Helping our members work together to keep the lights on... today and in the future
SPP Integrated System (IS) Production Implementation Overview

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Objectives

• IS Overview
• SPP IS Production Implementation
• Other items related to SPP IS:
  – Loop flow assumptions
  – Market-to-Market flowgates
  – Interface price modeling
IS OVERVIEW
History of the Integrated System

• 1963 – The Missouri Basin Systems Group Pooling agreement was signed and the Joint Transmission System (JTS) was created

• 1998 – The JTS was modified to become the Integrated Systems under Western Area Power Administration’s OATT

• 1995-2010 – Western’s and other IS Transmission Owners’ facilities were a part of the Mid-Continental Area Power Pool (MAPP) Schedule F Tariff
SPP and the Integrated System (IS)
Make Up of the Integrated Systems

• Membership base of the IS
  – Western Area Power Administration (UGPM)
  – Basin Electric Power Cooperative (BEPM)
  – Heartland Consumers Power District (HCPD)
• Territory covers nine (9) states
Make Up of the Integrated Systems (cont)

• The IS comprises 9,848 miles of high-voltage transmission lines in Eastern Montana, North Dakota, and South Dakota, and integrates WAPA’s hydropower and Basin’s thermal resources.

• SPP projects benefits totaling $334.1 million over a 10-year period for its members from the inclusion of the Integrated System.
Market Participants with Generation

• Western Area Power Administration
  – 2598 MW

• Basin Electric Power Cooperative
  – 3985 MW

• Missouri River Energy Services
  – 479 MW

• Northwest Power Services
  – 482 MW

• Tenaska (Heartland Consumer Power District)
  – 105 MW
SPP’s Operating Region

Current
- 77,366 MW of generating capacity
- 46,136 MW of peak demand
- 48,930 miles transmission:
  - 69 kV – 12,569 miles
  - 115 kV – 10,239 miles
  - 138 kV – 9,691 miles
  - 161 kV – 5,049 miles
  - 230 kV – 3,889 miles
  - 345 kV – 7,401 miles
  - 500 kV – 93 miles

Future (October 2015)
- Adding 3 new members (WAPA, BEPC, and HCPD)
- + 5,000 MW of peak demand
- + 7,600 MW of generating capacity
- 50% increase in SPP’s current hydro capacity
All DC ties from EI to ERCOT and almost all from EI to WECC via the SPP/IS System.
SPP IS PRODUCTION
IMPLEMENTATION OVERVIEW
Integrated Systems Milestones

• June 1, 2015
  – Reliability Coordinator (RC) and Planning Coordinator (PC) functions transitioned from MISO to SPP

• June 26, 2015
  – Performance Testing Completed Successfully

• July 24, 2015
  – Market Trials Completed Successfully
Current Project Status

Project is in Green Status

- Market Trials complete
- Unstructured Testing is ongoing
- No risks or issues identified that would prevent go-live
Integrated Systems Go-Live

• October 1, 2015
  – BA function transitions from WAPA to SPP
    ▪ All Generation and Load will participate in SPP Marketplace
  – Tariff and Interchange functions transition from WAPA to SPP
  – Transmission Service Provider function for IS Systems in the West transition to SPP
ARR/TCR Transitional and Monthly timelines

IS Integration Transitional ARR Allocation Timeline

8/3/2015 - 8/14/2015
Transmission Service Entitlement Verification

8/17/2015 - 8/18/2015
Transitional ARR Nomination Window

8/21/2015
Transitional Allocation Results Posted

IS Integration October Monthly Allocation/Auction Timeline

8/28/2015 - 9/2/2015
Transmission Services Entitlement Verification

9/8/2015
Oct Monthly Allocation Nomination Window

9/15/2015 - 9/16/2015
Oct Monthly Allocation Posted

9/22/2015 - 9/23/2015
Oct Monthly Auction Bid Window Rd 1

9/25/2015
Oct Monthly Auction Bid Window Rd 2
Items to Note

- WAPA flowgates will transition to SPP either as Coordinated or Reciprocally Coordinated (M2M)
- WAPA BA Seam will now be SPP BA
- Cutover time is 10/1 00:00 CPT
- Teleconferences:
  - Have all Market Participants checkpoint call during transition from 2300 9/30 to 0100 10/1
Recommendations for existing MPs

