



# Planning Process Updates

April 19, 2017

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- Major activities

- Since Feb's Board meeting
- In the next 3 months

- Planning updates

- 2017 System Assessment
- 2017 Sensitivity Studies
- GMD Study Team
- MOD-033 Study Team
- Transient Stability Study
- Economic Planning Study
- Alcoa Study Team
- NWCMS
- South of Allston
- ADS Implementation



# Major Planning Activities



# 2017 Study Program: Current Status

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- Major activities since February 2017 board meeting
  - Base cases for 2017 System Assessment have been finalized
  - Draft validation process document for MOD-033 was issued for comments
  - Preliminary scope/timeline of GMD study was discussed/agreed by planning parties
  - Initial scope of NWCMS step 4 was issued
  - Ongoing discussion regarding the scope of 2017 Sensitivity Studies



# 2017 Study Program: Current Status

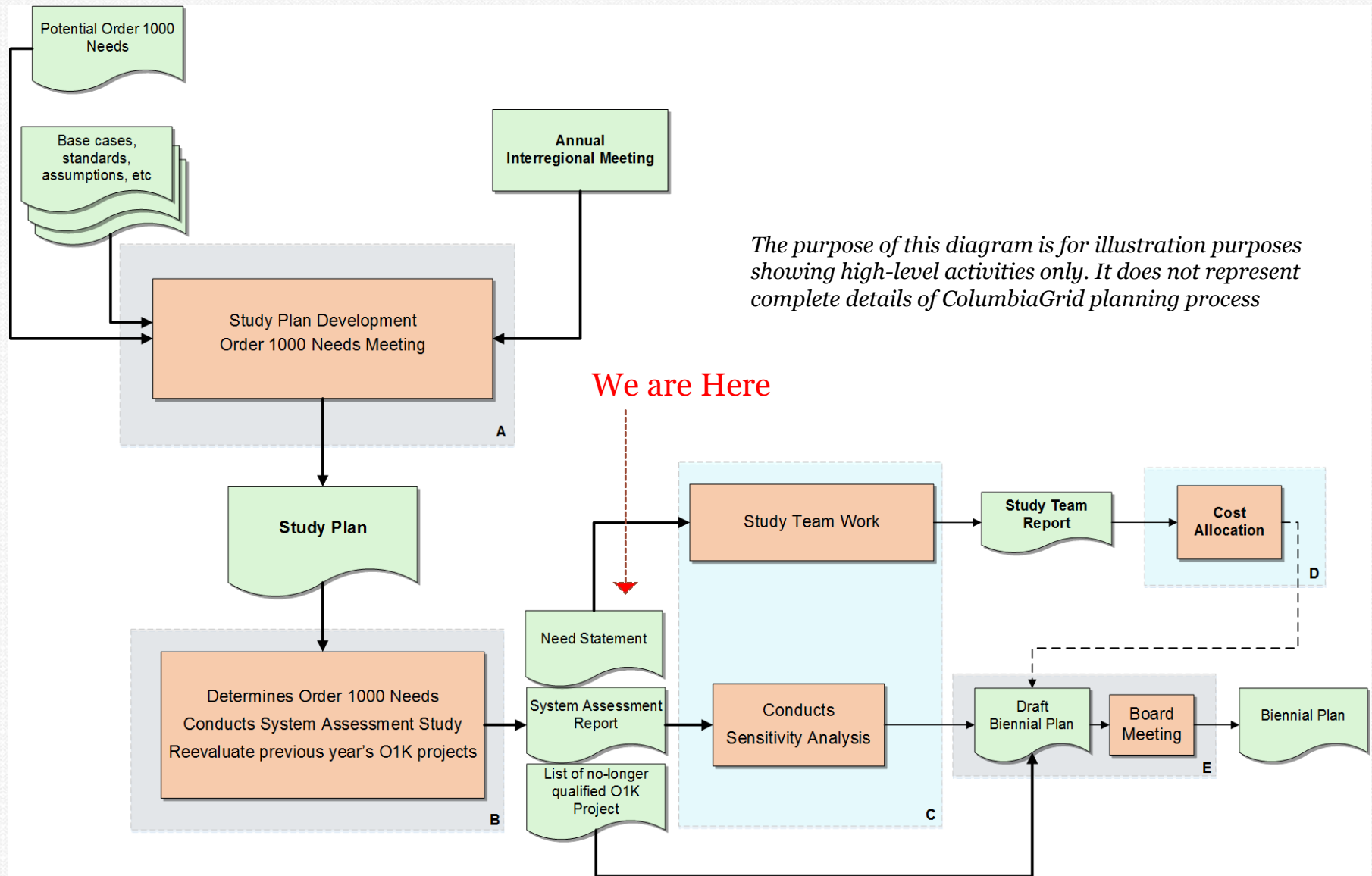
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- Transient Stability, Economic Planning and Alcoa Study Teams are ongoing
- Ongoing discussion with WECC and other planning regions regarding the detailed scope of ADS implementation

# Planning Updates



# Current Status: Where we are now?



# 2017 System Assessment

- Ongoing studies
  - Primarily power flow, assess potential thermal overloads and voltage issues
  - Conduct the study on 4 scenarios

Case	Base Case	Desired Study Year	WECC Build Year	Notes
1-2 Year Heavy Summer	2017 HS2-OP	2019	2016	Released on Jan 17
1-2 Year Heavy Winter	2016-17 HW3-OP	2018/2019	2016	Released on Jan 17
5 Year Heavy Summer	2022 HS1	2022	2016	Released on Jan 17
	TBD	2023	2016	Will be issued in early 2017
5 Year Heavy Winter	2021-22 HW2	2021/2022	2016	Released on Jan 17
	TBD	2022/2023	2016	Will be issued in early 2017
Long Term Heavy Summer	2026 HS1	2027	2015	Released on Jan 17
Long Term Heavy Winter	22025-26 HW1	2026/2027	2015	Released on Jan 17
1-5 Year Light	2017 7 LS	2019	2016	Released on Jan 17





