

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

**BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

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**In the Matter of  
Luminant Generation Company, LLC  
Comanche Peak Nuclear Power Plant  
Units 3 and 4  
Combined License Adjudication**

**Docket Nos. 52-034 and 52-035**

**September 15, 2010**

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**INTERVENORS' RESPONSE TO LUMINANT'S MOTION FOR SUMMARY  
DISPOSITION OF CONTENTION 18 AND ALTERNATIVES CONTENTION A**

The Intervenors, pursuant to 10 C.F.R. 2.1205 and 10 C.F.R. 2.710, hereby respond to the Applicant Luminant's Motion for Summary Disposition of Contention 18 and Alternatives Contention A.

**Introduction**

The subject motion for summary disposition is, for the most part, a rehash of points and arguments raised by the Applicant Luminant in its objections to the admission of Contention 18 and Alternatives Contention A.<sup>1</sup> Substantively, there is little new information that the Applicant includes in its motion that was not covered in some form in its objections to any contentions that

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<sup>1</sup> See, for example, Lumiamnt's Answer Opposing New and Modified Contentions Regarding Alternative Energy Sources, February 4, 2010, pp. 5-7, regarding NEPA; pp. 20-26 regarding alternatives; pp. 29-31 regarding Contention 18.

raised issues regarding alternatives to Comanche Peak Units 3 & 4. The new information, such as the bounding cases, are defective both methodologically and analytically as discussed by Dr. Dean in his attached report.<sup>2</sup>

The primary arguments raised by Applicant are 1.) the land required for wind generation is large enough that it impinges on aesthetic considerations and 2.) the combination of alternatives is not proven. The Applicant has also posited two so-called bounding cases that attempt to apply alternatives to address the stated purpose of the proposed project, i.e., provide baseload generation.<sup>3</sup>

**The combination of alternatives both exists and is feasible.**

The Electric Reliability Council of Texas (ERCOT) functions to ensure “electricity transmission reliability by managing the incoming and outgoing supply of electricity over the grid. ERCOT monitors the flow of power and issues instructions to generation and transmission companies to maintain balance.”<sup>4</sup> The ERCOT system “is the membership-based, not-for-profit corporation, overseen by the PUC, that manages the flow of electric power, ensures transmission reliability, and serves as the central hub for retail transactions.”<sup>5</sup>

According to the Applicant

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<sup>2</sup> This response references Dr. Dean’s earlier report submitted in support of the alternatives contentions filed February 12, 2010, will be referenced as Dean I. The report prepared to address points raised by the subject motion for summary disposition will be referenced as Dean II.

<sup>3</sup> Pursuant to 10 C.F.R. 2.701(a) the Intervenors’ response to the Applicant’s fact statement is attached.

<sup>4</sup> Comanche Peak Environmental Report, §8.1.3, p.8.1-4 (hereinafter referenced as ER).

<sup>5</sup> Id. at p. 8.1-6.

ERCOT manages the flow of electric power to approximately 20 million Texas customers, representing 85 percent of the state's electric load and 75 percent of the state's land area (approximately 200,000 square miles [sq mi]). The ERCOT region is shown in Figure 8.1-1. As the ISO for the region, ERCOT schedules power on an electric grid that connects 38,000 miles of high-voltage transmission lines and more than 500 generation units. ERCOT also manages financial settlements for the competitive wholesale bulk-power market and administers customer switching for 5.9 million Texans in competitive choice areas (ERCOT 2007b). In 2006, the total electricity production in the ERCOT region was 305,692 gigawatt hours (GWh), including 89,855 GWh from Luminant. (ERCOT 2006a) (TXU Corp 2006).<sup>6</sup>

Hence, on any given day ERCOT manages the flow of electric power produced by over 500 generation units that include diverse fuel sources including natural gas, coal, nuclear, renewable, hydroelectric, geothermal and petroleum.<sup>7</sup> ERCOT manages the flow of electricity to maintain grid reliability through interconnections with utilities in Texas.<sup>8</sup> ERCOT functions as the independent system operator (ISO).<sup>9</sup> The ISO monitors the transmission network, ensures nondiscriminatory access to transmission and distribution systems and settles wholesale energy transactions.<sup>10</sup> As the ISO, ERCOT has the duty to deal with integrating various generation facilities into an interconnected system that ensures grid reliability and has been doing so since its formation in 1970. Prior to 1970, ERCOT's predecessor, the Texas Interconnected System (TIS) performed a similar function of operating an interconnected power system.<sup>11</sup>

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<sup>6</sup> Id. at p. 8.1-4.

