

# **BPA Attachment K Planning Process**

## **Planning Meeting I**

March 21, 2019



# Agenda

- Introductions
- BPA's Attachment K Planning Cycle – 2019
- BPA's Attachment K Website – 2019
- Economic Study Requests
- 2019 Planning Assumptions, Methodology, and Criteria
- 2018 BPA Transmission Plan
- Next Steps



# Attachment K Planning Cycle 2019

- **Customer Meeting I** **March 21, 2019**
  - **2018 BPA Transmission Plan**
  - **2019 Planning Assumptions, Methodology, Criteria**
  - **Economic Study Requests**
- **Posting I** **Spring/Summer 2019**
  - Summary of 2019 System Assessment Results and Conceptual Solutions
- **Customer Meeting II** **Fall 2019**
  - Draft Plans of Service and Cost
- **Posting II** **End of Year 2019**
  - 2019 BPA Transmission Plan



# BPA's Attachment K Planning Process Website

<http://www.bpa.gov/transmission/AttachmentK/Pages/default.aspx>

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Ancillary and Control Area Services (ACS) Practices Forum

Attachment K

→ 2019 Planning Cycle

2018 Planning Cycle

2017 Planning Cycle

Coordinated Transmission Agreement

Energy Imbalance Market

Generator Interconnection Reform Implementation

Hourly Firm

Network Integration Transmission Service (NT Service)

Network Open Season (NOS)

North American Energy Standards Development

Reliability Coordinator Services

## Attachment K Planning Process

Transmission Services conducts system planning meetings in accordance with its Open Access Transmission Tariff Attachment K. Below are links to past and present information on the Attachment K Planning Process:

[2019 Planning Cycle](#)  
[2018 Planning Cycle](#)  
[2017 Planning Cycle](#)

### Email Information

To request participation in the Planning Process, send questions, comments, or request copies of reports, complete the [Planning Process Participation Request](#).

To request an Economic Study, fill out the [Economic Study Request Form](#).

### Related Links

[Open Access Transmission Tariff Interconnection](#)  
[Business Practices](#)



# BPA's 2019 Attachment K Planning Process Website

<https://www.bpa.gov/transmission/AttachmentK/Pages/2019-Planning-Cycle.aspx>

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- Ancillary and Control Area Services (ACS) Practices Forum
- Attachment K
  - 2019 Planning Cycle
  - 2018 Planning Cycle
  - 2017 Planning Cycle
- Coordinated Transmission Agreement
- Energy Imbalance Market
- Generator Interconnection Reform Implementation
- Hourly Firm
- Network Integration Transmission Service (NT Service)
- Network Open Season (NOS)
- North American Energy Standards Development
- Reliability Coordinator Services
- South of Allston Bilateral Redispatch Pilot
- Southeast Idaho Load Service
- Southern Intertie HNF Non-Rates Solutions
- TC-20 Implementation
- Transmission Business Model
- Transmission Commercial Project Integration

## 2019 Planning Cycle

Transmission Services conducts system planning meetings in accordance with its Open Access Transmission Tariff Attachment K. These meetings provide customers and interested parties the opportunity to discuss and provide input to the studies and development of the plans of service.

This page provides information about the Transmission Services Attachment K process including notifications of meetings, results of planning studies, plans of service and other reference information. To request participation in the Planning Process, complete and email the [Participation Request form](#).

### Meetings

[March 21, 2019](#)

[Agenda](#)

### Economic Studies

To request an Economic Study, fill out the [Economic Study Request Form](#).

### Reference Information

#### Related Links

- [FERC Order 1000](#)
- [FERC Order 890](#)
- [NERC Reliability Standards](#)
- [Open Access Transmission Tariff \(includes Attachment K\)](#)
- [Planning Studies](#)
- [WECC Reliability Criteria](#)



## 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](mailto:PlanningParticipationRequest@bpa.gov)
  - [PlanningEconomicStudyRequest@bpa.gov](mailto:PlanningEconomicStudyRequest@bpa.gov)
- Economic Studies
  - Requesting and Tracking Economic Studies
- Related Information
  - Links to information related to the Planning Process



