

December 14, 2021

## Electric Power Group (EPG) Deploys Automated Generator Model Validation Application for PJM Interconnection (PJM)

Electric Power Group, LLC, located in Pasadena, CA, USA has deployed its state-of-the-art Automated Generator Model Validation (GMV) application at PJM Interconnection, grid operator in the Eastern Interconnection of the U.S. with generating capacity of 185,000 MW. With EPG's GMV application, users can perform the required model validation using PMU data without having to take generator units offline and potentially disrupting the flow of power. The model validation process is fully automated, performed in near real-time, and is triggered when events and system disturbances are detected to ensure models are accurate for real-time assessments.

Generators are one of the most critical components in determining power system response to events and disturbances. Inaccurate generator models, which can result in incorrect assessments of system response, may result in instability or blackouts. For example, during the August 1996 major blackout that impacted seven western US states, models indicated a well damped response when the measured power flow was undamped and showed large oscillations.

Like EPG's other tools and applications, GMV is designed to provide actionable intelligence in real-time using Synchrophasor data. The GMV application works in conjunction with EPG's *eGENS* (*enhanced* Grid Event Notification System) which detects significant events such as generation trips, line trips, and load trips based on voltage and frequency excursions from PMU data. The GMV application automatically performs model validation in real-time based on these events, and identifies those generators with accurate models and those that require further investigation.

Managing electric power grids with changing generation mix and the addition of renewable technologies, changes the dynamic behavior of the power grid. PJM has been a leader in the use of Synchrophasor applications to enhance grid stability and using tools such as GMV to reduce the potential likelihood of instability or a blackout in an automated and cost-effective manner. EPG has been working with PJM since 2010 with its Wide Area Monitoring Systems (RTDMS), *enhanced* Linear State Estimator (eLSE) and Offline Analytics Applications in use in Operations.