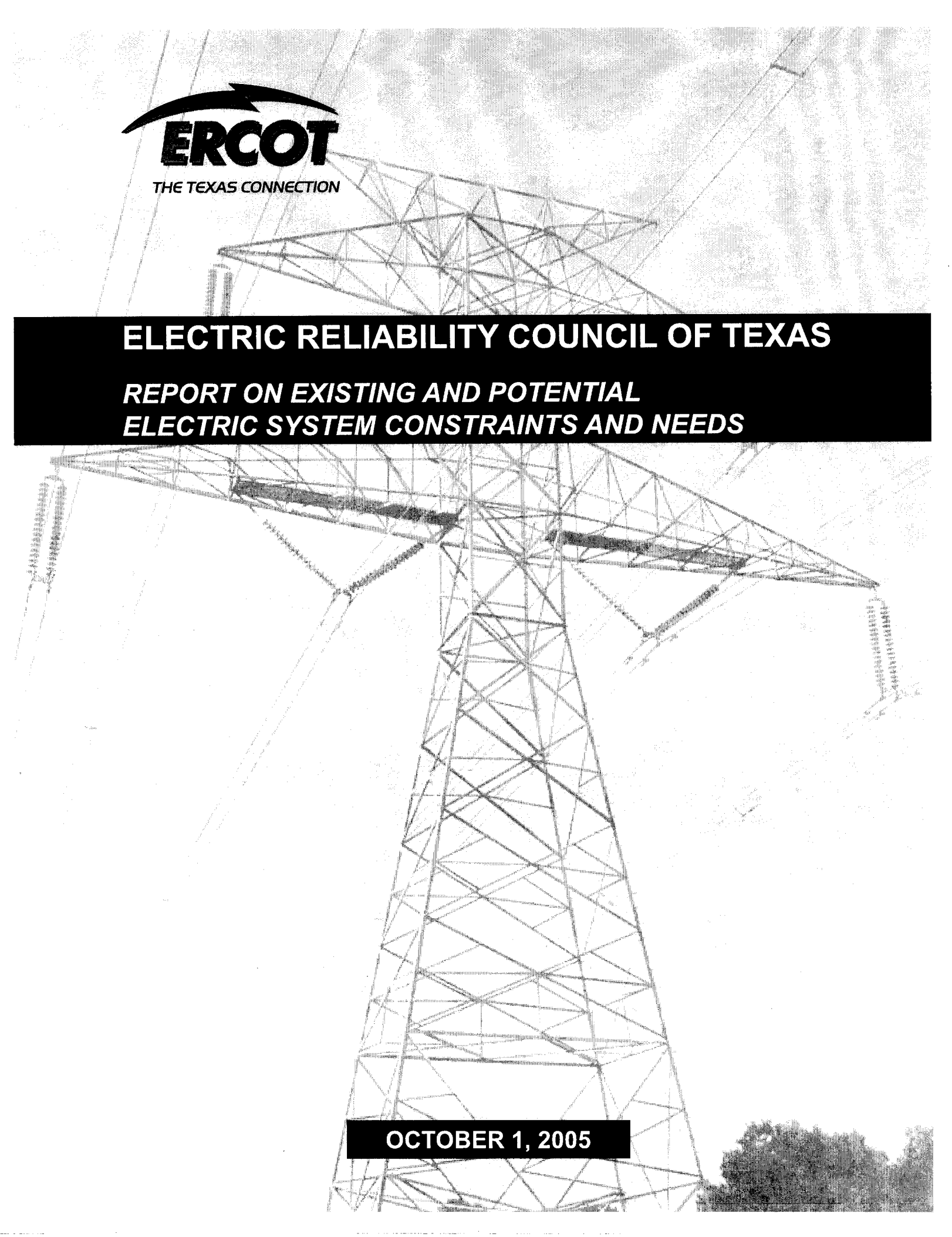

ELECTRIC RELIABILITY COUNCIL OF TEXAS

REPORT ON EXISTING AND POTENTIAL ELECTRIC SYSTEM CONSTRAINTS AND NEEDS

OCTOBER 1, 2005

EXECUTIVE SUMMARY

The Electric Reliability Council of Texas (ERCOT) identifies and analyzes existing and potential constraints in the transmission system that could either pose reliability concerns or increase costs to the electric power market and Texas consumers. Building on past success in planning and developing transmission system improvement projects, ERCOT provides this status report on both completed and on-going studies and identifies projects designed to address transmission constraints as of 2005, completed improvements from 1999 to 2005, planned improvements, and the impact of these projects on future congestion.

As the transmission planning authority for the region, ERCOT works with its stakeholders to identify the need for new transmission facilities based on engineering analysis of five principal factors:

Operational Improvements. ERCOT operations staff has developed and implemented innovative methods for gaining maximum efficiency from the existing network, including the first-ever use of dynamic line ratings in ERCOT.

Load Forecasting. Load forecasts developed by ERCOT planning staff using econometric modeling techniques, as well as delivery point forecasts developed by Transmission Service Providers (TSPs), are used to study projected system needs due to customer load growth.

