



Compliance Update

March 2007



Control Performance Highlights

NERC CPS1 Performance

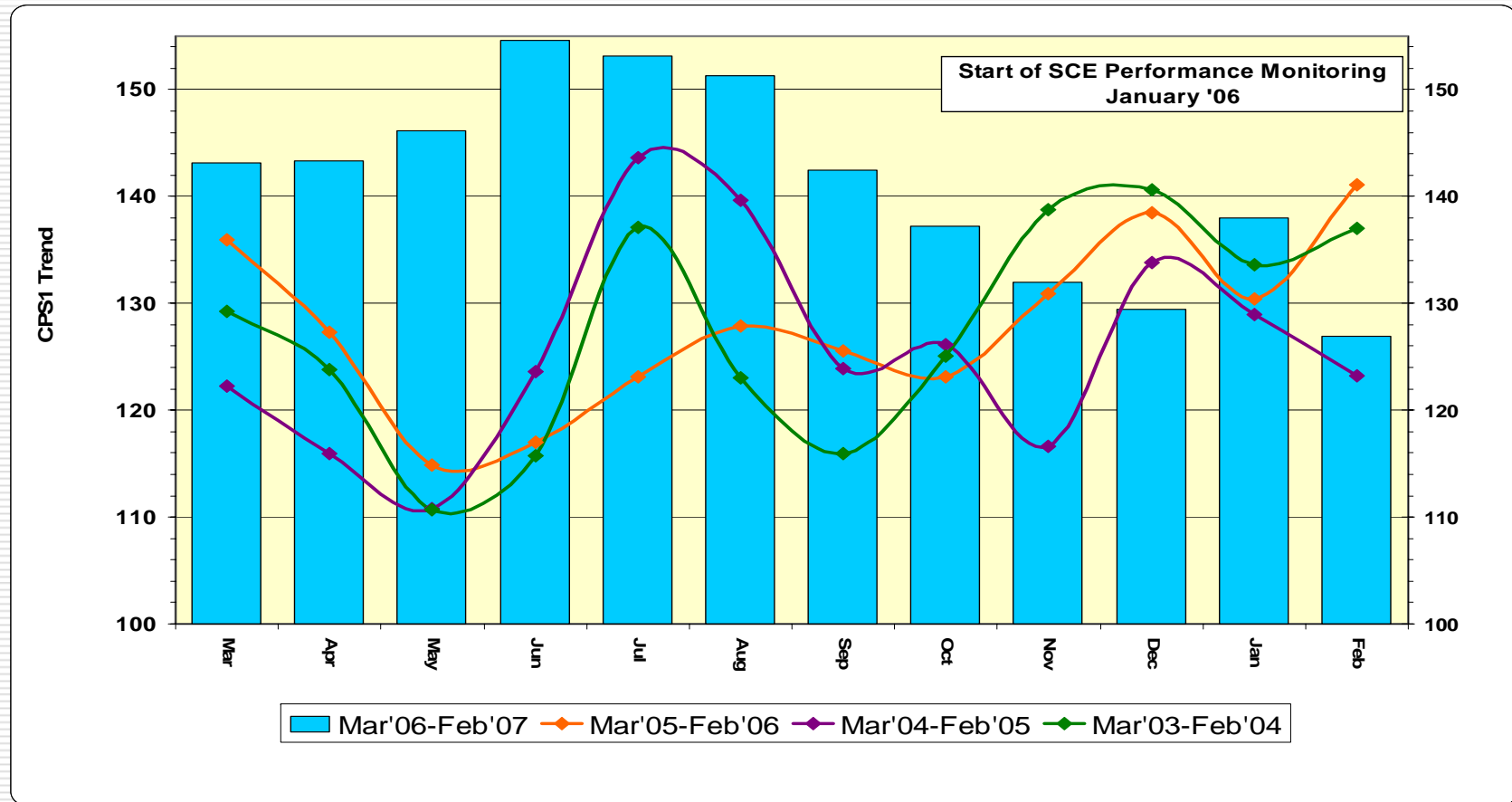
- Performance declined in February
 - February performance comparison
 - February 2007: 126.91
 - February 2006: 141.06
 - 12 month rolling average comparison
 - March 2006 → February 2007: 141.47
 - March 2005 → February 2006: 127.97

