

November 1, 2010

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Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Gary S. Arnold  
Administrative Judge  
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Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

In the Matter of  
STP Nuclear Operating Company  
(South Texas Project, Units 3 & 4)  
Docket Nos. 52-012 and 52-013

Dear Administrative Judges:

At the oral argument on October 21, 2010, the Licensing Board asked the NRC staff to answer a question concerning the nature of the review team's assessment of need for power in chapter 8 of NUREG-1937, *Draft Environmental Impact Statement for Combined Licenses (COLs) for South Texas Project Electric Generating Station Units 3 and 4* (DEIS).<sup>1</sup> Specifically, the Licensing Board desired clarification on the extent to which the review team relied on data from the Electric Reliability Council of Texas (ERCOT) in performing need for power calculations for the years 2019 and 2024. Oral Argument Transcript at 1134, 1136-37 (Oct. 21, 2010). The following explanation provides the requested clarification.

The review team relied on ERCOT data, but sometimes extended the ERCOT analysis to calculate additional values that were relevant to the review. There are many tables and figures provided in chapter 8 of the DEIS, and each table and figure identifies the source of the data. Further explanation is provided in the text of chapter 8. The two examples that follow, based on data presented in DEIS Tables 8-1 and 8-2 (Staff Attachment 1), illustrate the review team's approach.

The first example, Table 8-1 on page 8-16 of the DEIS, involves a situation where the review team simply reproduced ERCOT values. Table 8-1 provides data on ERCOT peak demand and calculated reserve margin for the years 2009-2014. As Table 8-1 states, the source of this information is reference ERCOT 2009b, which is the 2009 *Report on the Capacity, Demand, and Reserves in the ERCOT Region, System Planning*.<sup>2</sup>

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<sup>1</sup> The DEIS is contained in two volumes. Volume 1 (ML100700327) provides coverage through Chapter 7. Volume 2 (ML100700333) provides coverage from Chapter 8 through Appendix J.

<sup>2</sup> Many of the DEIS chapter 8 references, including ERCOT 2009b, are available in one file at ADAMS accession number ML100600754. ERCOT 2009b is also available at the following web address: (continued. . .)

The second example, Table 8-2 on page 8-16 of the DEIS, involves a situation where further calculations were performed. As explained in the DEIS, "Table 8-2 is a less-detailed extension of Table 8-1 to the year 2024." DEIS at 8-15. See also DEIS at 8-16 (note for Table 8-2 stating, "Source: Calculated by the review team from tables and figures in ERCOT 2009b"). For DEIS Table 8-2, the 2019 and 2024 values for "Peak Summer Demand, MW" and "Total Resource Requirements, MW" were simply taken from ERCOT 2009b. Compare DEIS Table 8-2 with ERCOT 2009b., at 12 (figure titled "ERCOT Generation Capacity and Demand Projections") (Staff Attachment 2). Some values, however, such as the 2019 and 2024 values in Table 8-2 for "Total Resources, No Retirements," were based on extensions of ERCOT data from previous years. See DEIS at 8-15 (discussing the review team's approach for assessing total resources in Table 8-2). The 2019 and 2024 values for "Reserve Margin Based on Firm Load" in Table 8-2 were calculated by the review team based on the relevant 2019 and 2024 values in Table 8-2.

Respectfully submitted,

**/signed (electronically) by/**

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Attachments:

1. NUREG-1937, *Draft Environmental Impact Statement for Combined Licenses (COLs) for South Texas Project Electric Generating Station Units 3 and 4* (Mar. 2010) (cover page and pages 8-15 and 8-16).
2. Electric Reliability Council of Texas, *Report on the Capacity, Demand, and Reserves in the ERCOT Region, System Planning* (May 2009) (cover page and page 12).

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(. . .continued)

<http://www.ercot.com/content/news/presentations/2009/2009%20ERCOT%20Capacity,%20Demand%20and%20Reserves%20Report.pdf>.

