

STPCOLAEISCom Resource

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Sent: Wednesday, June 09, 2010 3:23 PM
To: Muir, Jessie; STPCOLAEIS Resource
Cc: Tom Smitty Smith; eliza.seedcoalition@gmail.com; karen@seedcoalition.org
Subject: Public Citizen and SEED Coalition comments on DEIS for STP 3 & 4
Attachments: Cover letter for DEIS Comments 6-10-2010.pdf; DEIS Contentions 1.pdf; Power Report 05-19-10.pdf

Ms. Muir,

Attached please find our cover letter, which explains our comments and supplemental attachment. All three attachments comprise our comments.

Let me know if you have any questions or concerns.

Thank you,

Matt

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Jessie Muir
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Washington, DC 20555-0001

June 9, 2010

Dear Ms. Muir,

Public Citizen and SEED Coalition submitted contentions based on the new draft environmental impact statement for South Texas Project 3 & 4 (Docket Nos. 52-012, 52-013). We would like to submit a copy of these contentions as our formal comments.

There are two attachments. One is labeled "DEIS Contentions 1" and the second is labeled "Power Report 5-19-10". The Power Report consists of comments made by David Power that are referenced in the contentions document.

Please feel free to contact our office with any questions.

Sincerely,

Matthew Johnson

Cc: Karen Hadden, SEED Coalition
Karen@seedcoalition.org

Tom "Smitty" Smith, Public Citizen
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**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD PANEL

**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

**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)¹ 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(8th 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

¹ 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 3693.² 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 5019.³ 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.⁴ 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.⁵ 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.⁶ 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.⁷ 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.

² David Power Report, p. *, attached

³ David Power Report, p.6, attached.

⁴ David Power Report, p.2.

⁵ DEIS Fig. 8-2.

⁶ David Power Report, p. 3.

⁷ Id.

D. The DEIS fails to account for the addition of 2,073 MW of non-nuclear capacity to the ERCOT generation portfolio.⁸ 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.⁹ 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.¹⁰ 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.¹¹ 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.

⁸ David Power Report, pp. 3-4.

⁹ David Power Report, p. 4

¹⁰ Id.

¹¹ 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.¹² 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”¹³ is contradicted by the EPA’s April 27, 2010 report “Climate Change Indicators in the United States”.¹⁴ *Inter alia*, the EPA report finds compelling evidence that composition of the atmosphere and many fundamental measures of climate are changing.¹⁵ 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

¹² David Power Report, p.6.

¹³ DEIS, p.7-43-44

¹⁴ The EPA report is attached hereto.

¹⁵ David Power Report, pp.8-9.

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

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.¹⁸ Increased salinity of water from the Colorado River could have adverse effects on plant operations.¹⁹

C. The DEIS describes STP 3 & 4 cumulative impacts on surface water and groundwater quality²⁰ 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.²¹ 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. .

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

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

¹⁸ David Power Report, p.10.

¹⁹ 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>.

²⁰ DEIS, pp. 7-16-21.

²¹ 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.²² 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.²³ 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.²⁴ 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.²⁵ But this reference does not quantify any comparisons and erroneously concludes that the nuclear option has the lowest emission of GHG of viable alternatives.²⁶

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

²² DEIS Appx. I, p.I-4.

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

²⁴ 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).

²⁵ DEIS, §9.2.5.

²⁶ *Id.*

Compression of a CAES facility planned for Texas that would be suitable for baseload generation.²⁷ 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.²⁸ Additionally, the DEIS omits any discussion of combinations of wind and solar power to provide baseload generation.²⁹

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.³⁰ 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.³¹

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.³² But the DEIS makes no attempt to determine what mitigation

²⁷ David Power Report, p.6.

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

²⁹ David Power Report, p.7.

³⁰ 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.

³¹ DEIS p. 4-63.

³² 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.³³ As a result of this conclusion, the cumulative impacts on groundwater and nonradiological health were characterized as “small”.³⁴ 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

³³ DEIS, pp. 7-15, 7-47.

