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| **SP-05 Impact of Wind Turbines on System Inertia:** Determine the potential impact on system reliability of large amounts of wind turbine generating capacity on ERCOT’s system inertia requirements. This is the second of two entries on this topic. The first one was SO-08 which was resolved in October 2008 by a PDCWG (Performance, Disturbance, Compliance Working Group) presentation to ROS. SP-05 is looking to the future problem of maintaining system frequency as the sum of installed wind power capacity approaches the system minimum load. | |
| **Priority** | Medium |
| **Considerations** | Policy: No policy considerations |
| Reliability: The reliability concern is that windplants do not automatically respond to frequency deviations in the same way synchronous generators do. As the proportion of synchronous generation decreases, maintaining frequency will require more operator action, either in advance by under-frequency load-shed relay settings, or in real-time reaction by the operators at the Frequency Desk. |
| Technical: The technical challenge is how to operate the grid reliably with fewer synchronous generators available to respond automatically to frequency deviations. |
| Market: No market considerations |
| Performance/Compliance:  ERCOT: NERC CPS1 and DCS criteria and Balancing Authority ACE limit  QSEs with synchronous generators: Correct SCE bias settings  Wind-only QSEs: None now |
| Cost Allocation: Unknown at this time |
| **Strategy** | ERCOT Planning staff will study the problem.  Recommendation: The recommendations will not be known until the study has been done. |
| **Activities** | ERCOT: ERCOT Planning staff will study the problem. |
| Market Participants: Unknown at this time |
| **Follow-Up** | This will be a recurring study as the wind percentage of all ERCOT generation increases. |
| **Schedule** | ERCOT already provided data to NERC. When the NERC study is written it will inform ERCOT’s study. ERCOT staff will start this study when the VRT study is done (June 2010). |