant's existing analysis of DSM...” NRC Staff Answer at 52.

But the Paine Declaration does identify the flaw in looking at DSM as an alternative to “replace” the generating capacity of Limerick rather than as a reasonably foreseeable consequence of the No Action Alternative, and for the need to consider DSM in a portfolio context rather than in isolation. Paine Declaration at 2, citing to the GEIS. ~~The GEIS assumes conservation technologies produce enough energy savings to permit the closing of a nuclear plant. GEIS at 8.3.14.~~

i. The NRC Staff erroneously claims that Contention 4-E does not raise a material dispute because the application contains the missing information

The NRC Staff Answer states: “Contention 4-E does not raise a material dispute with the