Generation. Requests to interconnect, change, or decommission generation are processed through ERCOT. Studies of these requests enable planning staff to analyze and respond to the impact of the resulting changes in power injection into the system.

Congestion. Congestion analysis, both zonal and local, is performed on a continuous basis by ERCOT staff to identify areas of recurring and expected congestion.

Transmission System Constraints and Improvements. ERCOT planning staff, taking into account input from stakeholder regional planning groups, evaluates and endorses transmission improvement proposals.

Since 1999 ERCOT TSPs have completed numerous improvement projects totaling over 4,400 circuit miles of transmission lines and 24,600 MVA of autotransformer capacity, with an estimated capital cost of over $2.2 billion. The projects identified in this report to serve the electric system through 2011 are estimated to cost approximately $2.8 billion over the next six years and are expected to add 3,750 circuit miles of high-voltage transmission lines and 23,600 MVA of autotransformer capacity to the ERCOT system.

This report presents data and updates for each area of the ERCOT Region, including defined congestion zones and identified local congestion areas Major findings and projects covering the 12-month period of June 2004 through May 2005 are presented. Zonal congestion costs have decreased from over $80 million in 2001-2002 to less than $30 million in 2004-2005. This decrease can be attributed to the implementation of direct assignment of zonal costs to market participants scheduling energy over the constraint. Intrazonal congestion costs have decreased from over $360 million in 2003-2004 to less than $250 million in 2004-2005. Most of this decrease can be attributed to improvements in the transmission system and operation improvements. The tables below provide a summary of the major improvements in the transmission system. The absence of projects or activity in a zone or area indicates low levels of recent congestion.

Area	Major Completed Improvement	Voltage Level, kV	In-Service Year	Circuit Miles
Central	Fayette - Lytton Springs	345	2000	63
North	Monticello - Farmersville	345	2000	81
North	Limestone - Watermill	345	2001	177
Central	Fayette - Lost Pines - Austrop	345	2001	57
Houston	Channelview Project	345	2001-2002	
South	San Miquel - Pawnee	345	2002	31
North	Farmersville - Anna	345	2002	23
West	Morgan Creek - San Angelo - Comanche	345	2002	214
West	Graham - Jacksboro	345	2002	35
Houston	Cedar Bayou - King - North Belt - T.H. Wharton	345	2002	
Houston	Deer Park	345	2002	
DFW	Venus - Liggett	345	2002	12
South	Coleto Creek - Pawnee	345	2003	108
North	Valley - Anna	345	2003	27
Houston	W.A. Parish - Oasis	345	2004	20
DFW	Watermill - Tricorner	345	2005	11
DFW	Watermill - Cedar Hill	345	2005	17
All Areas	Numerous Autotransformers	345/138	2002-2005	
All Areas	Numerous Lines	138	1999-2005	1,700

Area	Major Planned Improvement	Voltage Level, kV	In-Service Year	Circuit Miles
DFW	Watermill - West Levee	345	2005	9
North	Jacksboro - West Denton	345	2006	66
Central	Cagnon - Kendall	345	2006	45
DFW	Venus -Liggett	345	2006	45
North	Paris - Anna	345	2006	70
DFW	West Levee - Norwood	345	2006	7
Central	Temple Pecan Creek	345	2006	10
DFW	Venus - Johnson	345	2006	24
Houston	Jewett - T.H. Wharton - Tomball	345	2006	32
Houston	STP - Hillje - W.A. Parish	345	2007	118
DFW	DeCordova - Benbrook	345	2007	27
DFW	Ben Davis - Royse	345	2007	17
DFW	Venus - Cedar Hill	345	2007	21
DFW	West Denton - NW Carrollton	345	2009	29
Central	Clear Springs - Salado	345	2010	103
Laredo	San Miguel - Laredo	345	2010	110
DFW	Liggett - Trinity	345	2010	13
McCamey	McCamey - Twin Buttes - Odessa	345		170
All Areas	Numerous Autotransformers	345/138	2005-2011	
All Areas	Numerous Lines	138	2006-2011	2,800

Over the next 15 months, ERCOT is charged with producing these additional studies related to the transmission system in the region:

- At the request of Public Utilities of Texas (PUCT) Chairman Paul Hudson, a detailed "pre-nodal" study will analyze the impact of transmission constraints on marginal generation costs across the region at the nodal level, factoring in projects currently underway. This study will identify and recommend additional transmission upgrades that are economic in alleviating constraints and that allow the electric demands of ERCOT consumers to be served efficiently. The study will be completed January 31, 2006.
- Senate Bill 20, passed by the Texas legislature in special session this year, requires the PUCT and ERCOT to file a biennial report with the legislature that evaluates competitive renewable energy zones to support wind energy development in Texas. The report must include the estimated cost of transmission service improvements needed for each competitive renewable energy zone and an evaluation of the effects that additional renewable generation has on system reliability and on the cost of alternatives to mitigate the effects. The bill also requires the PUCT and ERCOT to study the need for increased transmission and generation capacity throughout Texas and to report to the legislature the results of the study and any recommendations for legislation. The reports may be combined and are due on December 31 of even-numbered years.