WECC

Base Case 101

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Base Case Compilation Schedule

- SRS page on wecc.org
- Case description:
  - Purpose
  - Suggested starting case and dynamics
  - Loads
  - Time
  - Generation targets
  - Interchange targets
  - Bring suggested updates to SRS

Base Case Compilation Schedule

Case	Date Data Request Mailed	Date Data Due to Sub-Coordinate L&R Info	Date Data Due to Area Coordinator	Date Area Coordinator Due to WECC Staff	WECC Staff Send Case for Review	Date Comments Due to Area Coordinator	Date Area Coordinator Comments Due to WECC Staff	WECC Staff Finalize Date
2035-36 HW1*	4/11/25	5/2/25	5/9/25	6/6/25	6/27/25	7/18/25	8/8/25	8/29/25
2036 HS1*								
2026 HS4S*	5/9/25	5/30/25	6/6/25	6/27/25	7/18/25	8/8/25	9/5/25	9/26/25
2027 LA1S	9/12/25	9/26/25	10/3/25	10/24/25	11/21/25	12/12/25	1/16/26	2/6/26
2026-27 HW3-OP	10/10/25	10/31/25	11/7/25	12/5/25	1/9/26	2/6/26	2/27/26	3/27/26
2026-27 LW1-OP								
2027 HSP1-OP	11/7/25	11/26/25	12/5/25	1/9/26	2/6/26	2/27/26	3/20/26	4/10/26
2031-32 HW2	12/5/25	12/19/25	1/9/26	2/6/26	3/6/26	3/27/26	4/17/26	5/15/26
2032 HS2								
2027 HS3-OP	3/13/26	4/3/26	4/10/26	5/8/26	6/5/26	6/26/26	7/17/26	8/7/26
2027 LS1-OP								
2036-37 HW1	4/10/26	5/1/26	5/8/26	6/5/26	7/3/26	7/24/26	8/14/26	9/4/26
2037 HS1								
2046 HS1S	5/8/26	5/29/26	6/5/26	7/10/26	7/24/26	8/14/26	9/11/26	10/2/26

Data Preparation Manual

- SRS page on wecc.org
- Contains steady-state and dynamics data requirements for components in base cases
- Bus number allocations
- Late data procedure
- Base case modifications procedure
- Year 20 data development guidance
- Case naming convention

Area Coordinator Pre-run Submissions

- Area-specific power flow data
- L&R spreadsheet with interchanges coordinated
  - Also update the copy on the SRS team site
- Dynamics updates
- Tie-line updates (must be coordinated)
- Any additional info to help the case builder
- Operating cases: RAS updates
- Check the area coordinator checklist on the SRS page

Area Interchange Schedules

- Coordinate before submitting case data
- Fill out the L&R spreadsheet on the SRS team site and resolve differences
- If the spreadsheet on the team site is not filled out, WECC staff will use the values from the L&R sheet submitted with the case

Master Tie-Line File

- Transmission lines between areas
- Transformers between areas
- Line-shunts between areas
- Transformer impedance tables
- WECC Path data and branches
- Owners
- Zones
- BAs
- Include updates with case submissions

WECC's Process

- Solve each area power flow submission and export area-specific data to EPC
- Append each EPC and the MTLF to form the full base case
- Check that tie-line statuses are consistent between areas and the MTLF
- Solve the full base case
- Power flow data checks
- Fix dynamics initialization errors
- No disturbance and standard disturbances
- Conversions

Power Flow Data Checks

- One swing bus per island
- No area/owner/zone 0
- Tap changers have a regulating bus
- No jumpered tie-lines
- Widen narrow transformer and SVD control bands
- Load area not equal to bus area
- SVDs that have invalid B values
- Owners with zero participation factor
- Suspicious emergency min/max voltages
- Paths are not overloaded, branches exist in the case
- Many others

Master Dynamics File

- Contains dynamic models used in base cases
- Generators without a generator model are load netted
- When submitting new models, check the MVS page for the latest approved model list
  - Reec_b is not approved
  - Gentpf, gentpj are retired
  - Genqej was recently approved

Dynamics Data Checks

- WECC staff make a copy of the MDF for the case
- Generators without models are netted
- Initialization errors are fixed
  - Some cases have 200+ initialization errors — area coordinators should initialize dynamics and correct errors before submitting base case data to WECC
  - Some errors are fixed by changing generator dispatch, bus voltage schedule, line impedance, etc.
  - Some errors are not fixable, so those models are commented out
  - Worst case, a generator is netted

Dynamics Data Checks

- No disturbance for 35 seconds
  - Look for Pg spread > 1, efd spread > 0.063, spd spread > 0.000, Qg spread > roughly 1 Mvar, unstable SVD Mvar spreads
  - Growing oscillations — visual inspection only
- Standard disturbances for 35 seconds
  - Look for instability starting at 27 seconds
- WECC staff attempt to resolve issues by adjusting the base case or commenting models

Conversions

- PSS®E
  - Power flow only
  - Compare voltages, swing machine movement, interchanges, DC line flows
  - Siemens provides dynamics conversions, which are posted to wecc.org
- PowerWorld
  - Power flow and dynamics
  - Compare voltages, swing machine movement, interchanges, DC line flows

RAS

- Operating cases only
- WECC staff load the latest RAS files and look for errors
  - Contact Area Coordinators with issues

Review Comments

- WECC staff log power flow and dynamics data adjustments — review the files before assembling your comments
- Only changes made to your specific area will be kept
  - Changes to equipment you own that is in other areas should be coordinated with the areas the equipment is in (see DPM: Pseudo-Ties)
- Change files in .p are best
  - For .aux and .idv change files, WECC staff create a change case and export from PW/PSS®E — can cause some data to be lost
  - Test the change files to make sure they work without error
- Provide signoff sheets
- WECC staff apply the change files and redo power flow data checks, dynamics data checks, and conversions

ZIP Files

- Case file
- Dynamics file for PSLF users
- Associated materials
  - Interchange diagram
  - Case summary sheet
- All area L&R sheets provided in Supplemental.zip
- Signoff sheets included with pre-run .zip
- PTI Supplemental Data.xlsx
- Pss_exempt.dat
- Approved base case modifications
- Power flow and dynamics data adjustments
- Steady-State and Dynamics Dashboard

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