WAPA Update

Central Montana Electric Power Cooperative
Annual Meeting
June 3, 2021 | Virtual

Lori Frisk
Vice President of Power Marketing
Upper Great Plains Region
Western Area Power Administration
New DOE Secretary

Jennifer M. Granholm
Tracking Changes from D.C.

- Active discussions during Biden transition and continuing with new DOE, DOI Leadership
- Congressional oversight and appropriations leadership: introductory briefings w/ members and staff underway
- All GOV focus on infrastructure: in development
- Renewed focus on TIP
- Wildfire Resilient Power Grid Act of 2020
• Keystone XL permit rescinded

• Bulk-Power System Executive Order
  • authorizes the U.S. Secretary of Energy to secure America’s bulk-power system from foreign adversaries

• No movement for PMAs (yet)
Personnel updates

- Mark Gabriel – retired March 13
- Acting Administrator and CEO Tracey LeBeau
- Posted vacancies for UGP and RM Regional Managers
  - Acting Senior VP and UGP Regional Manager Dave Neumayer
  - Acting Senior VP and RM Regional Manager Tim Vigil
- Acting Senior VP and DSW Regional Manager Jack Murray
- Acting Senior VP and CRSP Manager Rodney Bailey
Vision while interim administrator

• Committed to mission & safety
• Markets remain priority to stay on pace
• Collaborative with customers and new Administration
• Pausing Strategic Roadmap refresh
• Moving on leadership vacancies
• Readiness for weather or other external events
• Remain vigilant and on track with COVID-19 response and planning
Other priorities

• Resilience
• Workload Management
• Responsible Workplace Re-entry
• Data as a Strategy
• Standardized Budgeting and Reporting Initiative
• Hydropower MOU
Mission

• OLD:
  • Market and deliver clean, renewable, reliable, cost-based federal hydroelectric power and related services

• NEW:
  • Safely provide reliable, cost-based hydropower and transmission to our customers and the communities we serve
Vision

• OLD:
  • Continue to provide premier power marketing and transmission service to our customers, as well as contribute to enhancing America’s energy security and sustaining our nation’s economic vitality

• NEW:
  • Empowering communities, securing a resilient energy future
Coronavirus response

- Stabilizing conditions and moving closer to new normal
- End of mask mandate on federal property
- Maximum Telework
- Mission Critical Travel Only
- Evaluating re-entry and post-pandemic workplace
UGP Customer contracts update

• 2021 Power Marketing Initiative
  • 30-year Firm Electric Service Contracts through 2050
    • 1/1/2021 removal of up to 7% losses and/or a 1 mill discount
  • 30-year Native American Tribe Bill Crediting Contracts with 22 of 25 tribes
    • Continue to work with Flandreau, Ponca and Omaha
    • PMI Tribal Contract update – Contact Darla at (406) 255-2938

• 2021 Other Contracts
  • FES Exhibits B & C Project to start this summer, approx. 600
  • Other Contracts, Construction, Maintenance, Interconnection, Environment, Communications, Generation, Transmission, etc.
Markets update

- WEIS implementation completed Feb. 1.
- SN EIM go-live completed March 25.
- DSW study results expected this spring.
  - Public process begins
- CAISO EIM governance review
- Continuing discussions on SPP RTO expansion into the West.

BA boundaries are approximate and for illustrative purposes only.
SPP’s regional transmission organization (RTO) – West Update

• In November 2020, SPP announced that several utilities would evaluate the benefits of placing western transmission facilities under the terms and conditions of SPP's Open Access Transmission Tariff.

• An SPP Brattle study found that the move would be mutually beneficial and produce $49 million a year in savings.

• SPP anticipates its wholesale electricity market, resource adequacy program and other regionalized services can help western members achieve renewable-energy goals, reinforce system reliability and leverage new opportunities to buy, sell and trade power.
SPP RTO West Utilities

Evaluating SPP RTO membership on the West

• Basin Electric Power Cooperative
• Colorado Springs Utilities
• Deseret Power Electric Cooperative
• Municipal Energy Agency of Nebraska (MEAN)
• Tri-State Generation and Transmission Association
• Western Area Power Administration (WAPA)*
  • Upper Great Plains-West (UGP-West)
  • Loveland Area Projects
  • Colorado River Storage Project
SPP RTO on the West - Timeline