<sup>7</sup> See Exhibit 27-6 at <http://www.window.state.tx.us/specialrpt/energy/uses/electricity.php>  
See also Energy Information Administration Texas profile at  
[http://tonto.eia.doe.gov/state/state\\_energy\\_profiles.cfm?sid=TX](http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=TX)

<sup>8</sup> ER, §8.1.3, p. 8.1-1.

<sup>9</sup> The ISO is required under Texas law. ER §8.1.2, p. 8.1-3

<sup>10</sup> Id.

<sup>11</sup> Id.

The Applicant has argued that the four-part combination of wind, solar, storage and natural gas “does not exist and has not been proven for producing baseload power.”<sup>12</sup> However, the combination of diverse generation sources currently included in ERCOT’s system is an example of how system operators already integrate the various sources to maintain grid reliability. Even storage is arguably already part of the grid in the form of the stored energy for hydroelectric and geothermal power. ERCOT foresees compressed energy storage (CAES) as a component of the future grid. And ERCOT has not disqualified inclusion of CAES on technical grounds.<sup>13</sup> In fact, ERCOT has concluded that CAES “can have a beneficial impact on deliverability of wind energy from West Texas by storing wind energy when wind is abundant and releasing that energy back to the grid when the transmission system is not congested.”<sup>14</sup>

For NEPA purposes NRC’s consideration of alternatives is limited to those that are reasonable. [Citizens For A Better Henderson v. Hodel, 768 F.2d 1051, 1057 \(9th Cir.1985\)](#) (emphasis added). See also [Piedmont Heights Civil Club, Inc. v. Moreland, 637 F.2d 430, 436 \(5th Cir.1981\)](#) (NEPA “requires consideration only of feasible, non-speculative alternatives.”) (citing cases); [Miller v. United States, 492 F.Supp. 956, 962–63 \(E.D.Ark.1980\)](#), *aff’d*, [654 F.2d 513, 514 \(8th Cir.1981\)](#). See generally [NRDC v. Callaway, 524 F.2d 79, 92 \(2d Cir.1975\)](#), [NRDC v. Morton, 458 F.2d 827, 834, 837 \(D.C.Cir.1972\)](#).<sup>15</sup> Alternatives are required to be

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<sup>12</sup> Motion for Summary Disposition, p.13.

<sup>13</sup> ERCOT Long-Term System Assessment, p. 38-39.

[http://www.ercot.com/content/news/presentations/2008/ERCOT\\_Long-Term\\_System\\_Assmt\\_Dec\\_2008.pdf](http://www.ercot.com/content/news/presentations/2008/ERCOT_Long-Term_System_Assmt_Dec_2008.pdf)

<sup>14</sup> *Id.* at Executive Summary.

<sup>15</sup> *In the Matter of Long Island Lighting Company* (Shoreham Nuclear Power Station, Unit 1), 33 N.R.C 61 at \*5 (1991).

feasible in order to warrant NEPA review.<sup>16</sup> Agency consideration of alternatives is reviewed under a “rule of reason.”<sup>17</sup>

The Applicant has conceded the point that the four part combination of wind, solar, storage and natural gas is a feasible and available method for producing baseload power in Texas.<sup>18</sup> However, the Applicant suggests that because the four part combination does not exist it is not proven it is, by implication, speculative alternative.<sup>19</sup> Under NEPA, environmental consequences of alternatives rejected in good faith as too remote, speculative, or impractical or ineffective need not be considered.<sup>20</sup>

In the instant case, proof of the feasibility of the four part combination is established in the makeup of the ERCOT grid, presently. And even if storage is not already part of the system, ERCOT’s system assessment expects its presence in the future and has not suggested any technical reason for its exclusion.<sup>21</sup> Dr. Ray Dean has also discussed the feasibility of the integration of CAES into the grid and sees no insurmountable technical obstacles related thereto.<sup>22</sup> There is no evidence cited by the Applicant that integration of the four part alternative is not feasible.

Under the National Environmental Policy Act (NEPA) a reasonable alternative is one that is non-speculative and bounded by feasibility.<sup>23</sup> In this case, the Applicant has not argued that the four part combination is not feasible; in fact, it has conceded feasibility of its component

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<sup>16</sup> *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 551 (1978)

<sup>17</sup> *Westlands Water District v. U.S. Department of Interior*, 376 F.3d 853, 868 (9th Cir. 2004)

<sup>18</sup> Motion for Summary Disposition, p. 13.

<sup>19</sup> Applicant’s statement of facts, p.5, Section I. F. 2-4.

