BPA Attachment K Planning Process

Planning Meeting I

December 4, 2008

Agenda

- Introductions
- Attachment K Background and Overview
- BPA's Attachment K Planning Process Diagram
- Navigating BPA's Planning Process Website
- BPA Plan for 2008
- Planning Assumptions, Methodology, and Criteria
- Economic Study Requests
- Next Steps

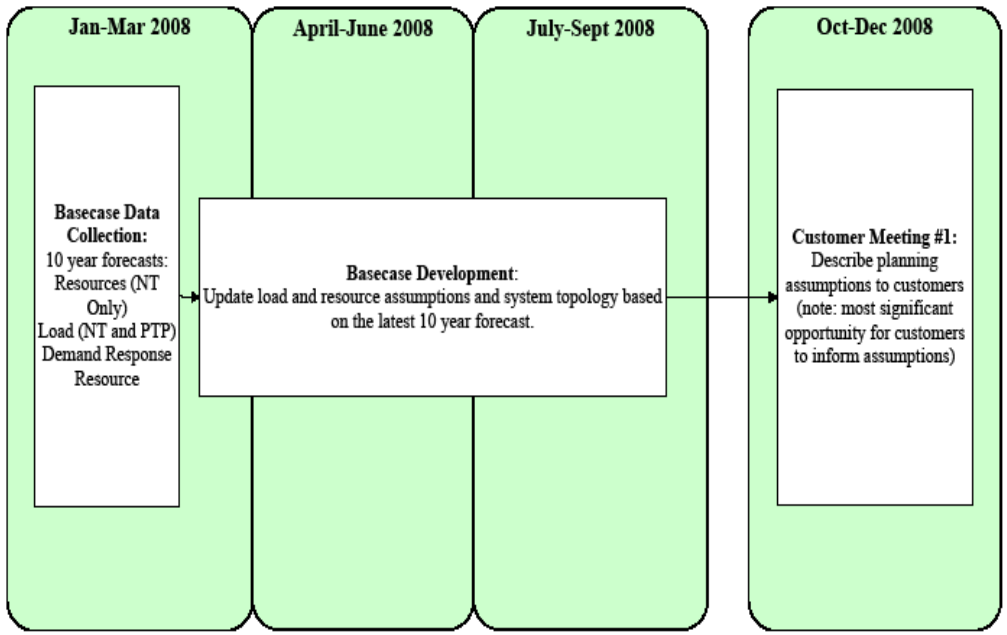
Introductions

Transmission Planning	Larry Furumasu, Kendall Rydell, Pat Rochelle, Melvin Rodrigues
General Counsel	Chuck Combs, Matt Perkins
Policy Development	Rich Gillman, Blake Weathers
Account Executives	Dave Fitzsimmons
Strategy Integration	Syd Berwager, Ravi Aggarwal