³⁴ 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.³⁵

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.³⁶ 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

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

³⁶ David Power Report, pp.1,11-12.

operations.³⁷ 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,

/s/ Robert V. Eye
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May 19, 2010

³⁷ DEIS, §5.2.2.1

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

**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

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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Comments Regarding Draft Environmental Impact Statement for Combined Licenses for South Texas Project Units 3 and 4

By: David Power
Public Citizen's Texas Office

I have reviewed the Nuclear Regulatory Commission's Draft Environmental Impact Statement for Combined Licenses for South Texas Project Nuclear Power Plant, Units 3 and 4, and I offer the following comments regarding the revision based on my best professional judgment.

Summary

After reviewing the draft, it is my professional judgment that the NRC Staff has committed numerous errors of omission in their analysis of global climate change including:

- The significance of climate change on the environment,
- the methods of calculating the global climate change emissions from the proposed nuclear generating facility,
- the significance of the emissions from this plant compared to alternatives,
- the impact of climate change on the operations of this plant, and

The DEIS has also failed in the need for power discussion to adequately consider reductions in demand for power and additional capacity from renewable and energy storage.

Since the DEIS was released, at least two significant events have occurred:

- The US EPA released a new report on April 27th 2010 entitled "Climate Change Indicators in the United States," which details many ways in which the climate is being disrupted by emissions of greenhouse gasses.
- The Corpus Christi, Texas, City Council has approved the sale of water to the proposed Las Brisas coal plant. The City will be piping water from the Colorado River to the serve the needs of this plant. This new plant will could withdraw as much as **19,356** acre feet a year from the Colorado, thus decreasing water flow to STP Units 3 and 4.¹

These developments are discussed below.

¹ Data from Water Demand Projections for Power Generation in Texas Prepared for Texas Water Development Board Bureau of Economic Geology Scott W. Tinker, Director John A and Katherine G. Jackson School of Geosciences The University of Texas at Austin, Austin, Texas 78713-8924

The NRC Staff's DEIS is flawed because it failed to do a thorough analysis of the need for power.²

NRC Staff failed to adequately consider:

1) The much lower cost of energy efficiency.

As an example, recent reports by Nexant³ in a study of the San Antonio demand side management program show that their energy efficiency program has significant energy savings at very low cost. They stated in their report to San Antonio, "As programs expand, CPS Energy should continue planning for the resources necessary to support large-scale deployment of DSM program portfolio and to achieve both short-term and long-term goals." The overall cost of the program as defined for the energy efficiency programs only is: "**Cost of Saved Energy = \$0.032/kWh.**" This does not take into account the additional reduction in peak costs that their load management programs achieved. The combined programs were determined to have achieved a reduction of 44.7 MW of peak energy with an expected energy savings of 86,712,978 KWh.

The Texas Public Utility Commission has been considering modifying the state's energy efficiency incentive program and has released a Strawman rule⁴ that will change the goal of the program. The proposed rule will increase the annual reduction from the current standard of 20% of new growth in demand to 50% of new growth in demand or 1% of peak demand, whichever is greater. Using the published ERCOT consumption data⁵ this would reduce energy consumption in the regulated areas of the state by 635 MW annually

² Standards for critiquing the need for power section are from Draft NUREG-1937 D-54 March 2010:

Affected states or regions may prepare a need for power evaluation and assessment of the regional power system for planning or regulatory purposes. A need for power analysis may also be prepared by a regulated utility and submitted to a regulatory authority, such as a state public utility commission. However, the data may be supplemented by information from other sources. The determination for the need for power is not under NRC's regulatory purview. When another agency has the regulatory authority over an issue, NRC defers to that agency's decision. The NRC staff will review the need for power and determine if it is (1) systematic, (2) comprehensive, (3) subject to confirmation, and (4) responsive to forecasting uncertainty. If the need for power evaluation is found to be acceptable, no additional independent review by the NRC is needed. The information provided in this comment will be considered to determine whether it significantly affects the forecast on which the applicant relied for its need for power analysis.

³ Jim Herndon, Senior Project Manager Energy and Carbon Management CPS Nexant Measurement and Verification of CPS Energy's 2009 DSM Program Offerings 4/26/2010

⁴ PUC project # 37623 closed for comments 3/31/2010

⁵ Ercot May 2010 load forecast and reserve margin update.

using the published 2009 actual value and 705 Mw annually using the 2015 ERCOT estimated peak demand forecast, this would reduce the need for additional generation by at least 3200 MW by 2020 and if the ERCOT forecast is accurate, would be over 3500MW.