- **Jan. – June 2021**: Technical Discussions
- **June – July 2021**: Terms and Conditions Review - Members Forum
- **July 2021**: Terms and Conditions Policy Level Agreement - approved by West Interested Parties and SPP Board of Directors/Regional State Committee
- **Apr. – 2022**: SPP Staff begin preparing tariff modifications
- **Q1 - 2023**: FERC approves tariff
- **Feb. – May 2021**: Governing Document and Tariff Review
- **July 2021**: Terms and Conditions Review - Review with MOPC
- **Apr. – 2022**: Execution of Membership Commitment Agreement by the West Interested Parties
- **Oct. - 2022**: File Tariff Modifications with FERC to implement the SPP RTO on the West
- **Mar. 1, 2024**: Launch SPP RTO in the West March 1, 2024
Winter Storm Uri

SPP REGION IN COLDEST PART OF U.S.

Lowest temperatures forecast for Feb. 14-16, 2021

Source: National Weather Service, Global Forecast System

- SPP service territory/balancing authority
- Temperatures below 0°F
- Between 0° and 32°F
- Above 32°F

*Locations of ISOs/RTOs are approximate
Winter Storm Uri

HISTORIC WEATHER EVENT

- 73% of mainland U.S. covered in snow
- 3,000 daily and 79 all-time local low temperature records broken
- “Comparable to the historical cold snaps of Feb. 1899 & 1905.”

1 - National Oceanic and Atmospheric Administration
2 - National Weather Service Weather Prediction Center
3 - National Weather Service Weather Prediction Center
Generation Deficiency

- Texas generation went offline due to cold temperatures and units were not winterized
- Oklahoma rain/snow and cold temperatures caused icing on the wind turbines
- Midwest wind speeds were less than 2 mph resulting in turbines not operating
- Numerous plant outages across the 14-state footprint
Outage in the SPP Footprint
Generation Outages by Reason
Generation Outages by Fuel Type
SPP Hourly Energy Prices
Higher SPP Prices in February
# SPP Energy Emergency Alerts

**SPP BALANCING AUTHORITY OPERATIONS:** FEB. 4-20, 2021

<table>
<thead>
<tr>
<th>Thurs. 2/4 to Mon. 2/8</th>
<th>Tues 2/9 to Sat. 2/13</th>
<th>Sun. 2/14</th>
<th>Mon. 2/15</th>
<th>Tues. 2/16</th>
<th>Wed. 2/17</th>
<th>Thurs. 2/18</th>
<th>Fri. 2/19</th>
<th>Sat. 2/20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal operations in effect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EEA2 in effect</td>
<td>EEA1 in effect</td>
<td></td>
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</tr>
</tbody>
</table>

**Thurs. 2/4:** Issued cold weather alert to grid operators

**Tues. 2/9:** Declared conservative operations until further notice

**Thurs. 2/11:** Committed longer-lead time generating resources for Sat. 2/13 to Tues. 2/16

**Sat. 2/13:** Reminded market participants of emergency cap & offer processes

**Mon. 2/8:** Issued resource alert to grid operators: "Implement resource preparations...ensure resource commitment start-up and run times. Report fuel shortages & transmission outages..."

**Conservative operations in effect**

- **05:00** Declared EEA1
- **07:22** Declared EEA2
- **10:08** Declared EEA3
- **12:04** - Demand interruption
- **13:01** - EEA3

**EEA2 in effect**

- **06:15** Declared EEA3
- **06:44** Demand interruption
- **10:07** - EEA3
- **11:30** Declared EEA2

**EEA1 in effect**

- **09:30** Ended EEA and remained in conservative operations through 22:00 Sat. 2/20 with appeal for public conservation
- **09:20** Ended EEA and remained in conservative operations through 22:00 Sat. 2/20 with appeal for public conservation

**Conservative operations in effect**

- **12:31** Declared EEA1
- **13:15** Declared EEA1
- **18:20** Declared EEA2
- **22:59** Declared EEA1

**EEA1 in effect**

- **18:28** Declared EEA2
- **18:25** - Declared EEA1

**Conservative operations in effect**

- **22:00** Declared normal operations
UGP Operations Load Shedding

**INTERRUPTIONS BY ENTITY**

<table>
<thead>
<tr>
<th>Participating Entity</th>
<th>% of MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSWS</td>
<td>16.8</td>
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<tr>
<td>WAPA</td>
<td>13.5</td>
</tr>
<tr>
<td>SPS</td>
<td>12.4</td>
</tr>
<tr>
<td>OKGE</td>
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<td>KCPL</td>
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<td>WR</td>
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<td>OPPD</td>
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<tr>
<td>KACY_N</td>
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<td>INDN</td>
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<tr>
<td>SPA</td>
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</tr>
<tr>
<td>TSIGT</td>
<td>0.13</td>
</tr>
<tr>
<td><strong>SPP Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Winter percentages effective 12/1 through 2/28

