



2024 System Review Subcommittee Annual Survey

Tracy Rolstad, Chair

January 18, 2023

System Review Subcommittee
Production Cost Data Subcommittee
Studies Subcommittee
Reliability Risk Committee
NERC

Subject: 2024 System Review Subcommittee Annual Survey

SRS is requesting recommendations regarding:

1. Specialized base cases for the 2024 Base Case Compilation Schedule (BCCS)
2. Standard Disturbance List to be simulated as part of the base case quality process

2024 Base Case Compilation Schedule

Specialized Cases

The SRS proposes to build two specialized base cases as part of the 2024 BCCS. These cases are to represent a starting point that cannot be represented by the typical operations and planning base cases that will also be built as part of the 2024 BCCS. SRS has developed a base case request form to be used by requesters, see Attachment 1. If you wish to submit a request, please fill out all required sections in Attachment 1 with as much detail as possible. The requests will be reviewed and considered by the SRS for adoption in the 2024 BCCS. Approved base cases become part of the WECC base case library and will be available to WECC members for their own studies.

Due to the large number of changes to the current and future generation sources in WECC, there is uncertainty on what targets should be used for area-to-area interchanges. Using historical numbers has resulted in unrealistic generation patterns in several areas and to correct this issue interchange targets will need to change. Please use the specialized case request process if you are interested in requesting cases with any specific or stressed interchange targets.

Standard Disturbance List

SRS has implemented procedures for the Annual Base Case Compilation and Data Check process. Included in the procedures is the steady state and dynamic simulation of disturbances provided on a Standard Disturbance List. WECC staff conducts the simulations during the base case building process

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and again following each base case approval with the intent of improving base case quality. Please use Attachment 2 to request changes to the Standard Disturbance List. Category P0-P7 contingencies are desired currently. Contingencies that do not meet the P0-P7 criteria will not be accepted due to lack of measurable criteria. The current list of disturbances is available [here](#). WECC runs each base case through six of these disturbances. Cases with a north-to-south flow on the Pacific DC Intertie (PDCI) are tested with all disturbances except the PDCI block, while cases with a south-to-north flow on the PDCI are tested with all disturbances except the Palo Verde Generating Station Outage.

The purpose of these tests in the case assembly process at WECC is to reveal instability in models provided before the case is approved. The tests are not used at WECC to check for compliance with a standard or metric or to test for voltage or frequency support issues.

The tests are spread around the interconnection to make sure that each region receives a large stress that would cause potentially unstable models to respond in a way that they can be identified and placed on the list included in each case ZIP folder. Each test adds approximately 2.5 hours of simulation time, and anywhere from 5 to 60 minutes of analysis to a case build.

Survey responses should be returned by July 31 to Logan Affleck, WECC liaison to the SRS, at laffleck@wecc.org.

**If the request is to support the Studies Subcommittee, please send your completed form to Philip Augustin, Studies Subcommittee Chair, who will submit a coordinated response.*

Please contact me if you need assistance.

Sincerely,

Tracy Rolstad

Chair, System Review Subcommittee



Attachment 1 Specialized Case Request Form

The purpose of this form is to provide details on what information is expected when requesting a specialized case. To request a specialized base case, submit a base case request by emailing this completed form to the SRS liaison. Please complete the highlighted sections. If you have questions, you can contact the SRS chair, vice chair, or liaison.

Requested by:

Name: Joshua Kitterman **Organization:** Tucson Electric Power Company

Email: joshua.kitterman@tep.com **Phone:** (520)396-2803

Case Description

Specialized base case requests are intended to represent critical operating conditions such as severe weather events, equipment out of service (transmission lines, reactive devices, or static VAR compensators), unusual generation patterns due to forced outages, and insecure voltage conditions. Some cases may represent extreme load conditions (up to 105% of forecast peak) in a particular sub-region. Data submitters should not be reluctant to model a condition due to lack of historical record of the scenario occurring.

The requestor should detail the critical operating conditions desired in the base case under the Purpose section of the Case Description Sheet. A specialized request should outline how the case is unique to the typical cases produced in the base case compilation schedule. If the request is similar to a case already produced in the compilation schedule, the case description sheet must clearly identify why a new case is necessary. For example, a two-year Heavy Winter (HW) case with no specific changes to load, generation, or interchange targets is unlikely to be built since the HW operating case could simply be scaled accordingly.

Requested Completion Date

If applicable, the date and reason the case needs to be completed to be useful for the requestor should be provided, so the Base Case Coordinator can determine whether the case can be fit accordingly into the BCCS.

Needed Completion Date [if a specific completion date for the specialized request is needed, please provide it here]: By end of Q1 2024

Reason for Needed Completion Date: Request by WestConnect due to Model Development cycle beginning in April 2024.