# 2017 System Assessment

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- Present the initial study results with planning participants in June
- Two weeks comment window
- Present to the board in June
- Final results will be summarized in the 2017 System Assessment report



# 2017 System Assessment: Milestones

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No	Task	Due Date
1	Start conducting technical study	4/1/2017
2	Issue initial study results	6/2/2017
3	Present initial study results to the members & planning participants	6/8/2017
4	Comment window ends	6/16/2017
5	Present major findings, key conclusions, comments to the board	6/21/2017
6	Draft report issued	6/30/2017
7	Comment window ends	7/14/2017
8	Final report issued	7/21/2017



# 2017 Sensitivity Studies

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- **Scope is being defined**
  - Types of study, how many studies to be conducted, assumptions, etc
  - Anticipated finalization of the scope: July 2017
- **Several proposed ideas for Sensitivity Studies**
  - N-1-1: With the enhancement of methodology
  - High Renewable Study: With the improvements of study assumptions, methodology, utilization of PCM data
  - Evaluate the need for the 2016 Operational & Planning gap study
  - Others



# GMD Study

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- Initial scope is being finalized
- Two recent discussions regarding the scope
  - WebEx (4/11/17)
  - Planning Meeting (4/13/17)
- Key decisions
  - Formation of GMD Study Team
  - Focus on 1) Developing GMD base cases 2) Conduct the study to determine GIC currents
  - The base cases should be ready by the end of 2017



# GMD Study

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- Next steps
  - Develop the Study Plan (May 2017)
  - Work with WECC and other applicable entities to collect & clean up GIC data (June-August 2017\*)
  - Build the base cases, conduct test run as needed (September – November\*)
  - Issue GIC base cases (December 2017\*)
  - Conduct the study to identify GIC current (TBD)

\* Approximated timeline



# MOD-033

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- Two major components of MOD-033 requirements
  - R1: Development of the performance guidelines and conduct the study to compare the performance
  - R2: Data sharing/providing requirement
- The current scope of MOD-033 Study Team focuses on R1 requirements
- Currently, draft performance guideline was created/shared with the members for comments
  - Main issues: Performance criteria (power flow, transient)
  - Anticipated completion: May 2017



# MOD-033

Parameters for Comparison	Proposed Bandwidth for Comparison
Power flows <ul style="list-style-type: none"> <li>• Lines and transformers</li> <li>• Generators</li> <li>• Interface/paths</li> <li>• Reactive supports</li> </ul>	+/-10% (AC) +/-5% (DC)
Voltages <ul style="list-style-type: none"> <li>• Transmission buses, generator terminal, DC lines' terminals, reactive supports</li> </ul>	+/-5%

Dynamic Model Validation Parameters for Comparison	Proposed Bandwidth
Bus frequency	+/-2%
Bus voltage magnitude and angle	+/-5%
Generator real and reactive output	+/-10%
Line and transformer flows – real and reactive	+/-10%
Static and dynamic VAR devices reactive output and voltage	+/-10%
DC lines' active power, terminal voltage and reactive power consumption	+/-5%

# MOD-033

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- Next step is to compare system performance with simulation results, which include several key steps
  - Selection of the incidents
  - Develop base cases that representing the incidents\*
  - Conduct the technical studies/perform the comparison
  - Summarize the results & issue the report
- A workshop to better understand how to create the base cases is scheduled on June 6
  - BPA and WECC staff agreed to help walk through the process with workshop participants

\* These cases can be very different from the cases being used in Reliability Assessment. BPA has substantial knowledge on how to conduct this task



# Other Studies

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- **Transient Stability Study**
  - Ongoing
  - For this year, the study will focus on 2019 LS and 2027 HS cases
  - Anticipated completion: October 2017
- **Economic Planning Study**
  - Ongoing
  - More coordination with High Renewable Study
  - Anticipated completion: October 2017



# Other Studies

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- Alcoa Shutdown Study Team
  - Ongoing
  - The 3<sup>rd</sup> meeting was held on April 14, 2017
  - Currently, the group finalized the cases that will be studied during the 3<sup>rd</sup> meeting
  - Next step: ColumbiaGrid staff will start conducting the studies
  - Initial study results will be available in May 2017
  - The next meeting will be held on June 9 to review the study results



# Other Activities

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- **NWCMS**

- Step 3 has been completed
- New functions from steps 1-3 will be included in the next PowerWorld release (v20)
- At the same time, the group has continued to discuss the scope of step 4 with PowerWorld
- Currently, the initial scope of step 4 has been discussed with the group
- Several new concepts such as database features, using cloud storage were discussed



# Other Activities

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- South of Allston Independent Review
  - The final report is going through CEII review
- ADS Implementation
  - Ongoing
  - More details will be provided in a separate presentation



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# Major activities in the next 3 months



# 2017 Study Program: Next Steps

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- Major activities in the next 3 months
  - Complete 2017 System Assessment Studies (power flow, voltage assessments)
  - Finalize the scope of 2017 Sensitivity Studies
  - Acquire GMD software and start developing GMD Study Plan and base cases
  - Finalize MOD-033 validation process document, start developing the base case
  - Ongoing activities Transient, Economic Planning studies, Alcoa Study Team, NWCMS, and ADS implementation





**Question:**

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