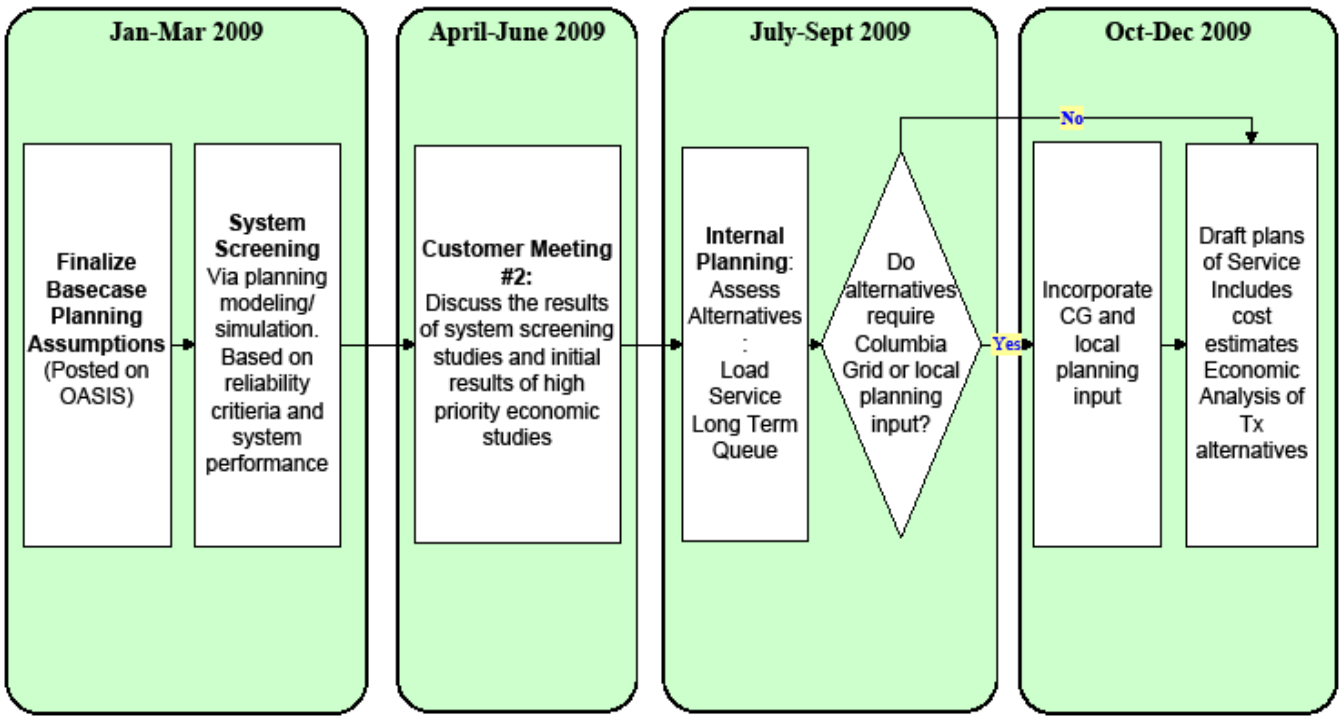
Attachment K Background and Overview

- Purpose and Objectives of Attachment K
- Development of the Attachment
- Overview of the Attachment

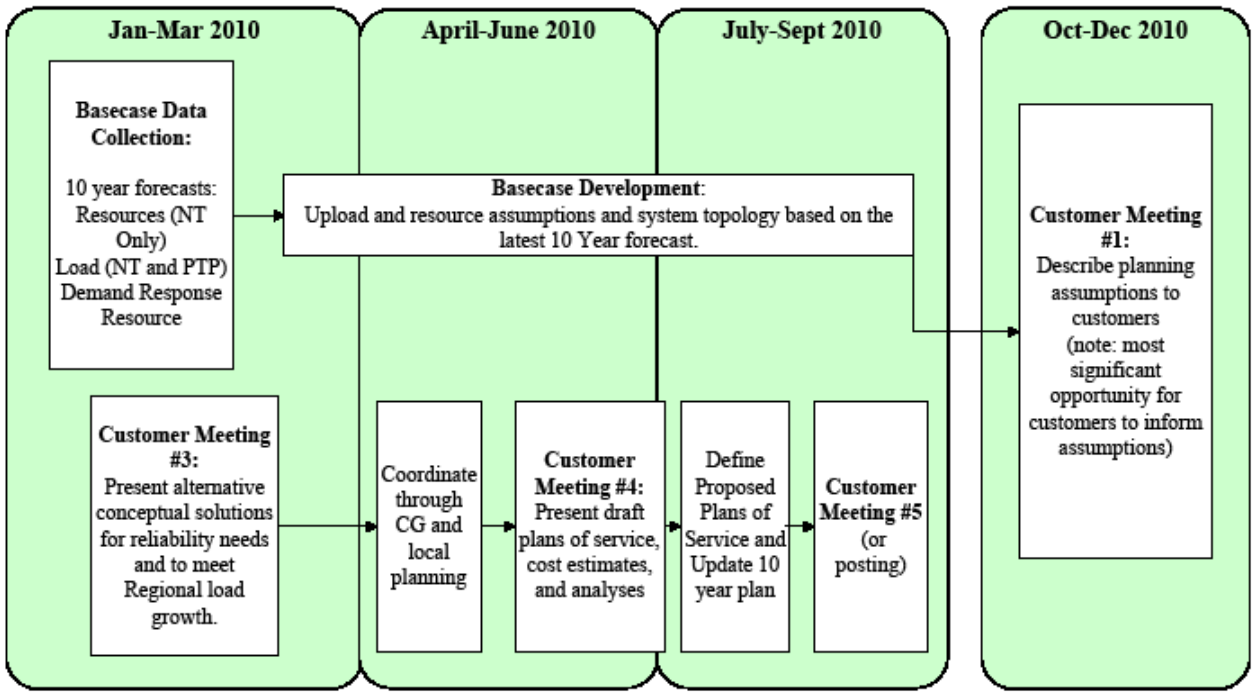
BPA's Attachment K Planning Process Diagram
2008