Case Description Details

[Description of details defined in the requested Case Description Sheet]

LOADS: Load levels refer to the season being studied. All loads are coincident unless indicated otherwise. Please specify load percentage or degree (Heavy, Light) of loading for a specific season or month(s).

TIME: Specified time supersedes specified percentage of load. Please specify the time the special study wishes to simulate for the WECC interconnection-wide model with the hour range and time zone.

GENERATION: Generation levels refer to the season being studied. For example, high hydro generation in a winter case may be lower than median hydro generation in the spring. Renewable generation, when specified, should be based on individual entity's Renewable Portfolio Standard. If desired in the requestors special study, please specify the generation dispatch of HYDRO, THERMAL, and RENEWABLE by AREA with HIGH, LOW, or MEDIAN or by percentage.

INTERCHANGE: Interchange schedules refer to the target flows that should be reached to represent anticipated flow levels and direction for the season being studied. Targets may be altered as anticipated operating conditions become more clearly known. If no target flows are specified, actual scheduled transfers will be based on each area's load and generation balance and economical generation dispatch.

If special study requires, please specify per area the **CONDITION** as LIGHT, MODERATE, HEAVY, or MAXIMUM; the **TARGET** as the desired MW Interchange, with a negative sign indicating reverse flow on the path (Note: Many Path Ratings have different transfer limits depending on the flow direction. Please refer to the WECC Path Rating Catalog.); the **% RATING** specifies the percentage of the Interchange Transfer Limit Based on the WECC Path Rating Catalog.



CASE DESCRIPTION FORM 2034 LIGHT SPRING – 34LSP1S

CASE DUE DATES: (to be completed by SRS and WECC staff)

PURPOSE: Model light-load conditions, along with renewable generation resources serving a significant but realistic portion of the WECC total load. Entities should incorporate their Integrated Resource Plans (IRPs) to account for planned retirements and seasonal operation of generation units. The case should include renewable resource capacity additions that are already planned and included in the 10-year future and represent likely and expected system conditions consistent with any applicable and enacted public policy requirements.

ITEMS TO BE PREPARED:

	From Case	(TBD)
	Stability Data	Master Dynamics File
	Significant Changes	From Existing System

LOADS: Target 50-60% of peak summer loads in the WECC region that would occur during the spring months of March, April, and May¹.

TIME: 1200 - 1400 hours MST.

GENERATION:	<u>HYDRO</u>	<u>THERMAL</u>	<u>RENEWABLE</u>
Canada	--	--	--
Northwest	--	--	--
Idaho/Montana	--	--	--
Colorado/Wyoming	--	--	--
Northern California Hydro	--	--	--
Northern California	--	--	--
Southern California	--	--	--
Arizona/New Mexico/Southern Nevada	--	--	--

INTERCHANGE	<u>CONDITION</u>	<u>TARGET</u>	<u>% RATING</u>
Northwest to British Columbia (Path 3)	--	--	--
Northwest to California/Nevada			
COI (Path 66)	--	--	--
PDCI (Path 65)	--	--	--
Midway – Los Banos S-N (Path 15)	--	--	--

¹ Different Load-Serving Entities could expect higher or lower than 50-60% of their peak summer loads. Some could expect minimum load for 12:00 to 14:00 MDT in months of March, April, and May due to significant effect of self-generation. For example, the light spring load demands in the CAISO-controlled grid are projected to be its annual minimum level due to heavy output from projected behind-the-meter solar PV self-generation. The percentages of non-coincident peak load are as low as 16%, 23%, and 14% at hour 14:00 MDT in April 2034 for PG&E, SCE, and SDG&E, respectively.



Attachment 1
Specialized Case Request Form

Idaho to Northwest (Path 14)	--	--	--
Montana to Northwest (Path 8)	--	--	--
Utah/Colorado to Southwest (Path 31, 35, 78)	--	--	--
Southwest to Calif. (EOR Path 49/WOR Path 46)	--	--/--	--/--
Intermountain to Adelanto DC (Path 27)	--	--	--
San Diego to CFE (Path 45)	--	--	--
Northern to Southern California (Path 26)	--	--	--



Attachment 2 Disturbance Request Form

Requested by:

Name: _____ **Organization:** _____

Email: _____ **Phone:** _____

Please provide the following information for the requested disturbance. The format of the following table is intended to allow for use of the [WECC Contingency and RAS Definition Standard Format](#).

Disturbance Name	
NERC Category	
Base Case Area	
Time, Object, Actions, Criteria, Criteria Status, and Comment	
Associated Remedial Action Scheme	
Memo (If the requested disturbance is replacing or modifying an existing disturbance, please provide details here)	