ERCOT does not currently use energy efficiency other than those based on Texas HB3693 in its projections and is currently shown to be calculated at only 242 MW annually.

2) ERCOT/PUC energy forecast (DEIS page 8-20, Need for Power):

ERCOT recently revised their load forecast, as released in their May 2010 load forecast and reserve margin update prepared for the ERCOT board of directors, dated May 18, 2010. According to this report ERCOT has **reduced** its estimate of forecasted demand from 72,172 MW to 70,517 MW for a reduction of 1655 MW or a **2.2%** peak reduction in 2015.

ERCOT has also increased their estimate of wind carrying capacity reported in their March 2010 report from 708 MW to 793 MW or a 12% increase in just 2 months and an additional increase of 115 MW⁶ by 2015. This does not take into account any increases in effective load carrying capacity (ELCC) factor that coastal or off shore wind developments might add or the addition of large scale storage in the market to time shift the energy provided by wind or solar generation assets.

⁶ This is ERCOT's effective load carrying capacity (ELCC) of additional wind generation expected to be available from planned units installed by 2015. The ERCOT Effective Load Carrying Capacity is an estimate calculation by ERCOT on the availability of wind recourse to carry firm load for an extended period of time. In effect it takes the most conservative approach to derate the amount of energy that wind provides to the market. It does not take into account the availability of wind generation to provide energy to the market but is an obsolete worst case calculation that is used to perform generation planning. On 3/25/2010 ERCOT reported on a new study to revise these calculations as the old capacity factor has become dated with the installation of thousands of MW new wind generation all across the ERCOT market that have substantially different generation profiles than originally calculated. In addition the original calculation did not take into account all hours of the year but used a statistical sampling, a low number of iterations were used to simplify the calculation and only randomized days were modeled for each month. The new calculation should provide a higher ELCC that more accurately characterizes the generation capability provided by the wind generation recourses. However It will not take into consideration the deployment of energy storage and other technologies being deployed to optimize delivery of the energy generated. From the ERCOT report dated 3/25/2010 they will be addressing these shortcomings for the 2012 projections and realize that this adjustment will have to be updated to account for additional generation as it is deployed.

New additional generation of 2,073MW in the ERCOT generation portfolio was also reported⁷.

Additionally 26,182MW of planned units in the Full Interconnection Study Phase are also reported, providing an Ercot total estimate of 31,757MW⁸ of additional generation available in 2015. By ERCOT's estimates the reserve capacity will exceed 51% under these conditions.

3) Texas Non-wind RPS

The PUC is considering adding an additional renewable energy mandate to the state's existing Renewable Portfolio Standard. This has been assigned a project #35792 and a strawman has been issued.⁹ This would provide an additional 500 MW of generating capacity in the ERCOT market.

4) New Building codes.

The State Energy Conservation Office (SECO) has announced that the state will be adopting the IECC 2009 building code¹⁰.

The International Energy Conservation Code (IECC) is a national, consensus-based, model code. The 2009 IECC is expected to result in significant energy savings and related emissions reductions, estimated at 12 to 15% annual improvement for average homes. In a report examining the potential for energy efficiency in Texas, the American Council for an Energy Efficient Economy estimates that with this new code, Texas could save 10,533 kilowatt hours of electricity annually and 2,362 megawatts annually of peak summer demand by 2023.^{11, 12}

These new standards have significant increases in the requirements for energy savings that are required for all new construction.¹³

⁷ Coletto Creek Unit 2, 756MW, Papalote Creek Wind (198MW nameplate) 17MW, Panda Temple Power 1300MW

⁸ Mothballed capacity 5,022, 50% of non-synchronous ties 553MW, planned units in full interconnection study phase 26,182

⁹ The hearing on this rule was held 4/30/2010, final comments were filed 5/11/2010, rule would apply starting in 2011 at 100MW and ramp to 500 MW by 2015

¹⁰ http://www.seco.cpa.state.tx.us/news/2010/seco_ch19.php

¹¹ House Energy Resources Subcommittee for Energy Efficiency and Renewables April 2, 2009, Written Testimony of Kate Robertson, Energy Efficiency Specialist Environmental Defense Fund

¹² ACEEE, *Potential for Energy Efficiency, Demand Response, and Onsite Renewable Energy to Meet Texas's Growing Electricity Needs* (Report Number E073), March 2007.