<sup>20</sup> *Fuel Safe Washington v. F.E.R.C.*, 389 F. 3d 1313, 1323.(10<sup>th</sup> Cir. 2004)

<sup>21</sup> See referenced material at fns. 13-14, supra.

<sup>22</sup> See FN. 11, supra. and Ray Dean Report, p. 7. (Attached and designated as Dean 1) Dean I has been previously submitted in support of Intervenors’ Alternatives Contentions.

<sup>23</sup> *Utahans for Better Transp. V. U.S. Dept. of Transp.*, 305 F.3d 1152, 1172 (10<sup>th</sup> Cir. 2002) (internal cites omitted).

parts.<sup>24</sup> And while the Applicant implies this alternative is remote and speculative because it does not exist in an operational sense, the Applicant does not assert the current absence of an operational model renders the alternative infeasible. Accordingly, because the combination is feasible whether it is “proven” (as defined by Applicant) is an irrelevant consideration for purposes of NEPA.

Applicant relies on a dictionary definition for “proven” as support for its position that alternatives combination are beyond NEPA consideration.<sup>25</sup> But the dictionary definition is supplanted by the jurisprudential gloss on NEPA that requires a consideration of alternatives from the perspective of feasibility, a quality that the alternatives combination enjoys based on the Applicant’s own admission.

The Applicant’s argument hinges on whether the four part alternative is proven and exists. But the material legal question is whether the four part alternative is feasible, and it is. Based the foregoing the Applicant is not entitled to summary disposition on the issue of whether the four part alternative exists because it has conceded that it is feasible.

**Comanche Peak Units 3 & 4 are not more environmentally preferable than combinations of alternatives.**

#### Aesthetics

The Applicant's consideration of aesthetics is a one-size-fits-all generalization that lacks any evidence of actual complaints about the aesthetics of any wind or solar plant. Additionally,

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<sup>24</sup> Motion for Summary Disposition, p. 13.

<sup>25</sup> Id. at p.10, fn.63.

the Applicant has taken a one-size-fits-all approach to the question of aesthetic impacts where a more site-specific approach is called for.

Land use is a local and regional matter.<sup>26</sup> The local impact on aesthetics was at issue in the Seabrook nuclear plant case and involved whether the cooling towers were so obtrusive as to cause unreasonable aesthetic impacts.<sup>27</sup> The Commission fully acknowledged that aesthetic impacts are site-specific. The evidence in the *Seabrook* case established that even if alternative sites all had the same cooling towers the aesthetic consequences “would be markedly different at each location.”<sup>28</sup> Another site-specific consideration the Commission found relevant was the number of residents and tourists to whom the cooling towers would be visible.<sup>29</sup> The failure of the applicant in Seabrook to consider the putative impacts of cooling towers on a site-specific basis did not satisfy the Commission that the required full and fair consideration of alternative sites had been accomplished.<sup>30</sup>

In the instant case the Applicant’s argument suffers from similar defects as found in *Seabrook*. Applicant has made no attempt to differentiate between the impacts of wind generators/solar generators on a site-specific basis. Reading Applicant’s materials would lead one to conclude that the aesthetic impacts are the same irrespective of location, a proposition that runs contrary both to common sense and the expectations of the Commission as related to how such issues are to be analyzed.<sup>31</sup> And while the record in *Seabrook* included actual witness

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<sup>26</sup> *Utahans for Better Transp. V. U.S. Dept. of Transp.*, 305 F.3d 1152, 1172, *supra*.

<sup>27</sup> *In the Matter of Public Service Co. of New Hampshire, et. al.*, (Seabrook Station, Units 1 and 2), 7 N.R.C. 477, 504-508.

<sup>28</sup> *Id* at 506.

<sup>29</sup> *Id* at 507.

<sup>30</sup> *Id* at 508.

<sup>31</sup> *Id.* at 507.

testimony about aesthetic impacts at various locations<sup>32</sup> the record offered in support of the motion for summary disposition has none. Moreover, while the affiants for the Applicant describe various aspects of wind generators/solar generators there is no attempt to differentiate as related to site-specific characteristics. In effect, the Applicant has considered the question of aesthetics without regard to the relative value of viewscapes to residents or others most directly affected. While the Applicant's affiants are evidently well-trained in their respective fields, none can speak for those with personal experience with the aesthetics of wind generators/solar generators. Significantly, none of Applicant's affiants complain about the unpleasant affects of wind generators or solar generators. The affiants describe the quantity of landmass involved but not whether the presence of wind or solar generators would have destabilizing effects as related to aesthetics.<sup>33</sup>

#### Comparisons between Alternatives Combinations and Nuclear

The Applicant's argument suffers from other defects related to comparisons of nuclear and renewables, gas and CAES. For example, while the land mass anticipated for use by wind generators and solar generators is relatively large, the duration of that use and whether it will be available for future use is not considered or compared with nuclear generation. There is no suggestion by Applicant that any land will be permanently lost as a result of wind and/or solar generation plants. But the cumulative effects of a nuclear plant include the permanent loss of land for waste disposal.<sup>34</sup> But no comparison was made of this aspect either.

