

PowerWorld Simulator: Common Tools, Steady-State Security, and Transient Stability Analysis

June 2-6, 2025 • Bellevue, WA, USA

Presented by: PowerWorld Corporation
Hosted by: Puget Sound Energy
355 110th Ave NE • Bellevue, WA 98004

June 2

- 8:30 - 10:00 I1: The PowerWorld Simulator Case Editor and One-line Diagrams
- 10:00 - 10:15 Break
- 10:15 - 12:00 I1: The PowerWorld Simulator Case Editor and One-line Diagrams (continued)
- 12:00 - 1:00 Lunch
- 1:00 - 2:30 I3: Model Explorer and Case Information Displays
- 2:30 - 2:45 Break
- 2:45 - 3:30 I4: Auxiliary File Format: DATA Section
- 3:30 - 4:30 I5: Data Aggregation using Areas, Zones, Interfaces, Super Areas, Injection Groups

June 3

- 8:30 - 9:45 I6: Contouring and Advanced Visualization
- 9:45 - 10:15 I7: Power System Analysis and Voltage Control
- 10:15 - 10:30 Break
- 10:30 - 11:30 I7: Power System Analysis and Voltage Control (cont)
- 11:30 - 12:00 I8: Generator and Area MW Control through Interconnected System Operation
- 12:00 - 1:00 Lunch
- 1:00 - 1:15 I8: Generator and Area MW Control through Interconnected System Operation
- 1:15 - 1:45 I9: Limit Monitoring Settings
- 1:45 - 2:30 I10: Intro to Contingency Analysis
- 2:30 - 2:45 Break
- 2:45 - 3:45 I11: Linear Analysis (PTDF, TLR, GSF, LODF, OTDF)
- 3:45 - 4:15 I12: Auxiliary File Format: SCRIPT Section

June 4

8:30	-	10:00	S3: Techniques for Conditioning Hard-to-Solve Cases
10:00	-	10:15	Break
10:00	-	12:00	S4: Advanced Contingency Modeling
12:00	-	1:00	Lunch
1:00	-	1:15	S4: Advanced Contingency Modeling (continued)
1:15	-	2:30	S5: Available Transfer Capability (ATC Add-on)
2:30	-	2:45	Break
2:45	-	3:45	S6: Voltage Stability Using PV Curves (PV Add-on)
3:45	-	4:30	S7: Voltage Stability Using QV Curves (QV Add-on)

June 5

8:30	-	10:15	S8: Security Analysis for a Generator Interconnection Study
10:15	-	10:30	Break
10:30	-	11:15	S8: ... Interconnection Study (continued)
11:15	-	12:00	S10: Integrated Topology Processing (ITP Add-on)
12:00	-	1:00	Lunch
1:00	-	1:30	TS_01: Model Relationships: Machine, Exciter, Governor, Stabilizer, Turbine Load Controller, Other
1:30	-	2:00	TS_02: Input Data: Generator Models, Load Models, Model Explorer, interchange with DYD or DYR files, GENCC models
2:00	-	2:15	Break
2:15	-	2:45	TS_02: Input Data: Generator Models... (continued)
2:45	-	3:30	TS_03: Transient Stability Basics: Model Initialization, Initial Limit Violations, State Equations
3:30	-	4:15	TS_04: Model Validation: Time Constants, Machine Parameters, Limits
4:15	-	5:00	TS_05: Transient Contingency Definitions, Sample Simulation

June 6

8:30	-	9:15	TS_06: Result Storage: Results Available (Fields, Inputs, States, and Others); RAM and Disk; Result Options
9:15	-	10:15	TS_07: Plot Definition
10:15	-	10:30	Break
10:30	-	11:15	TS_08: Plot and Results Display: Plot Interaction, Max/Min Values, Time Values, Events
11:15	-	12:00	TS_09: Processing Multiple Contingencies
12:00	-	1:00	Lunch
1:00	-	1:30	TS_10: Transient Limit Monitors: Generic Limit Monitors, User-Defined Limit Monitors, Monitor Violations
1:30	-	2:00	TS_11: SMIB Eigenvalues
2:00	-	2:15	Break
2:15	-	2:45	TS_12: Wind Turbine Modeling
2:45	-	3:45	TS_13: Play In Signals and Scripts
3:45	-	4:30	TS_14: Large-Scale Simulation Example