

WECC

Short-Circuit Modeling Work Group (SCMWG) RAC Meeting

June 2023

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Agenda

- What is the work?
- What are the issues with short-circuit duty studies?
- What is the work being done by SCMWG?
- Short-Term Plan
- Long-Term / Year-by-Year Work
- Recommendation



Supporting the Work

- The work of calculating faults, setting relays, and determining equipment sizing is being done by the utilities' planning/protection departments.
- SCMWG is supporting the work to model the electrical network needed to have accurate calculated faults for different needs.



Short-Circuit Duty (SCD) Modeling Issues

- Data conversion issues*
 - Two major SCD programs in WECC:
 - Aspen OneLiner
 - Siemens Electrocon CAPE
 - Data is not easily converted between software platforms
 - Loss of data fidelity when converting between software platforms
- Data consistency issues*
 - Naming convention is not consistent
 - Modeling convention is not consistent

*Addressed in current work being done



Short-Circuit Duty Modeling Issues (cont.)

- Short-circuit duty calculation issues*
 - If data has been synchronized, calculations of fault currents are not consistent due to settings and assumptions
 - Assumptions are not transferred when importing or exporting
- Inverter-based resource modeling issues*
 - Current models are not adequate for setting relays or equipment sizing
 - Models cannot be reduced

*Addressed in current work being done



Current Work Being Done

- Data conversion work:
 - The SCMWG is investigating and trying to get appropriate add-ons to test the Common Information Model (CIM) to find out whether this is a good way forward
- Data consistency work:
 - Creating the Short-Circuit Users Preparation Resource (SUPR) to help standardize the network model
- Short-circuit calculation work:
 - SUPR will have recommendations for settings

Current Work Being Done (cont.)

- Inverter-based resource modeling work:
 - Investigated all available models
 - Holding industry meetings to develop a better model
 - Working with MVS for modeling specification



<Public>

Short-Term Work Plan

- Work on IBR modeling with stakeholders to get more engagement to determine a suitable new model that can be developed
- Work on the SUPR to have more consistent dataset for coordinating cases
- Work on the standardizing data format to work within WECC utilities
- Work on a WECC-wide SCD case while editing the SUPR



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Long-Term / Year-by-Year Work

- Publish and maintain the SUPR
- Maintain standardized data format to be used by WECC utilities
- Publish WECC-wide SCD cases each year to meet different study scenarios
 - Low system inertia / short-circuit duty strength
 - High inertia
 - Etc.
- Maintain and coordinate SCD IBR models

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Recommendations

- Convert the Short-Circuit Modeling Work Group to Short-Circuit Modeling Subcommittee
- Continue short-term work plan and start on long-term / yearly work to be done





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