

NYISO Transmission System Interconnection Special Studies – Project Q543

As part of the Q543 Segment B project, a two-step series compensation system (16.67% and 33.33%) with bypass switching provisions will be added on the new 54-mile K-PV line at the proposed K-PV Switching Station. As the series compensation system introduced into the NYISO operating area where several combined cycle generating facilities are existing nearby, the series compensation system may establish an electrical resonance in the system that occurs at frequencies below the system synchronous frequency of 60 Hz. This type of sub-synchronous resonance (SSR) has been shown to result in several types of phenomena that have the potential for causing severe damage to turbine-generators. And therefore, the special study was required for the project to assess the potential for occurrence of these SSR phenomena on generators near the series compensated line.