



# FEBRUARY 2021 WINTER WEATHER EVENT

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LOUISIANA PUBLIC SERVICE COMMISSION  
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*Helping our members work together to keep  
the lights on... today and in the future.*



SouthwestPowerPool



southwest-power-pool



SPPorg

# THE BIG PICTURE

## A historic winter storm enveloped the SPP region

- 73% of mainland U.S. covered in snow <sup>1</sup>
- 3,000 daily and 79 all-time local low temperature records broken <sup>2</sup>
- “Comparable to the historical cold snaps of Feb. 1899 & 1905.” <sup>3</sup>
- Extreme weather caused generator outages, fuel supply problems and record high gas and electricity use

## SPP worked with partners to prevent grid damage and minimize outages

- Prepared in advance: issued alerts and calls to reduce energy use
- Worked with members and neighbors to meet power demand in region
- During five days of energy emergency alerts, SPP and partners minimized grid power interruptions to 260 total minutes
- Actions prevented system from experiencing cascading outages

1 – [National Operating Hydrologic Remote Sensing Center](#)

2 – [National Weather Service Weather Prediction Center](#)

3 – [National Weather Service Weather Prediction Center](#)

# **SPP'S EMERGENCY RESPONSE FRAMEWORK**



# WHO IS SPP?

501(c)(6) nonprofit corporation

One of 9 regional grid operators

104 member companies in 14 states

“Air traffic control” for high-voltage grid

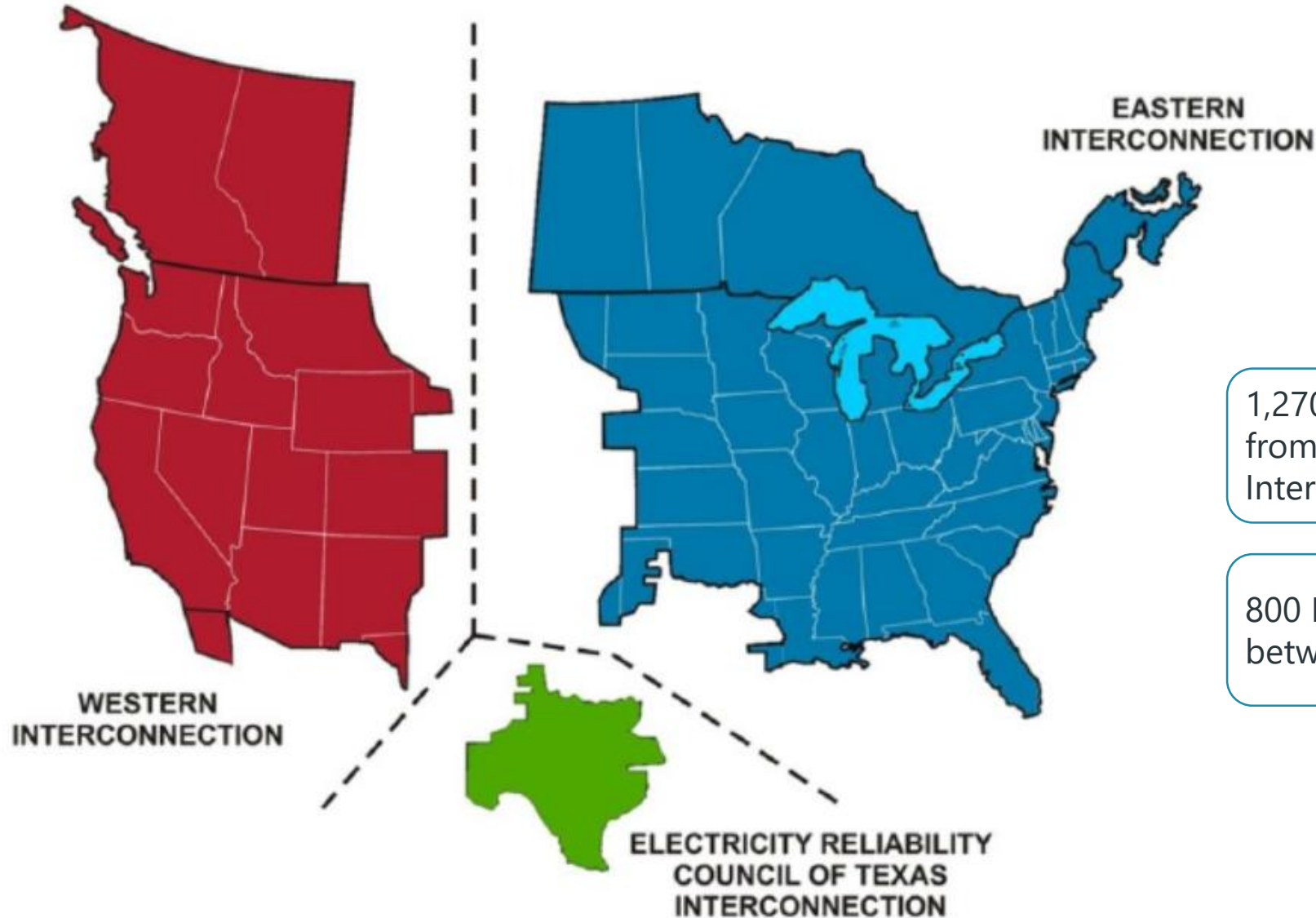
Balances supply and demand across region