13 SUBCHAPTER E. TEXAS BUILDING ENERGY PERFORMANCE STANDARDS 34 TAC §19.53
“The Comptroller of Public Accounts proposes new §19.53, concerning building energy efficiency performance standards. The new section is created in compliance with Health and Safety Code, §388.003(b-1), which authorizes the State Energy Conservation Office (SECO) to adopt equivalent or more stringent energy codes than those adopted in Health and Safety Code, §388.003(a) and (b). New §19.53(a) adopts the energy efficiency provisions of the International Residential Code as they existed on May 1, 2009, as the energy code for single family residential dwellings, as that term is defined in Health

According to the Building Code's Assistance Project (BCAP)¹⁴ if Texas began implementing the 2009 IECC and Standard 90.1-2007 statewide in 2011, businesses and homeowners would save an estimated \$785 million annually by 2020 and \$1,605 million annually by 2030 in energy costs (assuming 2006 prices).

Additionally, implementing the latest model codes would help avoid about 213.9 trillion Btu of primary annual energy use by 2030 and annual emissions of more than 15.6 million metric tons of CO² by 2030.¹⁵

5) In the new study on Energy Efficiency in the South they found that fewer new power plants would be needed with a commitment to energy efficiency.¹⁶

Our analysis of nine illustrative policies shows the ability to retire almost 25 GW of older power plants – approximately 10 GW more than in the reference case. The nine policies would also avoid over the next twenty years the need to construct 49 GW of new plants to meet a growing electricity demand from the RCI sectors.¹⁷

Further,

The industry sector offers the greatest energy efficiency potential in Texas. In 2020, savings from all three sectors is about 10% (1,180 TBtu) of the total energy consumed by the State in 2007. Electricity savings constitute 668 TBtu of this amount. With these policies, the generation of electricity from the equivalent of 17 power plants of 500-MW each could be avoided in the year 2020.¹⁸

and Safety Code, §388.002(12). New §19.53(b) adopts the International Energy Conservation Code as it existed on May 1, 2009, for all other residential, commercial, and industrial construction in this state.

§19.53. Building Energy Efficiency Performance Standards.

(a) Single-family residential construction. Effective January 1, 2012, the energy efficiency provisions of the International Residential Code as they existed on May 1, 2009, are adopted as the energy code in this state for single-family residential construction as it is defined in Health and Safety Code, §388.002(12).

(b) All other residential, commercial, and industrial construction. Effective January 1, 2011, the International Energy Conservation Code as it existed on May 1, 2009, is adopted as the energy code for use in this state for all residential, commercial, and industrial construction that is not single-family residential construction under subsection (a) of this section.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on March 11, 2010.”

¹⁴ <http://bcap-energy.org/>

¹⁵ <http://bcap-ocean.org/state-country/texas>

¹⁶ April 13, 2010 Georgia Institute of Technology and Duke University STATE PROFILES OF ENERGY EFFICIENCY OPPORTUNITIES IN THE SOUTH: TEXAS

¹⁷ Id.

¹⁸ Id.