PRR 525 Performance

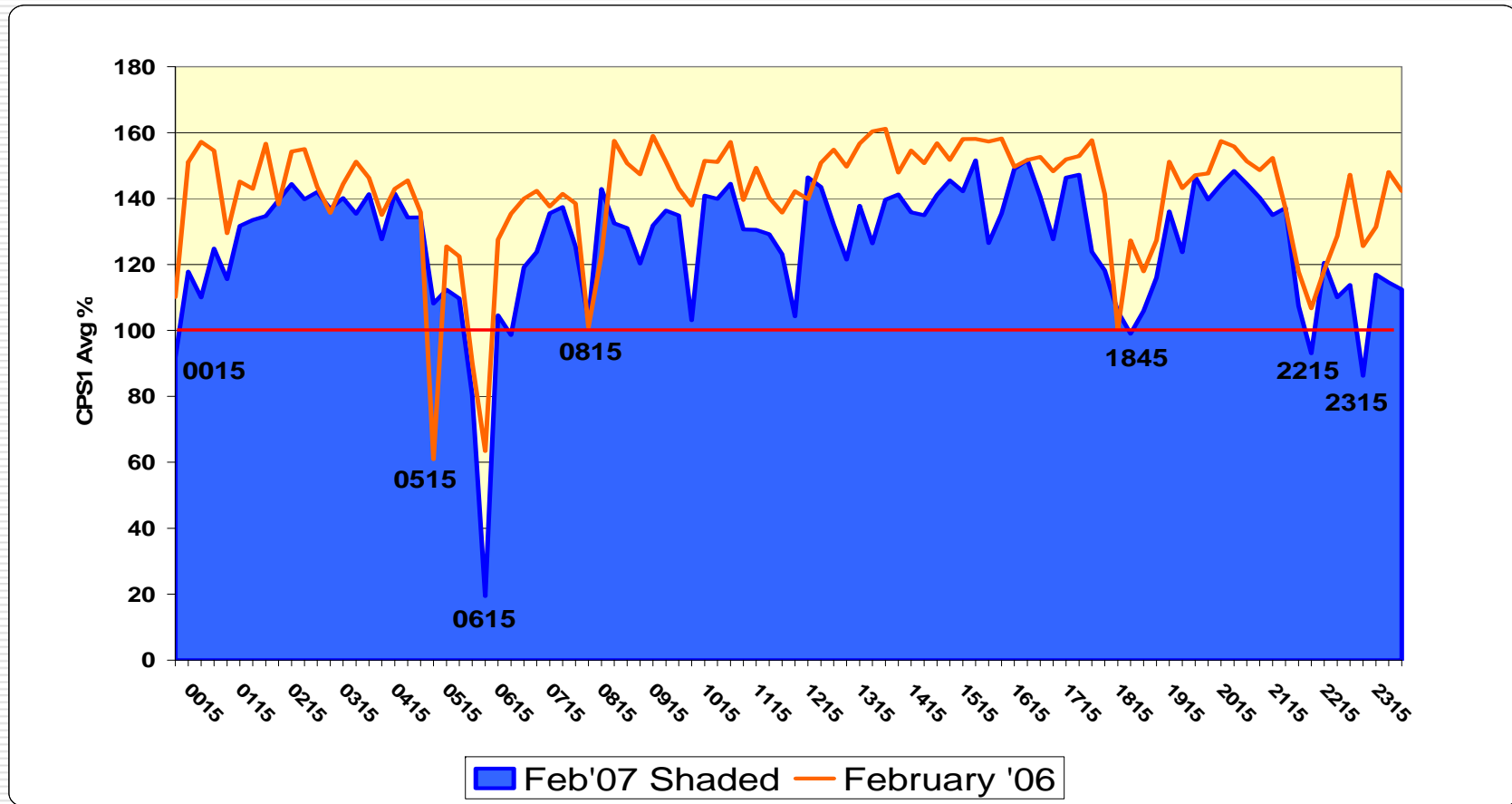
- Initial scores for February indicate 32 QSEs passed / 1 non-wind-only QSE failed the measure
- Scores posted on the ERCOT Compliance Website
 - [SCE Performance Scores](#)