Directed interruptions allocated to transmission operators on pro-rata basis

February 15<sup>th</sup> from 12:04 to 13:01 CT
2 customers, 83 MW of load

February 16<sup>th</sup> from 6:44 to 10:07 CT
20 customers, 367 MW of load
UGP Operations Lessons learned

- Communicate the state of the grid
- Communicate and discuss load shedding process with each entity
- Training on the various grid levels
- Periodic drill
  - Initial drill this year
UGP Marketing COE generation
Scheduled and Actual

SPP directed UGP to provide reliability energy

Corps & WAPA delivered extra 22,500 MWh of hydropower to SPP Feb. 15-18.
Extreme weather event
Total daily generation and load

![Bar chart showing total daily generation and load from 2/14/2021 to 2/20/2021. The chart compares total generation (blue bars) and total load (brown bars) for each day.](chart.png)
UGP Firm Obligations vs. Resource Net Position - April 2020 to March 2021

- April 20: 229,838.54
- May 20: 309,306.44
- Jun 20: 244,466.14
- Jul 20: 249,504.31
- Aug 20: 147,080.29
- Sep 20: 207,128.30
- Oct 20: 54,591.60
- Nov 20: (126,658.20)
- Dec 20: (299,793.36)
- Jan 21: (225,407.40)
- Feb 21: (202,631.44)
- Mar 21: (107,839.83)
UGP Available Capacity Month to Month – Jan. 2021 to Feb. 2022

5 Year UGP Average Load vs COE BOR Forecast Resource
UGP marketing – energy only

*Purchase and sales as of 3/11/2021*
UGP Marketing Lessons learned

• Work with vendors on advance weather forecasts
• Watch for SPP EEA indicators
• Communicate the state of the grid with the Corp.
  • Additional reliability energy
• Contracts for energy sales
• Analyze Bi-lateral Purchases vs. Market Purchases
• Strategies for Demand Bids
• Review rate impacts
On May 9, 2021 the mountain Snow Water Equivalent (SWE) in the “Total above Fort Peck” reach was 9.9”, 75% of the May 9 average and 60% of the normal April 15 peak. The "Total above Fort Peck" reach peaked on March 31, 2021, at 14.1” SWE and 86% of the normal peak. On May 9, 2021 the mountain SWE in the “Fort Peck to Garrison” reach was 11.2”, 87% of the May 9 average and 77% of the normal April 15 peak. The "Fort Peck to Garrison" reach peaked on April 26, 2021, at 14.0” SWE and 96% of the normal peak.

Provisional data. Subject to revision.
U.S Drought Monitor

U.S. Drought Monitor
Missouri Basin RFC

April 27, 2021
(Released Thursday, Apr. 29, 2021)
Valid 8 a.m. EDT

Intensity:
- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

Author:
Richard Heim
NCEI/NOAA

https://www.drought.gov/drought/
droughtmonitor.unl.edu
Drought Update

U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period

Valid for April 15 - July 31, 2021
Released April 15

https://www.cpc.ncep.noaa.gov/
Missouri River Mainstem System
Forecasted Energy Generation - 2021

Energy in GWh

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec J22 F22

Actual Forecast 1967-2020

Upper Basic: 9,000 GWh
Basic: 8,800 GWh
Lower Basic: 8,900 GWh
Mainstem System Generation
Million Megawatt Hours

June 1, 2021 Forecast
Upper Basic: 8.8
Lower Basic: 8.9
P-SMBP composite rate projection is holding
P-SMBP rate update

- Study set at 24.29 mills/kWh for Pick Sloan Composite rate
- *Polar Vortex Impact*
  - Pick Sloan FY21 PPW projection of $46M, two weeks of SPP billing totaled $138M
  - Deficit very likely this Fall
    - Too early to predict amount
    - Deficits have 10-year balloon payment
    - With average water, could potentially pay off deficit in 3 years
- Pinch Point in 2045 – $231M Aid to Irrigation
- Drought Adder customer notification
  - Preliminary Notice in June
  - Final Notice in October
Questions?
Contact/follow me

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Ft Peck, COE