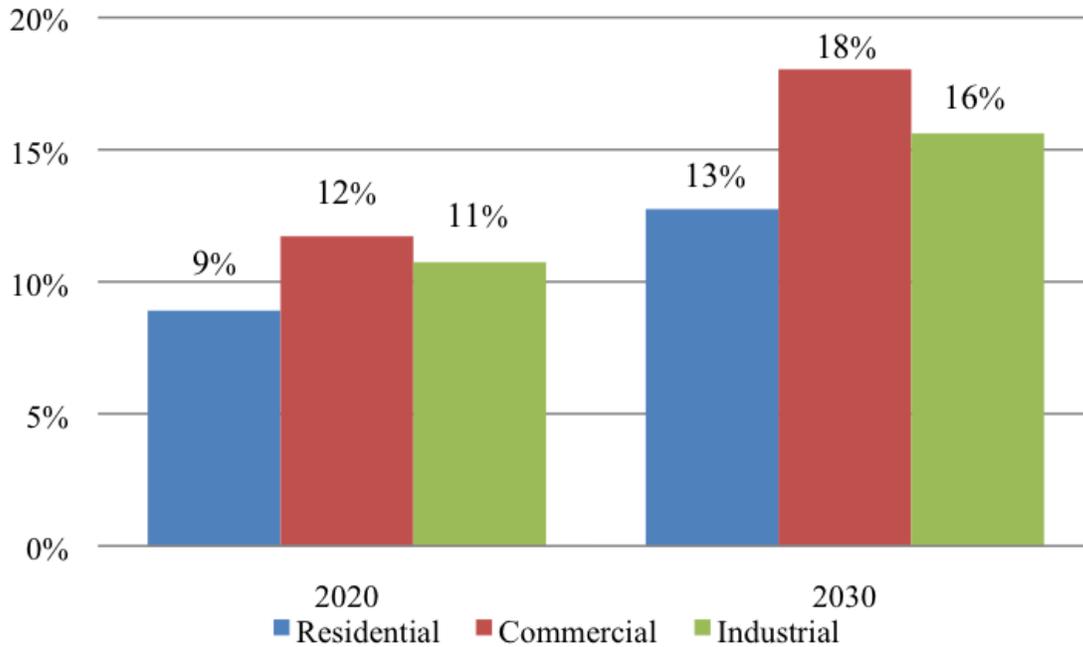


Figure ES.2 Energy-Efficiency Potential by Sector, in 2020 and 2030¹⁹

6) Additional Federal Incentives.

In addition to the \$218 million in funding from the American Recovery and Reinvestment Act, additional Federal incentives for energy efficiency programs recently passed in the House of Representatives in HB5019 and would provide over \$6 billion in energy efficiency retrofit incentives further reducing the need for new generation.

7) Compressed Air Energy Storage

Significant advances in energy storage technologies are being made. This will provide additional firming or increase in the capacity factor of wind generation. New projects have been announced similar to one by ConocoPhillips with General Compression announced on April 14, 2010.²⁰

General Compression, Inc. ("GC"), a Massachusetts company developing an innovative compressed air energy storage system, today announced it has signed an agreement with ConocoPhillips (NYSE: COP) of Houston, Texas, to develop compressed air energy storage projects, beginning with a pilot project in Texas, using General Compression's Advanced Energy Storage ("GCAESTTM") technology. GC and ConocoPhillips are evaluating a multiple-phase pilot project in Texas that would incorporate GCAESTTM technology with wind energy, underground air storage and power sales.

GC's near-isothermal compressor/expander module is used to create 2 MW to 1,000 MW, 8 to 300 hour discharge, compressed air energy storage (CAES) projects.

¹⁹ Id.

²⁰ <http://www.generalcompression.com/gcaes.html>

According to the engineering designs, “The projects shape power from the wind farm so that it arrives to the customer 5 days a week for 8 hours (Peaking), 5-7 days a week for 16 hours (Intermediate) or 7 days a week for 24 hours (Baseload), or any other demand curve that a customer provides. Projects are designed to bid into firm power contracts, and to have enough storage duration, from 20-300 hours, to meet contracted delivery commitments.”²¹

In addition “Shell and Luminant will also explore the use of compressed air storage, in which excess power could be used to pump air underground for later use in generating electricity. This technology will further improve reliability and grid usage and becomes more economical with large-scale projects, such as proposed for Briscoe County.”²²

As discussed in the “Comments Regarding Luminant’s Revision to the Comanche Peak Nuclear Power Plant” by Raymond H. Dean, Ph.D,²³ there has been considerable additional information on the conclusions of combining new generation power sources with storage that would also apply in this instance. Natural gas, wind, solar; and energy storage either individually or in combination, are viable alternatives that could both produce baseload power and be environmentally preferable to nuclear generation.²⁴

What really matters is whether grid managers understand, know how to deal with, and have experience dealing with them in the dynamic electrical-grid environment. For example, there are several decades of experience using CAES to absorb power from the grid when customer demand is weak and supply power to the grid when customer demand is strong. This is not significantly different from using CAES to absorb power from the grid when wind power is strong and supply power to the grid when wind power is weak.²⁵

Conclusion

When considering all reductions in demand, due to efficiencies and DSM programs that are implemented by municipally owned utilities, the forecast reflects a likely decrease in the total need for energy of 35,877 MW by 2020. This reduction in demand, combined with the anticipated additional non-nuclear generation, including increased capacity for wind, solar, geothermal and other renewables, makes the addition of STP Units 3&4 unnecessary to meet baseload needs. Then, if the industrial customers²⁶ follow the recommended guidelines, an additional 8,500 MW of reduction could be achieved for a total of 44,377MW. Any need for additional generation to serve the market at this time would have to be in doubt. The following chart summarizes the combination of increased efficiencies and generation capacity.