ERCOT CPS1 Performance Comparison

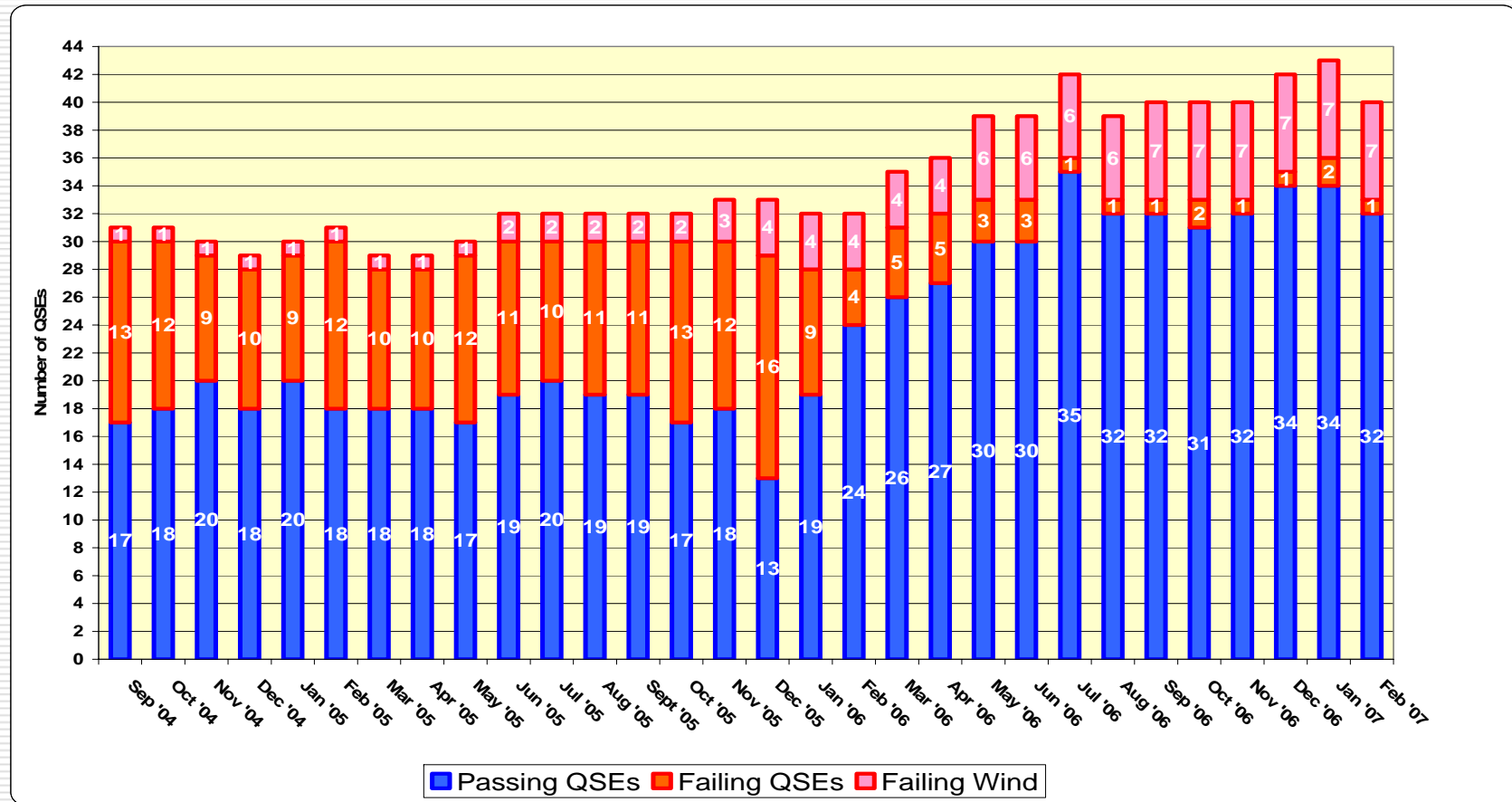


ERCOT CPS1 by Interval





QSE PRR525 10-Minute Interval Scoring





February 2007 Resource Plan Performance Metrics

Resource Plan Metric	ID																							
	DK	BT	DE	IP	AP	AO	HA	BY	BC	JA	AY	AM	AR	BR	HJ	DF	BP	CI	AD	BJ	BH	CJ	CF	ET
Resource Status	100	-	100	100	99	99	99	100	100	100	95	97	100	100	-	100	100	100	100	100	-	100	100	98
LSL HSL Percent Score	85	-	100	97	100	100	100	98	100	100	100	99	99	98	-	84	79	99	99	99	-	100	98	96
DA Zonal Schedule	95	92	95	100	100	100	99	100	100	100	97	100	99	99	93	100	100	86	100	100	100	100	100	
Adjustment Period Zonal	93	94	100	100	100	100	97	99	99	100	98	99	96	99	97	100	87	88	100	98	99	100	99	98
Down Bid & Obligation	76	94	96	100	98	96	94	98	99	97	99	97	100	97	97	94	92	88	99	98	99	98	99	79
Total Up AS Scheduled Obligation	-	-	100	-	96	98	98	98	100	100	98	97	100	99	-	100	-	-	-	-	-	100	100	95

