

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

**BEFORE THE ATOMIC SAFETY AND LICENSING BOARD PANEL**

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**In the Matter of  
South Texas Project Nuclear Operating Co.  
Application for the South Texas Project  
Units 3 and 4  
Combined Operating License**

**Docket Nos. 52-012, 52-013**

**May 19, 2010**

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**INTERVENORS' MOTION FOR LEAVE TO FILE NEW CONTENTIONS BASED ON  
THE DRAFT ENVIRONMENTAL IMPACT STATEMENT**

Intervenors hereby move for leave to file new contentions that are derived from the Draft Environmental Impact Statement prepared by the NRC Staff for the South Texas Project Units 3 and 4. This motion is made under 10 CFR 2.309(f)(2) and this Panel's October 20, 2009, Initial Scheduling Order, §§E.1 and 2. The proposed contentions are listed and discussed below.

**Legal Standards for DEIS Contentions**

Contentions related to the DEIS are to conform to the pleading requirements of 10 CFR 2.309(f)(1)(i)(ii)(iv)(v)(vi). *In the matter of Tennessee Valley Authority (Bellefonte Nuclear Power Plant, Units 3 and 4)*, 68 NRC 361, 385 (2008).

Each of the following contentions is summarized in a specific supported statement that relates to the requirement that the DEIS cover issues related to the (1) need for power (required by NUREG 1555, §8,10, CFR 51.45(c)), (2) water needs/impacts of the proposed units (required

by NUREG 1555, §§4.0, 5.0, 10 CFR 52.79(a)(1)(iii)), (3)consideration of comparisons to alternate generation modes (required by NUREG 1555, §9)<sup>1</sup> and (4)greenhouse gases and climate change (see *Duke Energy Carolinas LLC*, CLI 09-21 requiring consideration of greenhouse gases and climate change in licensing cases ). Because each contention is related to specific requirements under the National Environmental Policy Act, 42 U.S.C. 4332 (NEPA), NUREG 1555 or a Commission Order they are within the scope of the COLA proceeding and therefore material to the NRC’s consideration of the application.

NEPA requires agencies to consider and give effect to the environmental objectives in the act and “not just to file detailed impact studies which will fill governmental archives.” *Environmental Defense Fund, Inc. v. Corps of Engineers of U. S. Army*, 470 F.2d 289(8<sup>th</sup> Cir. 1972) application denied 93 S.Ct. 675, 409 U.S. 1072, 34 L.Ed.2d 661, certiorari denied 93 S.Ct. 2749, 412 U.S. 931, 37 L.Ed.2d 160. The DEIS related to this adjudication falls short of this requirement as related to the need for power, water impacts, comparisons of alternative generation modes and climate change.

## **DEIS Contention 1**

### **The DEIS analysis of the need for power is flawed and incomplete.**

A. The DEIS analysis of the need for power is incomplete because it accounts only for decline in demand attributable to demand side management from the requirements of Texas

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<sup>1</sup> NEPA requires a consideration of alternatives to the Applicant’s proposed project. 42 U.S.C. 4332(c), *In the matter of Dominion Nuclear North Anna, LLC (Early Site Permit for North Anna ESP Site)*, 65 NRC 539,587(2007).

House Bill 3693.<sup>2</sup> The DEIS does not account for reduced demand caused by funds for energy efficiency programs under the American Recovery and Reinvestment Act nor additional funds for the same purpose as proposed in the recently passed U.S House of Representatives HB 5019.<sup>3</sup> Additionally, the DEIS does not address the recent energy efficiency experiences of the San Antonio municipal utility that yielded a peak reduction of 44.7 MW and anticipated energy savings of 86,712,978 KWh at a cost of \$0.032/KWh.<sup>4</sup> The DEIS's attenuated consideration of the effects of energy efficiency/demand side management programs has the effect of overstating the Applicant's need for power.

B. The DEIS analysis of the need for power is flawed because it does not consider the most recent energy forecast from ERCOT. The DEIS assumes that peak demand in 2015 will be 72,172 MW.<sup>5</sup> However, the most recent ERCOT forecast actually projects peak demand in 2015 at 70,517 MW or a 1655 MW/ 2.2% reduction in peak demand.<sup>6</sup> The failure to consider this more recent energy forecast has the effect of overstating the Applicant's need for power.