²¹ Id.

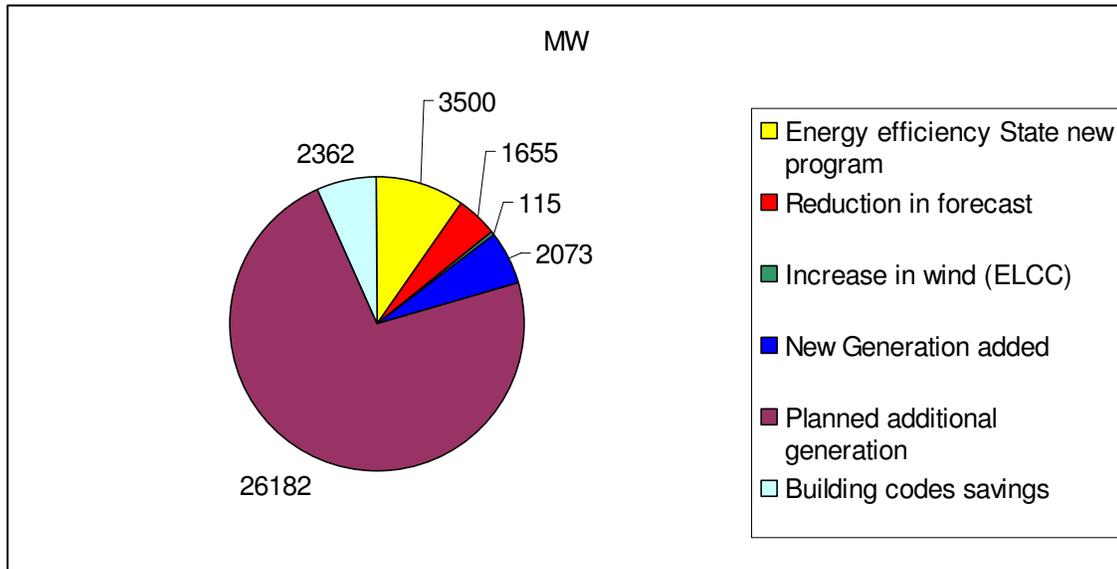
²² <http://www.luminant.com/news/newsrel/detail.aspx?prid=1087>

²³ Raymond H. Dean, Ph.D. Comments Regarding Luminant’s Revision to the Comanche Peak Nuclear Power Plant, Units 3 & 4 COL Application Part 3 – Environmental Report, attached.

²⁴ Id at pp. 4-5.

²⁵ Id at p. 4.

²⁶ Industrials do not currently participate in the State energy efficiency programs



The DEIS is flawed because it failed to do a thorough analysis of the significance of climate change.

In their summary the NRC Staff concludes:

7.6.2 Greenhouse Gas Emissions

The review team concludes that the cumulative impacts of greenhouse emissions around the world as presented in the report are the appropriate basis for it’s evaluation of cumulative impacts. Based on the impacts set forth in the GCRP report, the review team concludes that the national and worldwide cumulative impacts of greenhouse gas emissions are noticeable but not destabilizing. (p. 7-43, 44)

This conclusion is contradicted by the newest EPA study entitled “Climate Change Indicators in the United States” released April 27, 2010 which concludes:

The indicators in this report present compelling evidence that the composition of the atmosphere and many fundamental measures of climate in the United States are changing. These changes include rising air and water temperatures, more heavy precipitation, and, over the last several decades, more frequent heat waves and intense Atlantic hurricanes. Assessment reports from the Intergovernmental Panel on Climate Change and the U.S. Global Change Research Program have linked many of these changes to increasing greenhouse gas emissions from human activities, which are also documented in this report.

