WECC

Electric Reliability and Security for the West

2022 System Review Subcommittee Annual Survey

Tracy Rolstad, Chair

November 17, 2020

System Review Subcommittee
Production Cost Data Subcommittee
Studies Subcommittee Leadership
Operating Committee Steering Committee

Subject: 2022 Data Subcommittee Annual Survey

SRS is requesting recommendations regarding:

1. Specialized base cases for the 2022 BCCS
2. Standard Disturbance List to be performed as part of the base case quality process

2022 Base Case Compilation Schedule

Specialized Cases

Two specialized base cases are proposed to be built as part of the 2022 BCCS. These cases are to represent a starting point that cannot be represented by the typical operations and planning base cases that are also built as part of the 2022 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 2022 BCCS. Approved base cases become part of the WECC base case library and will be available to WECC members for their own studies.

Below are a few discussion topics from SRS that may alter your specialized case requests:

- Last year's compilation schedule includes the creation of two near term planning cases. These cases are built off of the current year operations cases, use a shortened built schedule, and utilize one of the specialized case spots. Please use the specialized case request process if you would like these cases to be built again.
- 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. The simulations are conducted during the base case building process and 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 at this time. Contingencies that do not meet the P0-P7 criteria are not accepted due to lack of measurable criteria. The current list of disturbances is available here. WECC runs each base case through 6 of these disturbances. Cases with a North to South flow on the 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 to a standard or metric
- test for voltage or frequency support issues.

The tests are spread around the interconnection to try and make sure that each region receives a large stress that would cause potentially unstable models to respond in a way that they can be subsequently 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.

Please answer the following questions.

1. Do you use any of the standard disturbances?
    a. If no, why?
2. Do you think the list is adequate?
    a. If not, why?
3. If we added more disturbances, d you have any recommendations?
    a. If so, what disturbances?
4. If we added more disturbances would you be more or less likely to use them?

Responses should be returned by Friday, January 29, 2021 to:

Desmond Chan
SRS Base Case Coordinator
Seattle City Light
Desmond.Chan@seattle.gov

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

***If the request is to support the Scenarios Work Group, please send your completed form to Amy Mignella, Scenarios Work Group Chair, who will submit a coordinated response.*

Please do not hesitate to contact me for any assistance that you may need.

Sincerely,

Tracy Rolstad

Chair, System Review Subcommittee

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 Base Case Coordinator listed in the 2022 SRS Survey. Please complete the highlighted sections. If you have questions, you can contact the SRS Chair, Vice Chair, or Base Case Coordinator for assistance.

Requested by:

Name: Organization:

Email: Phone:

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 percent of forecasted 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 actually 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 2-year Heavy Winter case with no specific changes to load, generation or interchange targets is unlikely to be built since the HW-op 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 if 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]**:**

Reason for Needed Completion Date:

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 period 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 entities' 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 — Attachment 1

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

PURPOSE: *Example* – Prepare a case with maximum spinning reserve represented (as many units on line as possible) with moderate to heavy interarea transfers to study the year 2024.

ITEMS TO BE PREPARED:		
	From Case	(TBD)
	Stability Data	Master Dynamics File
	Significant Changes	From Existing System

LOADS: e.g. X-Y % of (seasonal) peak; xx% seasonal peak 1 in 2 years load.

TIME: e.g. 1800 – 2000 hours MST.

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

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

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 utilization of the WECC Contingency and RAS Definition Standard Format developed by the WECC TSS MSRATF.

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