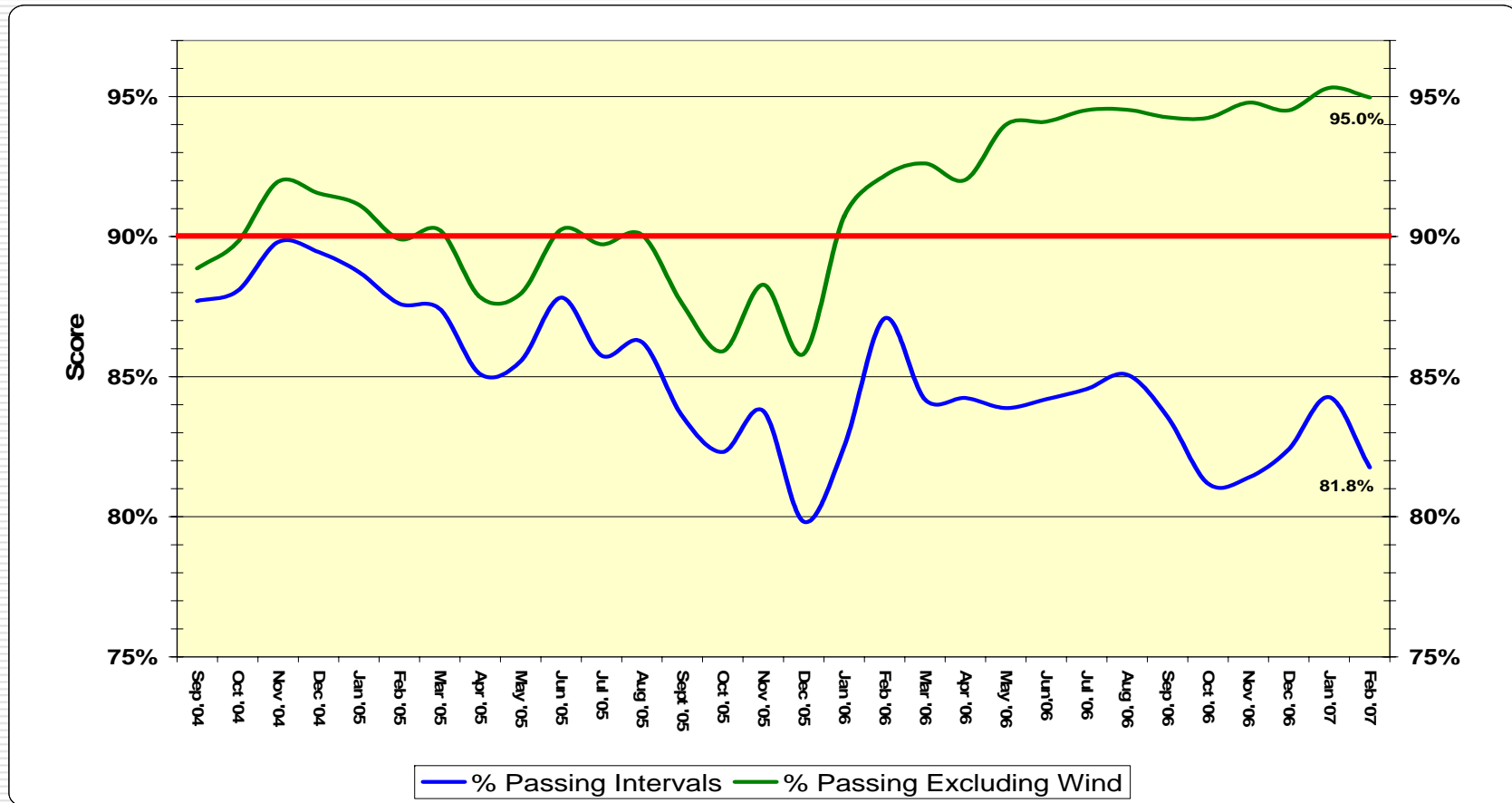
Resource Plan Metric	ID																							
	DA	GR	BF	BE	DP	BG	GH	CX	FK	HW	IN	IZ	BX	CC	CD	FR	FS	AC	CQ	IV	IO	AE	FY	
Resource Status	100	-	-	-	100	100	100	98	99	100	99	100	99	100	97	100	100	100	99	-	100	-	-	
LSL HSL Percent Score	100	-	-	-	100	100	-	100	100	100	81	94	99	100	86	-	100	100	97	-	-	-	-	
DA Zonal Schedule	100	100	100	100	-	100	-	98	99	93	95	99	100	81	99	-	100	100	95	100	-	-	-	
Adjustment Period Zonal	99	100	100	77	100	99	-	100	99	96	97	95	98	97	100	-	100	100	99	100	-	-	-	
Down Bid & Obligation	98	100	100	100	100	100	-	98	100	100	99	96	96	88	96	-	-	100	99	95	-	-	-	
Total Up AS Scheduled Obligation	92	-	-	-	88	100	-	100	98	100	75	54	99	100	100	-	-	-	100	-	-	100	100	

■ 4 Consecutive Failing Scores ■ 3 Consecutive Failing Scores

■ 2 Consecutive Failing Scores ■ 1 Failing Score



525 Passing 10-Min Interval Percentage Trends





ERO / RE Activities

- ❑ March 2nd: Latest draft of Entity Registration List submitted to NERC (work-in-progress)
- ❑ April 2007: Anticipated that FERC will rule on Regional Delegation Agreements certifying the Texas RE to be the Regional Entity for the ERCOT Region
- ❑ May 2007: Submit 1st draft of 2008 Texas RE Business Plan & Budget to NERC
- ❑ June 2007: NERC Reliability Standards in place – mandatory compliance enforcement expected to begin



October 3, 2006 Event Overview

- Initiated at Gibbons Creek Substation in Bryan/College Station Area
 - 138 kV coupling capacitor voltage transformer (CCVT) failed catastrophically
 - Current-sensing components of the backup protective relay failed due to high fault current
- 1,214 MW of generation lost – NERC Disturbance Control Standard (DCS) Event
 - Frequency recovered to pre-disturbance level in approximately 3 minutes – NERC criteria met; no NERC Reliability Standards violation
- 339 MW of firm load shed in area