**STAFF  
ATTACHMENT 1**



NUREG-1937, Vol. 2

**Draft Environmental Impact  
Statement for Combined Licenses  
(COLs) for South Texas Project  
Electric Generating Station  
Units 3 and 4**

**Draft Report for Comment**

**U.S. Nuclear Regulatory Commission  
Office of New Reactors  
Washington, DC 20555-0001**

**U.S. Army Corps of Engineers  
U.S. Army Engineer District, Galveston  
Galveston, TX 77553-1229**



**US Army Corps**

1 In the ERCOT methodology, loads acting as resources are capable of reducing or increasing  
2 the need for electrical energy or providing ancillary services such as responsive reserve service  
3 or non-spinning reserve service. Loads acting as resources must be registered and qualified by  
4 ERCOT, and they will be scheduled by a qualified scheduling entity (STPNOC 2009).

5 STPNOC discussed the need for power in the context of declining reserve margins in the  
6 ERCOT region (STPNOC 2009). As recently as May 2008, forecasted reserve margin in the  
7 ERCOT Demand and Reserves report was expected to fall below the required reserve margin of  
8 12.5 percent by 2013. However, the May 2009 update to this report now shows a better  
9 capability to meet firm load at least through 2014 (see Table 8-1). ERCOT produces a “top-  
10 down” forecast for its major subareas, but does not include separate demand estimates for  
11 different end-use sectors. Thus, forecasts do not contain separate forecasts for residential,  
12 commercial, and industrial demand.

13 As shown in Table 8-1, the ERCOT 2009 forecasts take into account DSM programs and  
14 efficiency programs. As stated in the 2008 Texas State Energy Plan, DSM can be divided into  
15 (1) demand-response programs, which are designed to encourage customers to reduce usage  
16 during peak times or to shift that usage to other times; and (2) energy efficiency programs,  
17 which provide a reduction in the overall quantity of electricity consumed over the year, but may  
18 not necessarily reduce the electricity demanded at the hour of system peak (Governor’s  
19 Competitiveness Council 2008). Under Texas House Bill 3693 (signed into law in 2007),  
20 regulated utilities (transmission and distribution utilities [TDUs]) in ERCOT, and the integrated  
21 utilities outside of ERCOT, are required by law to offer DSM programs sufficient to offset 15  
22 percent of the growth in demand by December 31, 2008, and 20 percent of the growth in  
23 demand by December 31, 2009 (Governor’s Competitiveness Council 2008). Although only  
24 regulated utilities are affected inside of ERCOT, success of such programs could affect the  
25 overall demand for electricity in the ERCOT region.

26 Table 8-2 is a less-detailed extension of Table 8-1 to the year 2024 that shows the ERCOT  
27 2009 forecast of demand, reserve margin (ERCOT calculates long-term required resources to  
28 meet peak demand plus 12.5 percent). Total resources estimates and the need for baseload  
29 power are calculated in Section 8.3. The total resources estimate does not include STP Units 3  
30 and 4 or other units projected for completion after 2014.

1 **Table 8-1. ERCOT Peak Demand and Calculated Reserve Margin, 2009-2014**

	2009	2010	2011	2012	2013	2014
Total Summer Peak Demand (MW)	63,491	64,056	65,494	67,394	69,399	70,837
Less: LAARS Serving as Response Reserve and Spinning Reserve, Balancing-Up Loads	1115	1115	1115	1115	1115	1115
Less Energy Efficiency Program (per HB36693)	110	242	242	242	242	242
Firm Load Forecast (MW)	62,266	62,699	64,137	66,037	68,042	69,480
Required Reserve Margin (12.5%)	7783	7837	8017	8255	8505	8685
Required Resources	70,049	70,536	72,154	74,292	76,547	78,165
Estimated Total Resources (MW) (Table 8-3)	72,712	75,314	76,215	77,287	79,122	79,123
Reserve Margin (Resources - Firm Load Forecast)/Firm Load Forecast)	16.8%	20.1%	18.8%	17.0%	16.3%	13.9%