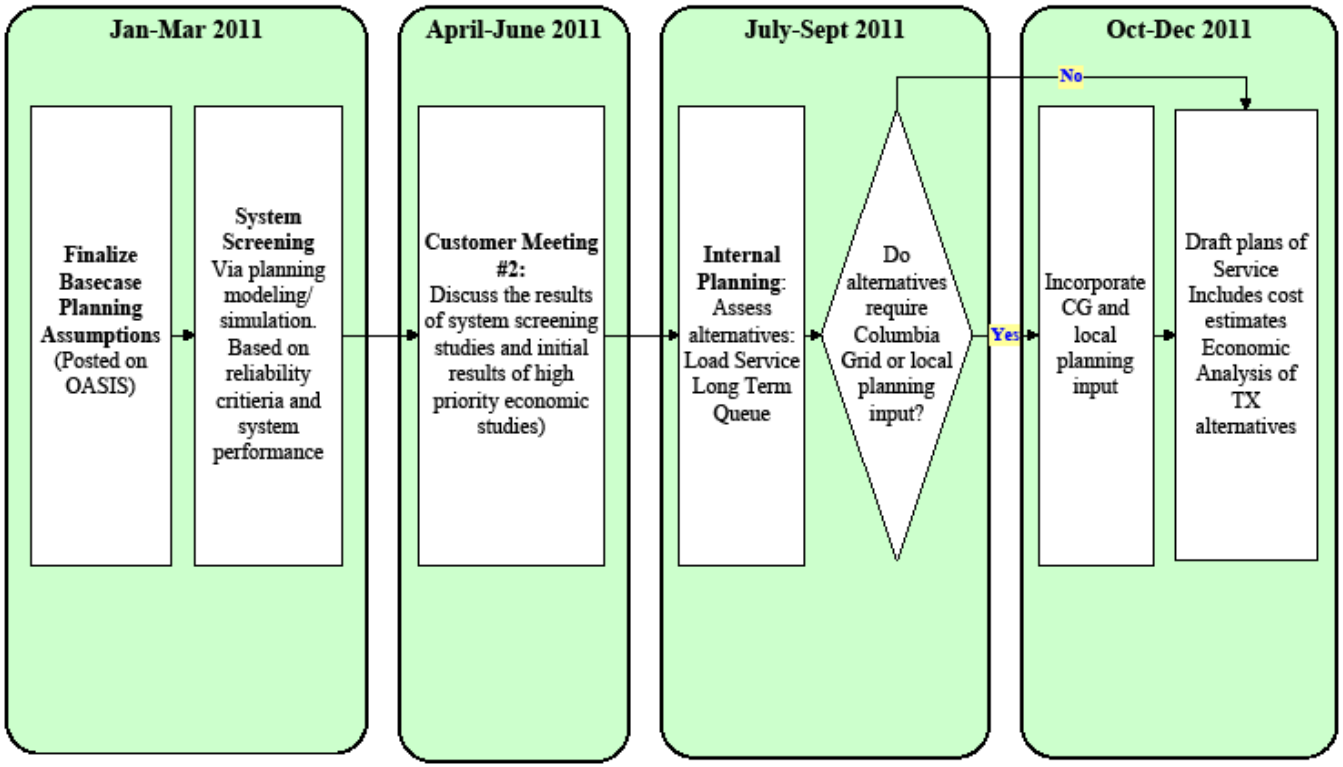
BPA's Attachment K Planning Process Diagram
2009



