



Voltage Ride-Through (VRT) Study Update

Dan Woodfin
Director, System Planning

Board of Directors

11/17/2009

- **OGRR 208 required ERCOT to complete a study of the need for additional VRT capabilities on existing wind generators**

WGRs that are part of a Generation Interconnect Agreement signed prior to November 1, 2008 shall provide information requested by ERCOT, including existing WGR VRT capabilities, for a study to evaluate the need for additional protective relaying and VRT requirements applicable to some or all such WGRs. The study will be conducted using the 2009-2010 transmission system as determined by ERCOT. The study shall be conducted by a qualified organization having no real or apparent bias and with no financial interest in the outcome of the study. ERCOT shall publish study results and provide recommendations to ROS no later than the scheduled ROS meeting of June 2010.

- **Study is to be completed by June 2010**

Study Overview

- **ERCOT Issued and RFP and contracted with Parsons Brinckerhoff (PB) World to perform study**
- **Study is made up of three Phases**
 - **Phase I** (to be completed by end of 2009)
 - Perform dynamic fault studies with datasets updated by existing information from WGRs to prepare for Phase III Study
 - **Phase II** (to be completed by end of 2009)
 - Obtain detailed additional and updated information from individual WGRs to develop appropriate WGR dynamic modeling
 - **Phase III** (to begin in January 2010 and to be completed by May 2010)
 - Perform dynamic fault studies with improved modeling information from Phase II
 - Include any knowledge gained from Phase I
 - Identify any reliability problems and investigate solutions

Progress To Date

- **Phase I**

- PB has nearly completed analysis and is currently in process of contingency and other validation and then finalizing interim report on Phase I
- ERCOT will present Phase I report to ROS next month
- Phase I preliminary findings, based on existing and some Phase II information:
 - Identified modeling techniques and improvements for Phase III
 - Performed analyses and identified faults/contingencies with significant impact
 - Did not identify need for immediate operational response based on this Phase I analysis

Progress To Date

- **Phase II**

- PB has received requested data from approximately 70% of WGRs
- ERCOT will escalate by ERCOT Client Services sending requests to Official Contact for each WGR that has not responded or responded incompletely – Protocol requires WGRs to provide data requested for this study
- PB is in process of developing enhanced models for WGRs that have already responded
- These enhanced models will be used in Phase III in January

Questions?