

8.0 Need for Power

The electric utility industry in the State of Texas was deregulated in 2002. One of the principal owners of STP 3 & 4 is a merchant generator that does not have a specific service area and the other owner sells excess capacity in the Electric Reliability Council of Texas (ERCOT) wholesale market. Therefore, STP Nuclear Operating Company (STPNOC) has defined the region of interest for evaluating the need for power and alternative sites (Section 9.3) as the entire area served by ERCOT, which is the independent system operator for the electric grid for most of Texas. STPNOC is relying upon several studies performed for or by ERCOT for its need for power evaluation.

This chapter provides an evaluation of the need for power. According to NUREG-1555, an NRC independent evaluation may not be needed if the NRC determines that the State/region-prepared evaluation is (1) systematic, (2) comprehensive, (3) subject to confirmation, and (4) responsive to forecasting uncertainty. As discussed in more detail below, the ERCOT studies related to need for power satisfy these four criteria and provide an appropriate basis for the need for power evaluation for STP 3 & 4.

The following ERCOT studies were used for this evaluation:

- The Report on Existing and Potential Electric System Constraints and Needs (Reference 8.0-1) identifies and analyzes existing and potential constraints in the ERCOT transmission system that could either pose reliability concerns or increase costs to the electric power market and Texas consumers. This report is used in Section 8.1.
- The Long-Term Forecast Model (LTFM) is used in the Long-Term Hourly Peak Demand and Energy Forecast (Reference 8.0-2) to predict the peak hourly power demand and energy consumption for each of the next ten years. Some of the calculations are extrapolated to 2025. The forecast is based on the latest hourly peak demands for the region and adjusted for economic and weather variables. This report is described more completely in Section 8.2.
- The Report on the Capacity, Demand, and Reserves (Reference 8.0-3) is developed from data provided by the market participants as part of the annual load data request, the generation asset registrations, and from data collected for the annual U.S. Department of Energy Coordinated Bulk Power Supply Program Report. The working paper is a series of spreadsheets that compares demand load forecasts from other ERCOT analyses with the generation resources reported to be available by market participants, and calculates reserve margins. This report is the basis for Sections 8.3 and 8.4.
- The last report is the ERCOT Long Term System Assessment (Reference 8.0-4), which uses available data to predict the type and general location of new generation that the market may find economic to construct. ERCOT recognizes in the report that it cannot control these decisions, but the ERCOT estimation of market behavior provides a reasonable basis on which to assess longer-term transmission needs under a range of scenarios.

Subsection 8.4.2 demonstrates that these reports satisfy the criteria in NUREG-1555 for a reliable independent evaluation of the need for power.

As described in Section 8.1, the owners of STP 3 & 4 are NRG Energy and CPS Energy, who are both market participants in the ERCOT system. As such, they recognize ERCOT's legal responsibilities under Public Utility Commission of Texas (PUCT) oversight, and support ERCOT in achieving its vision and mission through the open and collaborative process involving electric industry members, customers, and regulators. NRG Energy and CPS Energy endorse the ERCOT studies that were prepared to inform the PUCT, the Texas Legislature, the public, and the market participants. They accept the assumptions made in the studies and believe that ERCOT is providing valuable and accurate assessments of the ERCOT system for the benefit of all ERCOT members. One of the benefits of deregulation was to consolidate regional planning under a single entity with the expertise and resources necessary to accurately and efficiently ensure that the entire region was proceeding on a course that benefits everyone.

The remainder of this chapter provides the following information:

- A description of the project owners (Section 8.1)
- A description of the PUCT and ERCOT (Section 8.1)
- A discussion of the deregulation of electric generation in the State of Texas and associated market forces (Section 8.1)
- A description of the ERCOT studies and a discussion of the forecast for demand for power provided in those studies (including reserve margins specified by ERCOT) (Section 8.2)
- A discussion of the generation capacity in the ERCOT region (Section 8.3)
- Conclusions related to the need for power from STP 3&4 (Section 8.4)

8.0.1 References

- 8.0-1 ERCOT Report on Existing and Potential Electric System Constraints and Needs, December 2006, available at http://www.ercot.com/news/presentations/2006/2006_ERCOT_Reports_Transmission_Constraints_and_Needs.pdf.
- 8.0-2 2007 ERCOT Planning Long-Term Hourly Peak Demand and Energy Forecast – May 8, 2007, available at http://www.ercot.com/news/presentations/2007/2007_ERCOT_Planning_Long_Term_Hourly_Demand_Energy_Forecast_.pdf.
- 8.0-3 Report on the Capacity, Demand, and Reserves in the ERCOT Region, May 2007, available at <http://www.ercot.com/news/presentations/2007/07CDR05172007-final.xls>.
- 8.0-4 Long Term System Assessment for the ERCOT Region, December 2006, available at http://www.ercot.com/news/presentations/2006/Attch_A_-_Long_Term_System_Assessment_ERCOT_Region_December_.pdf.