## 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](mailto: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
- There were no Economic Study Requests received during the annual cycle ending on 10/31/2018



## Planning Assumptions & Methodology

- System Reliability Assessments may be based on current or qualified past studies as allowed by the NERC TPL Reliability Standard
  - The 2019 System Assessment will be based partly on qualified past studies from 2017 and 2018 and relies partly on the results of current studies



# Planning Assumptions

## Base Cases

- Loads in the Northwest Area
  - Utilize peak load forecasts for approximately 2, 5, and 10 years out, reviewed and/or updated annually, and off-peak load forecasts for the near-term (2 years out) planning horizon.
  - Peak load forecasts for both winter and summer seasons.
    - Forecasts provided by Customers for the IOUs and larger utilities (approximately 75-80% of loads)
    - Forecasts developed by BPA's Agency Load Forecasting group if not supplied by customers (approximately 20-25% of loads)
- Resources
  - Model existing generating resources and selected future resources proposed to be online, if needed to meet the forecast loads within the 10 year horizon.



## Planning Assumptions (continued)

- Update Northwest Area database
  - Update with the latest seasonal peak and off-peak load forecasts
  - Update with the latest network topology
  - Model future resources as needed, network expansion projects, and firm transmission obligations

- Sensitivity Cases

Other patterns and conditions may be developed as sensitivities based on:

- Load level, load forecast, or dynamic load model assumptions
- Expected transfers
- Expected in-service dates of new or modified Transmission Facilities
- Reactive resource capability
- Generation additions, retirements, or other dispatch scenarios
- Or other system conditions unique to certain geographical areas



## Planning Methodology

- System Assessment.
  - Check network topology and load forecast / load growth assumptions for each area of interest.
  - Modify base cases to stress the study area and benchmark with historical data.
  - Develop sensitivity cases as needed for worst case generation or transfer patterns.
  - Perform steady state power flow simulation of all single contingencies and credible multiple element contingencies.
  - Study a large selection of single and multiple contingencies to evaluate voltage stability and transient stability performance.
  - Model RAS as required.



## Planning Methodology (continued)

- Identify Potential Problems
  - Compare system performance with NERC and WECC Reliability Standards to determine if there are potential system performance deficiencies.
  - Identify deficient areas for follow up and possible corrective action plans.
  - Problems may include:
    - Steady State - Thermal overloads or Under/Over Voltages
    - Stability
      - Insufficient reactive margin (voltage stability)
      - Large voltage or frequency deviations (transient stability)
- Develop Conceptual Solutions
  - Solutions to mitigate potential system performance deficiencies may include transmission expansion projects, facility upgrades, and/or non-wires solutions (e.g. energy efficiency, distributed generation, redispatch, or demand side management).



## Planning Methodology (continued)

- Cost Estimates for the Conceptual Solutions
  - Preliminary cost estimates are developed for the conceptual solutions
  - Preliminary estimates are used for comparing cost effectiveness of the conceptual solutions
  
- Develop a Plan of Service for the Preferred Alternative
  - Establish the project team
  - Draft Project Requirements Diagram (PRD) and circulate for comments
  - Initiate Concept Design Document and Project Scoping
  - Finalize the plan of service and PRD
  - Update and refine cost estimates
  - Develop the Business Case and Request capital funding for project



## Planning Criteria

### Standards and Criteria used for Planning:

- NERC and WECC Reliability Planning Standards
  - NERC (North American Electric Reliability Corporation) TPL-001-4
  - WECC (Western Electricity Coordinating Council) TPL-001-WECC-CRT-3.1 Regional Reliability Criteria



## 2018 BPA Transmission Plan

- BPA's Plans for Capital Expansion Projects
- Spans the 10 year horizon from 2018-2028
- Projects categorized by
  - Load Service Areas
  - Paths and Interties
  - Generator Interconnections
  - Line and Load Interconnections
- The following information is provided for each Project:
  - Project Description
  - Purpose
  - High-level Cost Estimate
  - Proposed Energization Date



## Next Steps

- Summarizing results of the 2019 System Assessment
- Posting I – Spring/Summer 2019
  - Summary of 2019 System Assessment Results and Conceptual Solutions
- System Assessment for 2020

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

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

