



Sub-Synchronous Resonance Outage Monitoring Proposal

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Concept

- ERCOT has seen increased reliance on ERCOT's outage monitoring procedures that is becoming unsustainable
- ERCOT would like to explore tweaking the SSR study requirements

Background: SSR Outage Monitoring

- Outage monitoring was designed to manage generators with N-5 and N-6 SSR concerns
- The monitoring is programmed into the ERCOT EMS system to watch for outages leading to an SSR condition
 - When a generator is two outages away from SSR, the EMS system notifies ERCOT operators to take action
 - Possible actions: Bypass series cap, recall outages, turn off generator



Concerns using SSR Monitoring for new projects

- ERCOT is seeing a substantial increase in number of generators needing SSR monitoring (because they have N-5 or N-6 SSR concerns and chose not to install mitigation)
 - Last year we nearly doubled the total generators requiring monitoring
 - Looking at the GINR queue, more are expected
- Because of the way monitoring works, a single generator may have multiple monitor conditions making series cap bypass more likely
 - SSR monitoring was really only intended to cover a small number of pre-existing units when the series caps were built to improve transfer capability. It was not intended to help new generators avoid installing mitigation
- When a potential SSR concern is identified in real time operations, actions could involve bypassing the series capacitor
 - This could reduce transfer capability and lead to curtailment
 - Thus: *More generators needing SSR monitoring because did not install mitigation → more likelihood series caps will be bypassed → potential for more curtailment*

Example Language Proposal

- Protocol 3.22:
 - Require Mitigation for N-1 thru N-6 for new projects

(3) If the SSR study performed in accordance with paragraph (2) above indicates that the Generation Resource is vulnerable to SSR in the event of ~~four~~six or less concurrent transmission Outages, the IE shall develop an SSR Mitigation Plan, provide it to the interconnecting TSP for review and inclusion in the TSP's SSR study report to be approved by ERCOT, and implement the SSR Mitigation prior to Initial Synchronization.

- This would have the positive benefit of reducing the need to bypass the series capacitors which could in turn maintain greater transfer capability

Questions?

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