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| **SO-12 Low Voltage Ride Through (VRT) for Wind Generators:** System reliability requires that during short circuit conditions (transmission system faults) that generators stay on line during the short circuit and after it clears. WGRs had been given specific exemption from fault tolerance requirements. As more WGRs were added to the ERCOT system, a process to establish fault tolerance standards for new WGRs was initiated. This process has been completed.  SP-03 identifies the VRT issue for WGRs. The issue was divided into two parts for follow through; SO-12 dealing with establishing new standards for new WGRs and SP-08 dealing with studies related to existing WGRs. A portion of the discussion is repeated in these three issue write-ups to allow each to be complete. | |
| **Priority** | High |
| **Considerations** | Policy: Not for new WGRs. A policy issue did develop for existing WGRs (see Sp-03 and SP-08). |
| Reliability: The ability of generators to have a reasonable level of fault tolerance is critical to system reliability. During system fault conditions, voltages electrically close to the fault are depressed and generators may come off line if the depressed voltages last too long. The fault tolerance requirements can be met by designing the transmission system to clear faults quickly and by designing generators to remain on line for certain low voltage situations. WGR fault tolerance must be evaluated / designed to function for typical transmission fault clearing times. |
| Technical: There is no significant technical challenge to designing new WGRs to meet fault tolerance requirements. |
| Market: New requirements would cause certain wind-powered turbines to no longer be able to be supplied for WGRs in ERCOT. The provision of fault tolerance for new WGRs from other wind-power turbine suppliers will increase WGR capital costs. There will not typically be any significant change in operating costs for new WGRs. There is little expected change in the competitive landscape for new WGRs that comply with new fault tolerance standards. |
| Performance/Compliance: New standards will require routine compliance requirements. |
| Cost Allocation: There is no cost allocation issues associated with new WGRs, costs will be borne by the new WGR. |
| **Strategy** | Establish new requirements for new WGRs that balance WGR capabilities and transmission system design requirements.  Recommendation. Adopt an Operating Guide Revision Request establishing new standards for WGR Voltage Ride Through to provide WGR fault tolerance capability. |
| **Activities** | ERCOT (E X): Participate in the process of establishing new standards. |
| Market Participants (MP X):  TSPs, generators and all market participants actively participate in the development of new standards for WGRs. |
| **Follow-Up** | None |
| **Schedule** | 11/17/2008 Operating Guide Revision Request 208 approved establishing new Voltage Ride Through standards for WGRs (see SO-12). |