October 3, 2006 Event Observations

□ LaaR Performance

- ERCOT deployed all RRS being provided by LaaRs in accordance with ERCOT DCS Event Operating Procedures.
- Six of ten QSEs with LaaR RRS awards did not respond with 95% of their award within 10 minutes.
 - 642 MW tripped – 1,150 MW obligation
 - Took over 20 minutes to achieve 95% of obligation
- Seven Protocol Violation Notices issued.
 - Six notices related to Section 6.5.4(2) – tripping requirements for LaaR
 - 1st occurrence – Constellation
 - 2nd occurrence – Formosa, Reliant, Suez, Tenaska, & Xtend (also had violations on April 17th)
 - One notice related to Section 6.5.1.1(4) – telemetry requirements
 - Xtend



October 3, 2006 Event Observations

□ LaaR Performance

- QSEs receiving Protocol Violation Notices have substantially completed corrective actions.
- Currently, all requirements to perform apply to QSEs – should some be shifted to individual LaaR?
- PRR 714 Qualification and Periodic Testing of LaaR developed – tightens the requirements for initial qualification; introduces periodic testing requirements; and provides for more clearly defined conditions that would disqualify a LaaR for under/non-performance.



October 3, 2006 Event Observations

□ Generator Trips

- Review of protective relay coordination of generators, per Operating Guides 3.1.4.6, requires TDSP input, as well as generator data – very technically demanding.
- Other related NERC and ERCOT requirements on protective relaying lack specificity but point out the need for review of relaying coordination between generators and TDSPs (for example, "...the protection scheme should be coordinated between the Generation Entity and the TDSP...").
- Generators need to perform mis-operations analysis – now a NERC requirement – but standards do not specify timeliness.



October 3, 2006 Event Observations

□ Transmission Issues

- Work in progress to upgrade transmission protective relaying to current ERCOT Operating Guides which is required for new facilities only.
- Completing grid improvements planned in the area will reduce chances of reoccurrence. Scheduled completion by Summer 2008.
- Review switching responsibilities in Operating Guides for opportunities to clarify language. NERC Standards assign this responsibility to ERCOT as the registered NERC TOP.



October 3, 2006 Event Observations

□ System Restoration

- Need to improve operations plans for switching and restoration by local companies in area. At least 7 TDSPs needed to work with each other and ERCOT.
- Need to improve internal communications to key facilities within TDSPs. Current requirements focus only on communications to ERCOT, not locally to facilities and local control centers.



December 22, 2006 Event Overview

- ❑ Initiated by fault in main power transformer at generating station
- ❑ Local and remote generators tripped or reduced output ~1,900 MW.
- ❑ Frequency spiked to 59.691 Hz. – LaaR automatically deployed (~830 MW); not all tripped. ERCOT issued instructions to QSEs to deploy remaining LaaR.
- ❑ EECF Step 1 declared.
- ❑ Event reported to NERC – generation loss exceeded amount required to qualify as a NERC DCS Event.
 - Frequency recovered to pre-disturbance level in approximately 9 minutes



December 22, 2006 Event Observations

□ Generator Trips

- Again, generators need to perform timely mis-operations analysis – NERC Standards do not specify this.
- Ride-through capability of generators during disturbances was reviewed, and this requires specific technical expertise and fault recorder information from TDSPs as well as generator owner input. It appears that some generation should not have tripped if Operating Guides requirements were met.
- Violation Notice issued to Generator Owner for non-compliance with an ERCOT Operating Guides Requirement – Operating Guide 3.1.4.6.



December 22, 2006 Event Observations

LaaR performance

- Three Protocol Violation Notices issued.
 - One notice related to Section 6.5.4(2) – tripping requirements for LaaR – Suez
 - Two notices related to Section 6.5.1.1(4) – telemetry requirements – Tenaska & Xtend
 - Required corrective actions in progress
- ERCOT Operations to ask for retest of certain LaaR under-frequency relays that did not trip automatically. No violations determined due to lack of high-speed frequency recordings at these locations and very short time that frequency dipped below 59.7 Hz. High speed frequency recorders in Austin may not be sufficient to validate frequency-triggered LaaR performance across the grid.