C. The DEIS analysis does not account for increases in wind carrying capacity.<sup>7</sup> The most recent ERCOT analysis indicates that wind carrying capacity has increased from 708 MW to 793 MW so far this year and is expected to increase another 115 MW by 2015. The failure of the DEIS to account for this increase has the effect of understating the total generation capacity available in the ERCOT region.

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<sup>2</sup> David Power Report, p. \*, attached

<sup>3</sup> David Power Report, p.6, attached.

<sup>4</sup> David Power Report, p.2.

<sup>5</sup> DEIS Fig. 8-2.

<sup>6</sup> David Power Report, p. 3.

<sup>7</sup> Id.

D. The DEIS fails to account for the addition of 2,073 MW of non-nuclear capacity to the ERCOT generation portfolio.<sup>8</sup> This additional capacity was not accounted for in the need for power discussion in the DEIS. The failure of the DEIS to account for this increase has the effect of understating the total capacity available in the ERCOT region.

E. The DEIS does not account for 31,757 MW of additional capacity through interconnections in the ERCOT region by 2015. The addition of this capacity will create a reserve capacity of 51% in the ERCOT region.<sup>9</sup> The failure of the DEIS to account for this increase has the effect of understating the total capacity available in the ERCOT region without the addition of STP Units 3 & 4.

F. The DEIS does not account for a non-wind renewable capacity mandate under consideration by the Texas PUC. Adoption of this renewable portfolio standard would add 500 MW of capacity in the ERCOT region.<sup>10</sup> The failure of the DEIS to account for this increase has the effect of understating the total capacity available in the ERCOT region.

G. The DEIS does not account for reduced demand caused by the adoption of the International Energy Conservation Code. The IECC building code has the potential to reduce peak demand by 2,362 MW annually by 2023 in the ERCOT region.<sup>11</sup> The failure of the DEIS to account for this reduction in peak demand has the effect of understating the total capacity available in the ERCOT region.

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<sup>8</sup> David Power Report, pp. 3-4.

<sup>9</sup> David Power Report, p. 4

<sup>10</sup> Id.

<sup>11</sup> Id.

H. The DEIS does not account for a compressed air energy storage (CAES) project planned for Texas by ConocoPhillips/General Compression that will be available for baseload capacity.<sup>12</sup> This recently announced project is proof that the combination of wind capacity and CAES is a viable means of generating baseload power. The failure of the DEIS to account for this source of baseload capacity has the effect of understating the future total generating capacity in the ERCOT region

## **DEIS Contention 2**

### **The DEIS understates the effect of global warming on the cumulative impacts of the operation of STP 3 & 4.**

A. The DEIS conclusion that cumulative effects of greenhouse gas emissions are projected to be “noticeable but not destabilizing”<sup>13</sup> is contradicted by the EPA’s April 27, 2010 report “Climate Change Indicators in the United States”.<sup>14</sup> *Inter alia*, the EPA report finds compelling evidence that composition of the atmosphere and many fundamental measures of climate are changing.<sup>15</sup> By understating the effects of climate change the DEIS effectively minimizes the contributions to the GHG inventory attributable to operation of STP Units 3&4. This has the further effect of minimizing the importance of selecting the lowest GHG alternatives to generate electricity. A full accounting for all stages of the UFC shows that nuclear power has

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<sup>12</sup> David Power Report, p.6.

<sup>13</sup> DEIS, p.7-43-44

<sup>14</sup> The EPA report is attached hereto.

<sup>15</sup> David Power Report, pp.8-9.

significantly greater GHG burdens than wind, solar power or geothermal.<sup>16</sup> The DEIS did not make any such comparison, however.<sup>17</sup>

B. The DEIS acknowledges that a rising sea level caused by climate change could cause salt water to flow farther up the Colorado River towards the Reservoir Makeup Pumping Facility but does not consider the increased salinity of the water on plant operations.<sup>18</sup> Increased salinity of water from the Colorado River could have adverse effects on plant operations.<sup>19</sup>

C. The DEIS describes STP 3 & 4 cumulative impacts on surface water and groundwater quality<sup>20</sup> but fails to compare cumulative impacts to surface water quality from alternatives such as wind and solar. The failure to compare water quality impacts from alternatives including wind, solar, geothermal, etc. has the effect of distorting the relative advantages of nuclear power.