Analysis of the indicators presented here suggests that these climate changes are affecting the environment in ways that are important for society and ecosystems. Sea levels are

rising, snow cover is decreasing, glaciers are melting, and planting zones are shifting (see Summary of Key Findings on p. 4). Although the indicators in this report were developed from some of the most complete data sets currently available, they represent just a small sample of the growing portfolio of potential indicators. Considering that future warming projected for the 21st century is very likely to be greater than observed warming over the past century,1 indicators of climate change should only become more clear, numerous, and compelling.²⁷

It also notes that:

Temperature is a fundamental component of climate, and it can have wide-ranging effects on human life and ecosystems, as many of the other indicators in this report demonstrate. For example, increases in air temperature can lead to more intense heat waves, which can cause illness and death in vulnerable populations. Temperature patterns also determine what types of animals and plants can survive in a particular place. Changes in temperature can *disrupt* a wide range of natural processes, particularly if these changes occur abruptly and plant and animal species do not have time to adapt.²⁸

Its hard to conclude that changes in temperature that “can disrupt a wide range of natural processes and “cause illness and death in vulnerable populations” are not destabilizing.

The DEIS is flawed because it failed to do a thorough analysis of the impact of climate change on the operation of STP Units 3 and 4.

In its review the NRC staff found:

7.3.2 Aquatic Ecosystem Impacts,

GCC could lead to decreased precipitation, increased sea levels, varying freshwater inflow, increased temperatures, increased storm surges, greater intensity of coastal storms, and increased nonpoint source pollution from runoff during these storms, in the water bodies in the geographic area of interest (Nielsen-Gammon 1995; Montagna et al. 1995; Karl et al. 2009). Such changes could alter salinity, change freshwater inflow, and reduce dissolved oxygen, which could directly affect aquatic habitat. Rising sea water due to global climate change could affect water levels in the lower Colorado River and Matagorda Bay and subsequently change the water quality associated with the mixing of freshwater and estuarine waters (Montagna et al. 1995; Karl et al. 2009). (p.7-33,4)

The staff further noted: While the GCRP has not incrementally forecasted the change in precipitation by decade to align with the licensing action, the projected change in precipitation from the ‘recent past’ (1961-1979) to the period 2080 to 2099 is a decrease of between 10 to 30 percent (Karl et al. 2009). (page 125 note 117)

²⁷ Pg 68 <http://www.epa.gov/climatechange/indicators/pdfs/CI-conclusion.pdf>

²⁸ Emphasis added, Pg 22 <http://www.epa.gov/climatechange/indicators/pdfs/CI-weather-and-climate.pdf>

The NRC staff also notes that:

As stated in Section 2.3.1.1, it is reasonably foreseeable that sea level rise may exceed 3 ft by the end of the century due to GCC (Karl et al. 2009). Actual changes in shorelines would also be influenced by geological changes in shoreline regions (such as sinking due to subsidence).

The increase in sea level relative to the Colorado River bed, coupled with reduced streamflow (also due to GCC), could result in the salt water front in the Colorado River moving up towards the Reservoir Makeup Pumping Facility (RMPF). **p.7-18**

The Karl study the NRC selectively cited notes, “Sea level rise is expected to increase saltwater incursion into coastal freshwater aquifers, making some unusable without desalinization,” (Karl page 47-note 146)

However, even with these concerns being explicitly stated, no analysis has been conducted in the DEIS on the impact of the salt water incursion into the Reservoir Makeup Pumping Facility or the increased salinity of the groundwater used for makeup. If the salinity increases the current fresh water based cooling system will be subject to corrosion and may be come inoperable or need to be replaced by a desalinization facility.

The DEIS also failed to analyze the impact of increased ambient air and cooling water temperatures on operations. Nor did it analyze the impact of the increase thermal loading resulting from the discharge.

In its review the NRC staff found:

The review team determined that the forecasted changes could affect water supply and water quality in the Colorado River Basin during operation of the proposed STP Units 3 and 4. For the water use and water quality assessments discussed below, the review team considered forecasted changes to temperature and precipitation for the entire Colorado River watershed.

The projected change in temperature from ‘present day’ (1993-2008) to the period encompassing the licensing action (i.e., the period of 2040 to 2059 in the GCRP report) for the Colorado River watershed is an increase of between 0 to 5°F.

GCC could result in decreased precipitation and increased temperatures in the lower Colorado River basin. These forecasted changes have the potential to reduce surface runoff and increase evapotranspiration. The changes may result in reduction in the surface water resource in the region. **(p.7-13)**

The review team failed to examine the impact of increased ambient temperature on the temperature of the cooling water reservoir.