• Any Tags that are in/out of WAPA (including area POR/POD changes) and run across midnight transition should be terminated at midnight and a new Tag should be created with a start time of 10/1 HE 0100

• Resource-owning MPs should call into the MP call 11pm 9/30 (notification shall be sent out via MP POC)

• Please pay close attention to the Day-Ahead Market solution posted on 9/30

• Please pay close attention to commitment and dispatch patterns from Operating Day 10/1 through 10/4 and beyond

• Please submit any inquiries via SPP RMS
IS Cutover Walkthrough

IS Integration Implementation Timeline 9/30 – 10/1

11:00
DA MKT Closed

16:00
DA MKT Posts

17:00
DA RUC Kicks off

20:00
DA RUC Posts

23:00
SPP Opens Reliability Call

00:00
Ask Resources to Follow SPP Setpoint Instructions

01:00
Potential End Reliability Call

02:00
Potential End MP Call
One week out beginning 9/24

- IS Market Participants shall begin to submit all Production-level Markets data including the following:
  - Day-Ahead Offers
  - Real-time Offers
  - Mitigated Offers
  - Day-Ahead Bids targeted 10/1
  - Tags/Schedules may be submitted

- SPP shall begin to run Multi-Day Reliability Unit Commitment for target day
Three days out 9/28

- IS Resource-owning Market Participants shall provide SPP with an hourly generation schedule through 10/3
- SPP shall insert this hourly generation schedule into the Production Current Operating Plan (COP) database
- IS Resource-owning Market Participants requested to submit Self Commit status for 10/1 and 10/2 Operating Days.
LOOP FLOW ASSUMPTIONS
Loop Flow assumptions for SPP IS

• SPP’s Quality Assurance (QA) environment will be managed with higher scrutiny for the last two weeks of September

• This environment has held the SPP with IS model for a few months for the purposes of performance testing

• Current approach will be to take the External Injection/Withdrawal (EIW) files from QA and use them for the forward studies in the SPP Production environment.

• These shall be used for studies 7 days out (9/24) through the Day-Ahead Reliability Unit Commitment the evening of 9/30
MARKET-TO-MARKET FLOWGATES
Current Status and Next Steps

• Completed all coordination tests for a complete list of Reciprocally Coordinated Flowgates

• Currently working with CMPWG members to schedule a meeting to discuss Freeze Date data

• Once the CMPWG members approve it, the data will go into OATI’s demo systems for mock runs
Cutover Strategy

- Flowgates will be added to OATI’s NNL System on 9/28 in order for the Allocation data to be populated on 10/1

- Flowgates will be added to SPP internal systems by 9/28 with an effective date and time of 10/1/15 at 12:00 AM
EMS Areas Tied to MISO CPnode

ALTE | DENL | MP
ALTW | DPC | MPW
AMIL | EES | NIPS
AMRN | GRE | NSP
BCA | HE | OTP
BREC | IPL | SIGE
CAJN | LAFA | SIPC
CIN | LEPA | SMEP
CLEC | MDU | SMP
CWLD | MEC | WEC
CWLP | MGE | WPS
MISO Interface Definition

• SPP’s MISO price includes all loads in 33 EMS Control Areas
  – Unchanged for 10/1

• Interface Settlement Locations modeled for 1st Tier MISO Control Areas (POR/POD)
  – Before 10/1:
    ▪ CLEC, EES, MEC, AMRN
  – Added on 10/1
    ▪ OTP, NSP, MDU, GRE, DPC, ALTW
  – All assigned the MISO Price
    ▪ Gaming Prevention
Project Manager: Dena Giessmann
dgiessmann@spp.org

Operations Manager: Casey Cathey
ccathey@spp.org

Southwest Power Pool

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