

# **DRAFT SYSTEM ASSESSMENT STUDY PLAN FOR 2007**

To accomplish the annual system assessment required in the PEFA, the following study plan is proposed:

## **Timeframe of Study**

The prescribed timeframe for ColumbiaGrid system assessments is ten years. Members often concentrate on the 3-5 year timeframe as the construction of most projects fits into that time. The NWPP RANTS Study was completed in September 2006 and analyzed the performance of the system in the 2012 timeframe for both summer and winter peak load conditions. The ColumbiaGrid Planning Participants feel that these study results are still valid and are continuing to resolve the issues that were identified in this assessment.

Longer range studies are needed to complete the overall system assessment. The longer range studies are valuable to plan for major projects and to provide insight into upcoming needs that might be useful for resolving other shorter range issues. Member planning criteria have an additional requirement to plan the main grid system (500-kV) for abnormal winter load levels. Neither of these tests (longer term or abnormal cold weather) was performed in the RANTS study. It is the collective judgment of the Planning Participants that the ten-year and abnormal winter load studies should be the focus of this year's assessment to supplement the earlier RANTS work.

## **Basecases**

The following basecases are proposed to accomplish this assessment.

- 10-year summer cases: WECC 2015 HS1-S (need to modify to 100% NW load)
- 10 year winter case: WECC 2016-17 HW1 (need to modify to 100% NW load)
- Abnormal winter case: BPA E2016 case?? The WECC starting case for the BPA case is the approved 08hw2 OP case with load, gen and topology changes.

**Basecase summary (targets shown with “?”)**

	<b>WECC 2015 HS1-S</b>	<b>WECC 2016-17 HW1</b>	<b>BPA E2016</b>
BC-NW path flow	2300 MW?	-1000 MW?	MW?
MT-NW path flow	1200 MW?	1000 MW?	MW?
NW-CA/NV path flow	5500 MW?	2500 MW?	MW?
Idaho-NW path flow	1200 MW?	1200 MW?	MW?
NW load (Area 40)	MW?	MW?	MW?
Load growth assumed			

All of these cases must be reviewed by participants to ensure they have the latest transmission upgrades, loads and resource plans for the area. The transmission upgrade plans in these cases should be consistent with the Initial ColumbiaGrid Transmission Plan that is currently being finalized.

**Screening criteria**

N-0 cases will be tuned within the following limits. Any areas that cannot meet these limits will be flagged as violations:

500-kV voltages >1.1 pu <1.0 pu

345-kV through 115-kV >1.05 pu <1.0 pu

Equipment loadings above 98% of the “A” rating (operating limit) will be flagged

For contingency cases flag the following violations:

500-kV voltages >1.1 pu <1.0pu

345-kV through 115-kV >1.05pu <0.95pu

115-kV voltages and above post transient voltage deviation for level B >5% delta voltage

transient voltage deviation for level C >10% delta voltage

Equipment loadings above 98% of the "B" rating (emergency limit) will be flagged

### **Outages**

For the normal summer and winter cases (WECC 2015 HS1-S and WECC 2016-17 HW1 respectively), all N-1 outages 115-kV and above will be run along with the multiple outages identified in the common mode contingency list. Common mode contingency list will be refined to include all common mode contingencies at 230-kV and above along with any requested lower voltage outage.

For the abnormal winter case (BPA E2016), all N-1 outages 230-kV and above will be run. Note that common mode contingencies will not be run on the abnormal winter load case since this weather condition is assumed to be a contingency in itself.

### **Sensitivities**

Studies will be run with and without wind generation (need to determine what generation would be redispatched for no wind case)

### **Critical Energy Infrastructure Concerns**

Meetings for the System Assessment will be open to all interested parties. However, non-transmission owner participants may be required to complete confidentiality agreements to access study information.

### **Schedule for System Assessment and Biennial Planning cycle**

The PEFA requires that the first Draft Assessment Report with Need Statements be completed annually (so it would be due by April 4, 2008). The Approved First Biennial Plan is due 30 months after PEFA is signed or October 4, 2009. Intermediate goals are to complete the first Draft Biennial Plan by December 2008. The review process to "approve" a Biennial Plan still needs to be developed.

## **Process Schedule**

<b>Activity</b>	<b>Completion Date</b>
Start process, invite non-PEFA parties	September 26 meeting
Decide on basecases	September 26 meeting
Approve Study Plan	September 26 meeting
Collect basecase modifications/updates from assessment participants	October 7
Final basecases posted for review	October 15
Collect Planning Criteria and other adequacy standards that members indicate that they want used for their systems. Use this information to refine Screening Criteria (above) if needed.	October 31
Refine common-mode contingency lists from RANTS study. Expand to cover all study areas at 230-kv and above, 115-kV by request.	October 31
Final basecase ready	October 31
Complete runs of all N-1 facility outages and defined common-mode outages; dump results to spreadsheets using screening criteria	November 15
Refine standardized comments list	November 15
Participants review results and provide standardized comments to each entry for their facility outages ("screened results")	December 31
General review of all "screened" results by all participants (peer review) and reconciliation of issues	January 15
Finalize results in spreadsheet form	February 1
Tabulate list of joint problems that includes responsibilities, affected Participants and timeframes for resolution.	February 1
Develop formal Need Statements for each joint problem that requires immediate action from this assessment and RANTS – ColGrid obligation	February 15

Draft ColumbiaGrid System Assessment Report out to Planning Group for comment- ColGrid obligation	February 28
Finalize Draft ColumbiaGrid System Assessment Report- ColGrid obligation	April 4