Protects grid from overload and overuse

Operates wholesale energy market



# THREE ELECTRIC INTERCONNECTIONS



1,270 MW potential transfer capability from Western to Eastern Interconnection

800 MW potential transfer capability between SPP and ERCOT

# **2021 WINTER STORM GRID EMERGENCY**

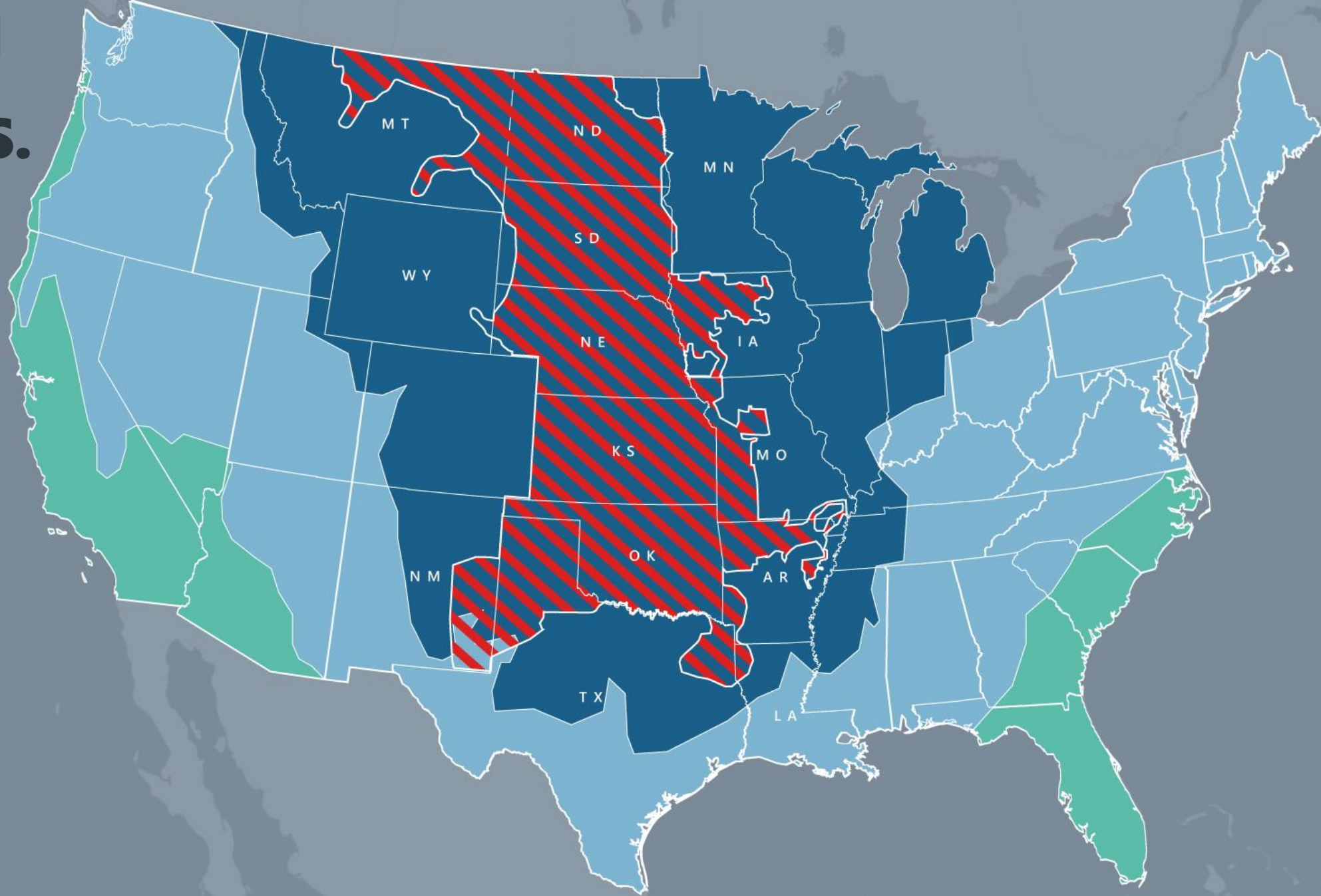
# SPP REGION IN COLDEST PART OF U.S.



