



MISO Adopts TSAT as a Standard Tool for Transmission System Planning

The Midcontinent Independent System Operator, Inc. (MISO) has adopted Powertech's Transient Security Assessment Tool (TSAT) for the first time as a standard tool for off-line transient stability analysis in its transmission system planning.

The software is being used in conjunction with a broader MISO effort to develop an efficient, robust, and repeatable process to perform transient stability analysis for the MISO Transmission Expansion Planning (MTEP), and to meet the increased requirements for TPL compliance from the North American Electric Reliability Corporation (NERC).

The TPL standards are for long-term transmission planning to address the impact of proposed transmission and generation, as well as forecasted load changes. In the MISO TPL studies, new computational scenarios and an increased number of contingencies need to be considered, essentially doubling the analysis workload to be completed in the same timeframe.

Application of TSAT as a standard tool for transmission system planning replaces another tool that MISO had previously used for many years, and is part of the ISO's ongoing objective to find efficiencies, reduce defects, and improve outcome quality. MISO Real Time Operations has been using TSAT for on-line stability analysis in the production environment since 2012.

Benefits of Application of TSAT

MISO estimates that use of TSAT for transmission system planning will achieve an expected time savings of 60%, compared to previous practices. Among its advantages, TSAT enables automatic post-processing of results, automatic application of individual Transmission Owner (TO) criteria, automatic transfer analysis of Facility Connection (FAC) requirements, and synchronization of real-time operations and planning models. In addition, it requires minimal man-hours to implement and to maintain going forward.

Powertech's TSAT

TSAT was developed by Powertech for transient stability analysis in planning and operation studies in off-line or on-line modes. Its core technology is a nonlinear time-domain simulation engine that enables security assessment based on criteria for transient stability, damping, transient voltage/frequency, and relay margins. TSAT includes many leading-edge features such as advanced modeling capabilities, automatic stability limit determination, distributed computations, etc. It is widely used by ISOs, utilities, and others around the world as part of Powertech's DSA Tools™ suite of state-of-the-art power system analysis tools.

MISO

MISO serves as an Independent System Operator (ISO) for 15 states in the mid-western United States and one Canadian province. It schedules power on an electric grid that connects more than 65,000 miles of transmission lines and more than 180 GW of generation capacity.

ABOUT POWERTECH LABS:

Powertech Labs Inc. is one of the largest testing and research laboratories in North America, situated in beautiful British Columbia, Canada. Our 11-acre facility offers 15 different testing labs for a one-stop-shop approach to managing utility generation, transmission and distribution power systems.

Outside of the utilities industry, Powertech provides routine testing capabilities, product development, research and consulting services to support an array of industrial-type operations, electrical equipment manufacturers and automotive original equipment manufacturers.

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