BPA's Attachment K Planning Process Diagram
2010

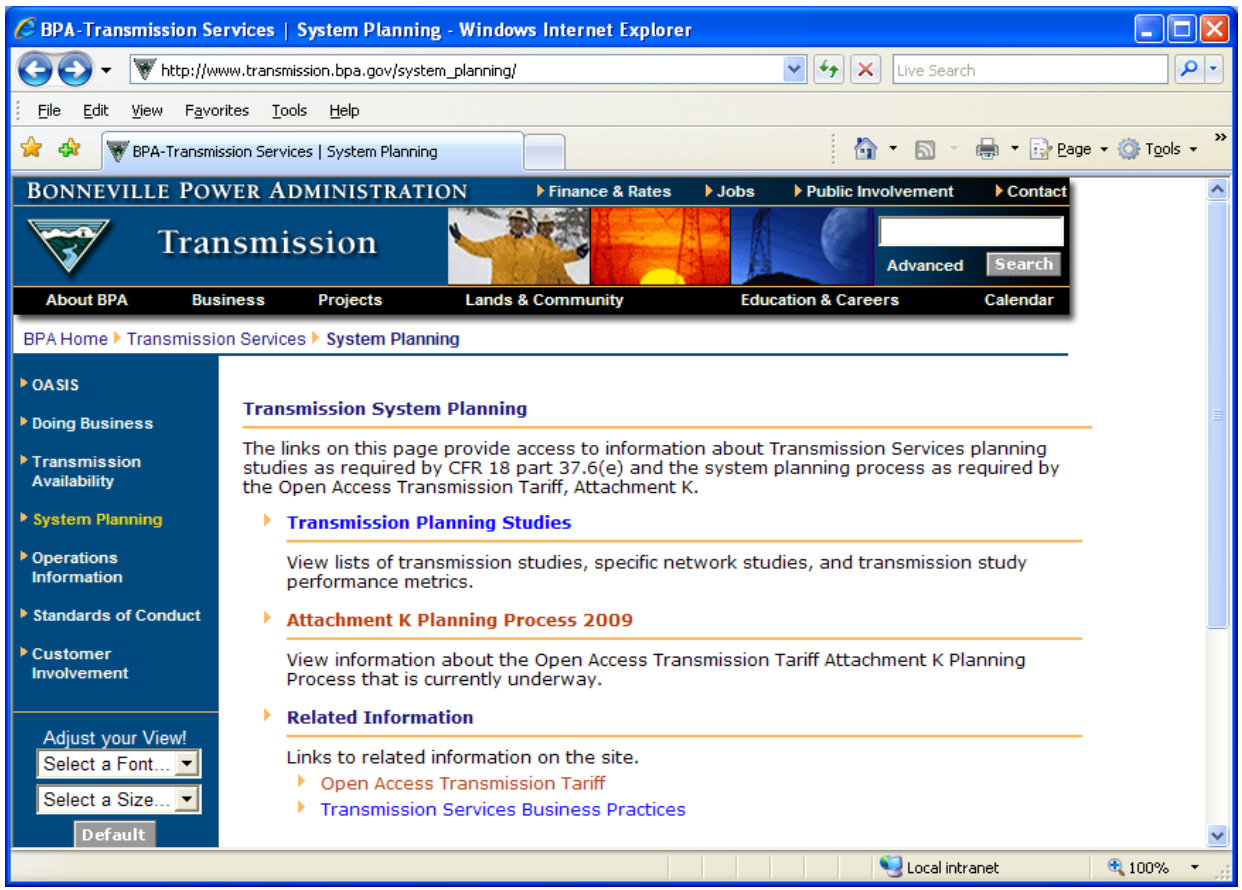


BPA's Attachment K Planning Process Diagram
2011



Navigating BPA's Attachment K Planning Process Website

- Transmission System Planning page URL
  http://www.transmission.bpa.gov/system_planning/



Navigating BPA's Attachment K Planning Process Website

- Attachment K Planning Process 2009 page URL
  http://www.transmission.bpa.gov/system_planning/planning_2009.cfm

BPA's Attachment K Planning Process Website

- Meetings
  - Meeting announcements, agendas, etc.
- Reference Materials
  - Materials associated with the Planning Process, participation forms, etc.
- Email Information
  - PlanningParticipationRequest@bpa.gov
  - PlanningEconomicStudyRequest@bpa.gov
- Economic Studies
  - Requesting and Tracking Economic Studies
- Related Information
  - Links to information related to the Planning Process

BPA Plan

- BPA's Plans for Capital Expansion Projects
- Spans the 10 year horizon from 2008-2018
- Projects categorized by
  - Main Grid
  - Area and Customer Service
  - Upgrades and Additions
- Projects organized by Geographic Area within those categories
- The following information is provided for each Project:
  - Project Description, Key Drivers, Issues Being Addressed, Discussion of Alternatives

Planning Assumptions

Base Cases

- NW Loads
  - Utilize peak load forecasts for 10 years out, updated annually.
  - Load forecasts for both winter and summer seasons.
  - Load Forecasts:
    - Provided by Customers for the IOU's and larger utilities (approx. 75%)
    - Developed by BPA Agency Load Forecasting group if not supplied by customers (approx. 25%)
- Resources
  - Model existing generating resources and selected resources proposed to be on-line, if needed, to meet the forecast loads within the 10 year horizon.