D. The DEIS fails to consider the effect of global warming on operations of STP Units 3 & 4 related to 1) water availability and 2) increased ambient temperatures of air and the effect of higher cooling water temperatures.<sup>21</sup> The failure to consider these adverse impacts has the effect of omitting material information concerning water usage and temperature thereof and effects on plant operations. This omission has the effect of overstating relative advantages of nuclear power and understating environmental impacts. .

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<sup>16</sup> "Greenhouse Emissions and Nuclear Energy," *Modern Energy Review* 1, no. 1 (August 2009): 54-57.

<sup>17</sup> The DEIS limits its comparison of CO2 emissions to nuclear, coal, gas and combinations thereof. Table 9-5, p. 9-30.

<sup>18</sup> David Power Report, p.10.

<sup>19</sup> See <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/1984/in84071.html> and <http://spxcooling.com/pdf/CTs-and-Salt-Water.pdf>.

<sup>20</sup> DEIS, pp. 7-16-21.

<sup>21</sup> David Power Report, p.10-11.

### DEIS Contention 3

#### **The DEIS fails to compare the CO2 emissions of the UFC to the CO2 emissions of wind and solar power.**

Appendix I of the DEIS discusses the CO2 footprint of a LWR. However, this discussion omits any direct comparison to similar emissions related to alternatives such as wind, solar, geothermal, etc. The only reference to a comparison is the study by B.K. Sovacool.<sup>22</sup> This study consists of a survey of relevant literature and concludes that alternatives such as wind, solar and geothermal have much smaller CO2 footprints than nuclear powered generation.<sup>23</sup> However, the DEIS otherwise makes no attempt to compare the CO2 footprints of alternative generation modes. Additionally, comparisons of CO2 emissions related to alternatives are not covered in other contexts of the DEIS.<sup>24</sup> The closest that the DEIS comes to a meaningful discussion of a comparison of CO2 impacts is an attenuated reference in the environmental impacts of alternatives where it is conceded that wind, solar and hydropower have minor CO2 impacts.<sup>25</sup> But this reference does not quantify any comparisons and erroneously concludes that the nuclear option has the lowest emission of GHG of viable alternatives.<sup>26</sup>

This DEIS conclusion mistakenly assumes that alternatives such as wind, solar and geothermal (or combinations thereof) are not viable baseload alternatives. This conclusion is contradicted by, *inter alia*, the recent announcement of ConocoPhillips and General

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<sup>22</sup> DEIS Appx. I, p.I-4.

<sup>23</sup> Sovacool, p. 2950, Table 8. See also "Greenhouse Emissions and Nuclear Energy," *Modern Energy Review* 1, no. 1 (August 2009): 54-57.

<sup>24</sup> For example, no such comparison is attempted related to construction and preconstruction activities (§4.7.1), air quality operational impacts (§5.7.1), fuel cycle, transportation and decommissioning (§6.1.3), decommissioning (§6.3), cumulative impacts (§7.1), water use impacts (§7.2.1), water quality impacts (§7.2.2), species impacts (§7.3.1.2), aquatic ecosystem impacts (§7.3.2), alternatives requiring new generation capacity (§9.2.2) (Table 9-5).

<sup>25</sup> DEIS, §9.2.5.

<sup>26</sup> *Id.*

Compression of a CAES facility planned for Texas that would be suitable for baseload generation.<sup>27</sup> The announcement of this project coupled with the National Renewable Energy Laboratory's conclusion that wind generation combined with CAES is a viable baseload source makes exclusion of this alternative in the DEIS unreasonable.<sup>28</sup> Additionally, the DEIS omits any discussion of combinations of wind and solar power to provide baseload generation.<sup>29</sup>

The failure of the DEIS to discuss CO2 impacts related to alternative generation modes is particularly noteworthy considering the DEIS's recognition that GHG increases and effects of climate change have profound environmental impacts.<sup>30</sup> Moreover, the omission of any discussion of the lower GHG profiles for renewable generating sources compared to the UFC has the effect of distorting the putative advantages of nuclear powered generation.

#### **DEIS Contention 4**

**The DEIS analysis of STP 3 & 4 construction impacts related to GHG emissions assumes appropriate mitigation measures would be adopted but fails to discuss what mitigation measures would be available to minimize GHG emissions during construction.<sup>31</sup>**

The DEIS acknowledges that construction activities include those with GHG impacts. And then the DEIS dismisses any need to analyze such because it assumes appropriate mitigation would be implemented.<sup>32</sup> But the DEIS makes no attempt to determine what mitigation

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<sup>27</sup> David Power Report, p.6.