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<sup>32</sup> Id at 506

<sup>33</sup> NUREG 1555

<sup>34</sup> ER, Table 10.1-2, p. 10.1-22.

Further, the Applicant's comparison of water related impacts is imprecise and inconsistent. For example, the water use and quantity comparison between nuclear and the two bounding cases posits that such is comparable across the three alternatives.<sup>35</sup> But the assertion that water use quantities related to nuclear plant operations are comparable to the combinations of alternatives is contradicted by even a brief review of the water quantity data in the Comanche Peak ER.<sup>36</sup> Comanche Peak Units 3 & 4 are expected to consume 1,317,720 gpm for its circulating water system, alone.<sup>37</sup> The Applicant does not quantify water use quantities for the combination of alternatives but it is difficult to imagine that such could even approach the quantities anticipated for Comanche Peak Units 3& 4. Applicant's imprecision is also manifest in its discussion of CAES as related to water related impacts. While the Applicant's description of water related impacts in its comparison table<sup>38</sup> would suggest comparable water impacts between nuclear and the combination of alternatives this is belied by the description in its fact statement. There Applicant concedes that storage modalities for CAES could have minimal or no water related impacts if depleted gas wells are utilized rather than salt dome or bedded salt deposits. But while this is acknowledged in the Applicant's discussion<sup>39</sup> the elimination of water related impacts through use of depleted gas wells is not reflected in the comparison table.<sup>40</sup> This has the effect of distorting the water related impacts related to the nuclear compared to the combination of alternatives.

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<sup>35</sup> Motion, p. 42.

<sup>36</sup> ER, Table 3.3-1, p.3.3-5.

<sup>37</sup> Id.

<sup>38</sup> Motion, p.42.

<sup>39</sup> Motion, p. 30.

<sup>40</sup> Motion, p. 42.

The Applicant's bounding cases are methodologically and analytically defective.

As Dr. Dean discusses in his report, the two bounding cases advanced by the Applicant suffer from methodological and analytical problems that have the effect of distorting the asserted environmental impacts of the combined alternatives. The Applicant's first bounding case adds little to the analysis because it relies only minimally on renewable sources and only serves as a vehicle to assign disproportionate environmental costs to the combination of alternatives.<sup>41</sup> In discussing the first bounding case, Dr. Dean discusses the importance of accounting for relative value in assigning environmental impacts and costs. This aspect of the first bounding case gets short shrift by the Applicant, as noted by Dr. Dean.<sup>42</sup>

The second bounding case is more representative of an applied combination of alternatives but it still fails to adequately account for the relative qualities of various sites for energy projects.<sup>43</sup> Additionally, the second bounding case misapplies solar and causes an implicit bias in favor of nuclear power.<sup>44</sup>

Dr. Dean discusses two variations of the second bounding case that more realistically integrates solar as a generation source. These two variations are viable and consistent with the Applicant's observation that there many possible combinations of renewable power sources.<sup>45</sup> However, under Dr. Dean's examples, the advantages inherent in solar are

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<sup>41</sup> Dean II, pp. 1-2.

<sup>42</sup> Dean II, pp. 2-4.

<sup>43</sup> Dean II, pp. 4-5.

<sup>44</sup> Id.

<sup>45</sup> Motion, p. 34.

considered.<sup>46</sup> These inherent advantages discussed by Dr. Dean were overlooked in Applicant's bounding cases.

The Applicant's choice and analysis of bounding cases it posits are of limited analytical value when deconstructed as done by Dr. Dean. Accordingly, the Applicant's bounding cases should be accorded limited weight by the Panel.

### **Conclusion**

For the above and foregoing reasons the subject motion for summary disposition should be denied.

Respectfully submitted,

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September 15, 2010

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<sup>46</sup> Dean II, p. 5-6.

**CERTIFICATE OF SERVICE**

I hereby certify that on September 15, 2010 a copy of Intervenor's Response to Applicant's Motion for Summary Disposition was served by the Electronic Information Exchange on the following recipients:

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