Lowest temperatures forecast  
for Feb. 14-16, 2021

Sources: National Weather Service,  
Global Forecast System

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





# BALANCING AUTHORITY (BA) OPERATING LEVELS

## Levels/alerts defined by SPP operating plans

<b>Normal Operations</b>	SPP has enough generation to meet demand, has available reserves and does not foresee extreme or abnormal reliability threats
<b>Weather alert</b>	SPP expects extreme weather in its reliability coordination service territory
<b>Resource alert</b>	SPP's BA area expects severe weather conditions, significant outages, wind-forecast uncertainty and/or load-forecast uncertainty with potential to impact total capacity.
<b>Conservative Operations</b>	SPP determines the need to operate system conservatively to avoid an emergency based on weather, environmental, operational, terrorist, cyber or other events
<b>Maximum emergency generation notification</b>	SPP foresees the need to use emergency ranges of resources for a certain hours.

## Levels defined\* by NERC EOP-011-1

<b>Energy Emergency Alert (EEA) Level 1</b>	<b>All available generation resources in use</b> <ul style="list-style-type: none"> <li>All generation is committed, and there is concern about maintaining required reserves for BA</li> <li>Non-firm wholesale energy sales curtailed.</li> </ul>
<b>EEA Level 2</b>	<b>Load management procedures in effect</b> <ul style="list-style-type: none"> <li>BA is no longer able to provide its expected energy requirements and is energy deficient</li> <li>Operating plan implemented, including public appeals and demand response</li> <li>BA is still able to maintain minimum reserves</li> <li>Market participants and other BAs notified</li> <li>Transmission limitations evaluated and revised</li> <li>BA makes use of all available resources</li> </ul>
<b>EEA Level 3</b>	<b>Firm load interruption imminent or in progress</b> <ul style="list-style-type: none"> <li>BA is unable to meet minimum contingency reserve requirements</li> <li>System &amp; reliability limits reevaluated and revised</li> <li>Immediate action taken to mitigate undue risk to the Interconnection, including load shedding.</li> </ul>

\* These are paraphrased, summarized definitions. Full definitions: <https://www.nerc.com/pa/Stand/Reliability%20Standards/EOP-011-1.pdf>



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

*Time blocks are not to scale*

Thurs. 2/4 to Mon. 2/8	Tues 2/9 to Sat. 2/13	Sun. 2/14	Mon. 2/15	Tues. 2/16	Wed. 2/17	Thurs. 2/18	Fri. 2/19	Sat. 2/20		
Normal operations in effect	<p><b>Tues. 2/9:</b> Declared conservative operations until further notice</p> <p><b>Thurs. 2/11:</b> Committed longer-lead time generating resources for Sat. 2/13 to Tues. 2/16</p> <p><b>Sat. 2/13:</b> Reminded market participants of emergency cap &amp; offer processes</p>	<p>Requested member companies issue appeal for public conservation</p>	Conservative operations in effect	EEA2 in effect	<p>EEA 2 in effect</p>	<p>EEA1 in effect</p>	<p>EEA1 in effect</p>	<p>Conservative operations in effect</p>		
<p><b>Thurs. 2/4:</b> Issued cold weather alert to grid operators</p>			05:00 Declared EEA1	06:15 Declared EEA3					06:46 Directed interruptions	09:30 Ended EEA and declared conservative operations through 22:00 Sat. 2/20, with appeal for public conservation
			07:22 Declared EEA2	10:07 – EEA3 Restored service					10:08 Declared EEA3 New record peak	11:30 Declared EEA2
			12:10 Directed interruptions	12:31 Declared EEA1					12:10 Directed interruptions	13:15 Declared EEA1
			13:00 - EEA3 Restored service	18:20 Declared EEA2					13:00 - EEA3 Restored service	18:25 – Declared EEA1
			14:00 Declared EEA2	22:59 Declared EEA1					14:00 Declared EEA2	
			18:28 Declared EEA2						18:28 Declared EEA2	
<p><b>Mon. 2/8:</b> Issued resource alert to grid operators: "Implement resource preparations...ensure resource commitment start-up and run times ...report fuel shortages &amp; transmission outages..."</p>								22:00 Declared normal operations		