Planning Assumptions (continued)

- Update Northwest Area Coordinator database
  - Update seasonal peak load forecasts
  - Correct network topology, if needed
  - Model potential future resources and network expansion projects
  - Compile load forecast and network modeling data for all Northwest utilities.
  - Submit this database to WECC annually for development of WECC base cases

- Sensitivity Cases

  Other “stressed” patterns may be developed as sensitivities based on:
  - Historical Usage, ATC methodology, Resource variations
  - Examples: High COI path flow, different generation patterns

Planning Methodology

- System Screening
  - Perform steady state power flow simulation of all credible single contingency and selected common mode outage scenarios.
  - Study a large selection of single and multiple contingencies for voltage stability and transient stability performance.

- Identify Potential Violations
  - Compare System performance with NERC and WECC Reliability Standards to determine if there are potential violations.
  - Compile a list of areas with potential violations for further detailed study.
  - Violations may include:
    - Steady State - Thermal overloads, or Under/Over Voltage violations
    - Stability - Transient or Voltage Stability Violations

Planning Methodology (continued)

- Detailed Area Studies
  - Check network topology and load forecast / load growth assumptions for the area of interest.
  - Check historical data and modify base cases to stress study area.
  - May also develop sensitivity cases for worst case generation or transfer patterns.
  - Run detailed contingency analysis (i.e. modeling RAS as required)
  - Verify reliability violations
  - Interpolate / extrapolate from study results to determine need date for project to mitigate violations if needed

- Develop Alternative Conceptual Solutions
  - Solutions to mitigate reliability violations may include transmission expansion projects and / or non-wires solutions (energy efficiency or demand management).

Planning Methodology (continued)

- Cost Estimates for Alternatives
  - Preliminary cost estimates are developed for each alternative
  - Preliminary estimates are used for comparing alternative solutions
- Develop Plan of Service for Preferred Alternative
  - Establish project team
  - Draft Project Requirements Diagram and circulate for comments
  - Update and refine cost estimates
  - Request capital funding for project
    - Risk Analysis
    - Business Case

Planning Criteria

Standards and Criteria used for Planning:

- NERC Reliability Standards (TPL-001, 002, 003, 004)

  [North American Electric Reliability Corporation]

- WECC Reliability Criteria

  [Western Electricity Coordinating Council]

Economic Study Requests

- What is an Economic Study?
  - Studies may be requested to address congestion issues or the integration of new resources and loads.
- How are Requests for Economic Studies submitted?

  PlanningEconomicStudyRequest@bpa.gov
- Requests may be submitted any time…

  Requests submitted after October 31 will be considered in the next prioritization process
- BPA will complete up to two Economic Studies per year at its expense
- Requests Received so Far
  - A list of Economic Study Requests is posted on the Planning Process website

  (and presented on the following slide)

Economic Study Requests (continued)

Description of areas for economic analysis

Identifier	MW (Up to)	Description : In the vicinity of……
1	600MW	McNary Substation
2	600MW	Grizzley Substation
3	600MW	Custer Substation
4	600MW	Longview Substation
5	200MW	Coos Curry Substation
6	50MW 150MW and 300MW	Harney County near French Glen, Lake County or Crook County (does this need to be split??) (please also look at an interconnection on the Malin- Hilltop line)
7		Walla-Walla Substation
8		John Day Substation
9		Boundary (energy delivered in from Canada)
10		Ellensburg Substation
11		LaGrande Substation (energy delivered in from Idaho or Wyoming)
12		Garrison (or Hotsprings) Substation (energy delivered in from Montana)
14		Benton County on the Ashe-Marion 500 KV line
15		Columbia and Garfield Counties at or on the line between the Lower Granite and Little Goose Substation.
16		Hilltop Substation (from Sierra's system) – please include the cost of a BPA 230KV/500KV transformer at Malin.
17	50 MW	Eastern Oregon; approximately 90 miles northwest of Boise (geothermal)

Next Steps

- Screening Studies
- Initial Study Results
- Planning Meeting II (April – June 2009)

Sign up to participate in future meetings or receive additional information by:

- Filling out the the Participation Request form on BPA's Planning Process website and sending it via e-mail to: PlanningParticipationRequest@bpa.gov