Source: ERCOT 2009b

2

3 **Table 8-2. ERCOT Calculated Reserve Margin, 2009-2024**

	2009	2010	2014	2019	2024
Peak Summer Demand, MW	63,491	64,056	70,837	77,414	82,778
Less: LAAR Spinning and Non Spinning reserve and Balancing-up Loads	1115	1357	1357	1357	1357
Firm Load, MW	62,266	62,699	69,480	76,057	81,421
Plus Reserve Requirements (Peak +12.5%)	7936	8007	8855	9677	10,347
Total Resource Requirements, MW	71,427	72,063	76,692	87,091	93,125
Total Resources, No Retirements	72,712	75,314	79,122	79,123	79,123
Reserve Margin Based on Firm Load	16.8%	20.1%	13.9%	4.0%	-2.8%

Source: Calculated by the review team from tables and figures in ERCOT 2009b.

## 4 **8.3 Power Supply**

5 ERCOT prepares an annual CDR (ERCOT 2009b) on the supply capacity, demand, and  
6 reserves in the ERCOT region. It is developed from data provided by the market participants as  
7 part of the annual load data request, the generation asset registrations, and from data collected  
8 for the annual U.S. Department of Energy Coordinated Bulk Power Supply Program Report.

**STAFF  
ATTACHMENT 2**



**REPORT ON THE CAPACITY, DEMAND, AND  
RESERVES IN THE ERCOT REGION**

**System Planning**

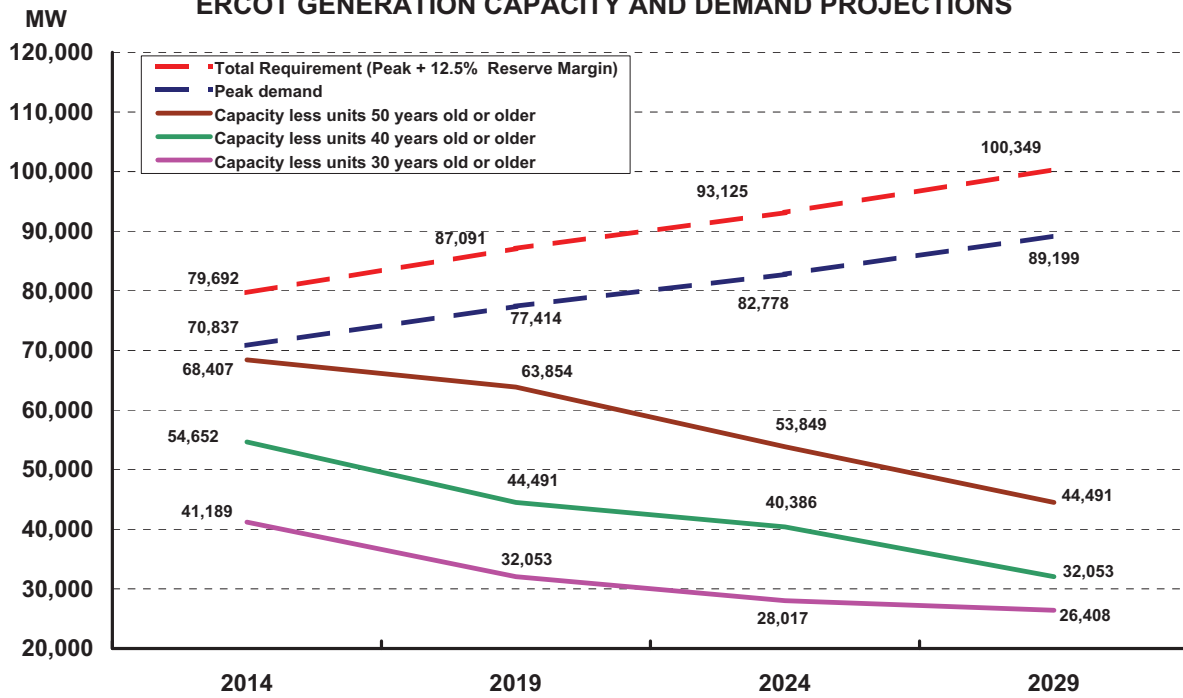
**May 2009**

**ERCOT  
2705 West Lake Drive  
Taylor, Texas 76574**

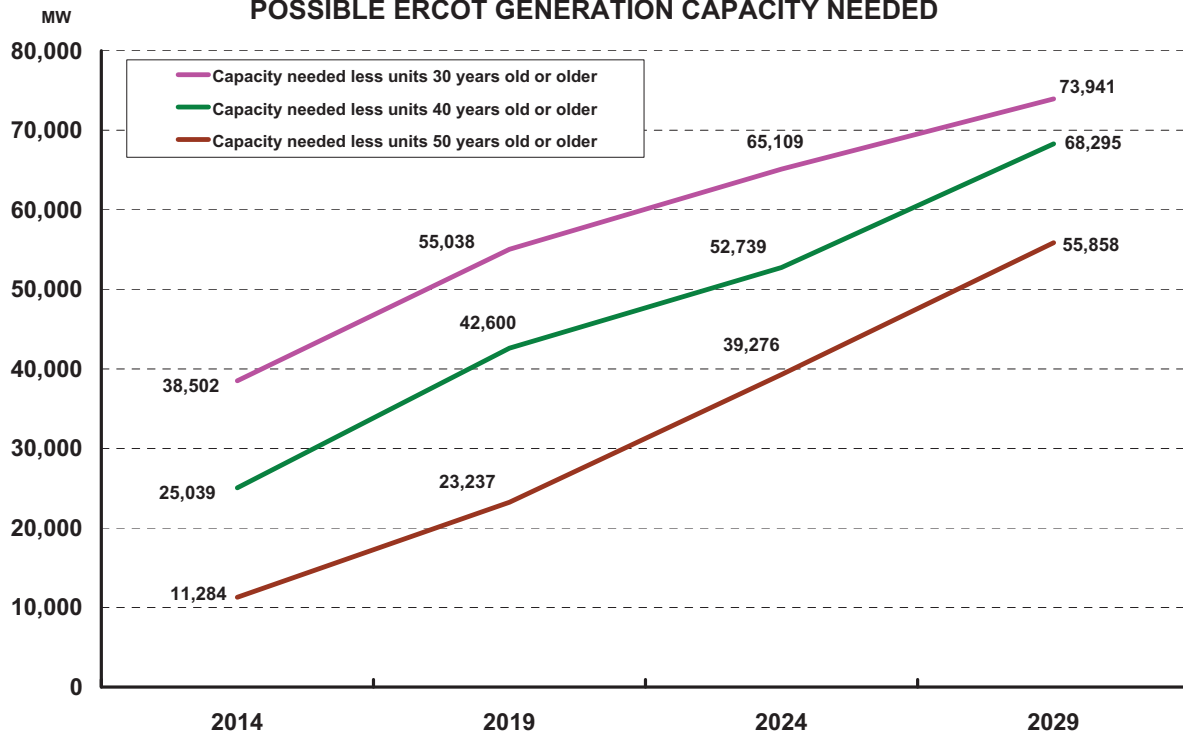


## Long-Term Projections

### ERCOT GENERATION CAPACITY AND DEMAND PROJECTIONS



### POSSIBLE ERCOT GENERATION CAPACITY NEEDED



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of )  
)  
)  
STP NUCLEAR OPERATING COMPANY ) Docket Nos. 52-012 & 52-013  
)  
)  
(South Texas Project, Units 3 & 4) )

CERTIFICATE OF SERVICE

I hereby certify that copies of the NRC Staff letter dated November 1, 2010, with attachments, have been served upon the following persons by Electronic Information Exchange this 1st day of November 2010:

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