Large coal and nuclear plants have been limited in their operations by reduced river levels caused by higher temperatures and thermal limits on water discharge.²⁹

²⁹ 191 U.S. Global Change Research Program **Global Climate Change Impacts in the United States** pg 56 <http://downloads.climate-science.gov/usimpacts/pdfs/energy.pdf>

A recent study by EDF and the University of Texas notes:

During the heat wave in France in 2003 that was responsible for approximately 15,000 deaths, nuclear power plants had to reduce their power output because of the high inlet temperatures of the cooling water just when electricity demand was spiking due to air conditioning use.

Environmental regulations in France (and the United States) limit the rejection temperature of power plant cooling water to avoid ecosystem damage from thermal pollution. When the heat wave raised river temperatures, the nuclear power plants could not achieve sufficient cooling within the environmental limits, and so they reduced their power output at a time when electricity demand was spiking by residents turning on their air conditioners.³⁰

The review team also found: “the projected change in precipitation from the ‘recent past’ (1961-1979) to the period 2080 to 2099 is a decrease of between 10 to 30 percent (Karl et al. 2009).” (page 125 note 117)

An additional recent study for the Texas Water Development board found: “The recent drought in the Southeastern U.S. during 2007 has drawn attention to the vulnerability of electric power production to low stream flows. In the Fall of 2007, the governor of Alabama wrote a letter to President Bush regarding a proposed Georgia water conservation strategy that threatened to shut down the Farley Nuclear Plant in Alabama due to a limited supply of cooling water [Riley, 2007]. As water consumption in other sectors increases over the next 50 years, the power sector, Central and West Texas in particular, will become increasingly vulnerable to drought. Drought can threaten the ability to cool a steam-electric power plant if insufficient water is available for diversion and/or withdrawal.³¹”

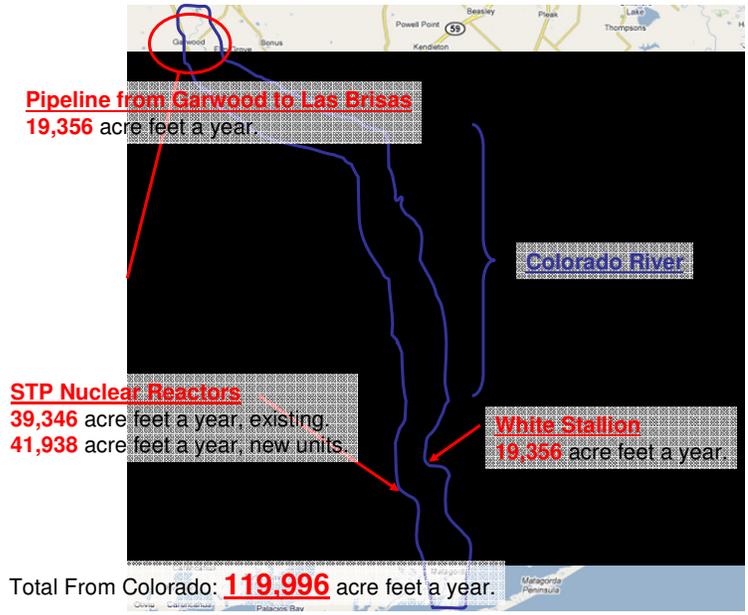
Additional Water Demands Not Addressed in the DEIS

Two new proposed coal plants will use significantly more water than is currently withdrawn from the Colorado River. Since the DEIS was written, the Corpus Christi City Council has authorized the City Manger to negotiate a contract to sell water from the Colorado River to the Las Brisas Energy Center.³² That means a total of nearly 39,000 acre feet of Colorado water will be consumed before it reaches the STP water intake, thus reducing the availability of make-up water.

³⁰ Energy Water Nexus in Texas. The University Of Texas at Austin | Environmental Defense Fund April 2009

³¹ Data from Water Demand Projections for Power Generation in Texas Prepared for Texas Water Development Board Bureau of Economic Geology Scott W. Tinker, Director John A and Katherine G. Jackson School of Geosciences The University of Texas at Austin Austin, Texas 78713-8924

³² Corpus Christi Caller Times, May 11, 2010, updated May 12, 2010.



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The review team failed to analyze the impact of increased ambient air and cooling water temperatures on operations. Nor did it analyze the impact of the increase thermal loading resulting from the discharge. Both of these impacts were raised during public comments on this plants, The failure of the NRC's staff to analyze these impacts is a serious omission.