<sup>28</sup> National Renewable Energy Laboratory, "Creating Baseload Wind Power Systems Using Advanced Compressed Air Energy Storage Concepts", Oct. 3, 2006.

<sup>29</sup> David Power Report, p.7.

<sup>30</sup> For example see DEIS §§ 7.1, 7.2.1, 7.2.1.1, 7.2.1.2, 7.2.2, 7.2.2.2, 7.3.1.2, 7.3.2.

<sup>31</sup> DEIS p. 4-63.

<sup>32</sup> Id.

measures/alternatives are available let alone what actual effects on GHG emissions would be realized by such. The DEIS suggests no specific alternatives or GHG mitigation measures related to earthmoving, concrete batch plant operations or any other construction related activity. This assumption/ leap of faith is contrary to 10 CFR 51.70(b) that requires the DEIS to be analytic in its discussion of impacts.

## **DEIS Contention 5**

**The DEIS conclusion that impacts caused by changes in global climate change “may not be insignificant” fails to meet the requirements of 10 CFR 51.70(b) to be “clear and analytic”.**

The DEIS describes climate change impacts related to groundwater and nonradiological health as “not insignificant”. Despite this somewhat ambiguous conclusion, the DEIS determined no alterations to its conclusions regarding groundwater or nonradiological health were warranted.<sup>33</sup> As a result of this conclusion, the cumulative impacts on groundwater and nonradiological health were characterized as “small”.<sup>34</sup> The DEIS findings that certain impacts are “not insignificant” is inconsistent with conclusions that are considered “small”. In effect, the DEIS concedes the impacts are significant but then reaches an inconsistent conclusion that the effects thereof are “small”.

In this regard, the DEIS fails to satisfy 10 CFR 51.70(b) that requires the document to be, *inter alia*, clear and analytic. This requirement is not satisfied because the DEIS makes no

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<sup>33</sup> DEIS, pp. 7-15, 7-47.

<sup>34</sup> DEIS pp. 7-16, 7-47.

attempt to reconcile its findings of significant impacts with conclusions that such have only minimal effects. Instead the DEIS makes the unsupported and contradictory analytic leap that significant impacts yield only small effects. One court has described the EIS adequacy criteria as follows:

(1) whether the agency in good faith objectively has taken a hard look at the environmental consequences of a proposed action and alternatives; (2) whether the EIS provides detail sufficient to allow those who did not participate in its preparation to understand and consider the pertinent environmental influences involved; and (3) whether the EIS explanation of alternatives is sufficient to permit a reasoned choice among different courses of action.<sup>35</sup>

The DEIS has failed to take a “hard look” at impacts it determines are “not insignificant” and instead merely concludes such have small effects. This failure does not provide sufficient detail to understand how the conclusions were reached. As a result, the public and decision makers are unable to make reasoned choices among competing alternatives.

## **DEIS Contention 6**

**The DEIS analysis of surface water availability fails to account for the sale of 19,356 acre ft/yr from the Colorado River to the Las Brisas coal-fired power plant.**

The David Power Report notes that the water resources for Units 3 & 4 operations has been diminished by the recent sale of 19,356 acre ft/yr from the Colorado River for use by the Las Brisas coal-fired power plant.<sup>36</sup> The DEIS does not discuss this transaction nor the effects thereof on the assumed volume of water available from the Colorado River for Units 3&4

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<sup>35</sup> *Mississippi River Basin Alliance v. Westphal*, 230 F.3d 170, 174 (5<sup>th</sup> Cir. 2000)(internal cites omitted).

<sup>36</sup> David Power Report, pp.1,11-12.

operations.<sup>37</sup> This is a material omission from the DEIS discussion of surface water impacts and is significant, particularly in low-flow periods, when STP units will be competing for scarce water resources with other power plants.

### **Conclusion**

The Intervenors urge that leave be granted for the contentions herein to be admitted for consideration by this ASLB Panel and for adjudication.

Respectfully submitted,

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<sup>37</sup> DEIS, §5.2.2.1

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**Docket Nos. 52-012, 52-013**

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**CERTIFICATE OF SERVICE**

I hereby certify that on May 19, 2010 a copy of the Intervenor's "Notice of Appeal" was served by the Electronic Information Exchange on the following recipients:

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