

2021 Polar Vortex After Action Review

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Agenda

- Problem Statement
- Information Gathering
- Extreme Cold in Context
- Key Takeaways
- Next Steps

Problem Statement

- During the 2021 Midwest Polar Vortex Event (Feb. 4 – Feb. 20) the Omaha Public Power District had to enact controlled outages for the first time in the organization's history. This came at the request of the Southwest Power Pool (SPP), a Regional Transmission Organization (RTO) and Balancing Authority, of which OPPD is a member.
- SPP declared a Level 3 Energy Emergency multiple times during the polar vortex event as a urgent effort to maintain the stability of the Bulk Electric System (BES).
- An after action report is necessary to review what went well, what could have gone better, and what changes are needed to prepare for the future.

Information Gathering

- 88 internal subject matter expert all lines of business
 - Front Line Employees
 - Front Line Supervisors and Managers
 - Directors
 - Senior Management

Business Unit	#
Customer Service	21
Energy Production & Nuclear Decommissioning	18
Energy Delivery	14
Financial Services	14
Public Affairs	9
Business Technology & Building Services	6
Safety & Technical Training / Corporate Strategy & Governance / Human Capital / Executive & Legal Counsel	6

- National Weather Service Omaha assisting in the analysis of this event compared to the historical record

Extreme Cold in Context – National Weather Service

- From 1900 to current, roughly every 5 years Omaha experienced a 3+ day below zero average temperature event.
- Feb 2021 Event : 3 day event (Feb 7-9) closely followed by a 5 day event (Feb 12-16).
- This polar vortex event impacted the entire SPP footprint, which challenged the RTO as a whole. Not all previous events impacted the region to this degree.
- Prior to the 2021 event, the last extreme cold event was in 2004. This was the longest stretch between events in the period analyzed.
- Other significant historical events:
 - Winter of 1936: 11 day below zero event
 - Winter of 1983: 9 day below zero event

Key Takeaways

1. More accessible, individualized, and timely communication is critical to our customers during an energy emergency event and OPPD will improve to meet our customer-owner's communications needs.
2. OPPD's emergency event plan should be enhanced and made more sustainable to better support grid reliability during extreme events.
3. Given the increased financial risk of a more volatile and interconnected energy market, OPPD should review and consider expansion of its energy and fuel risk mitigation options to reduce the potential impact from future extreme events.
4. OPPD should review customer demand for and consider expanding its customer products and services to increase the usage and flexibility of self-generation and curtailment programs to minimize customer impact during extreme events.
5. OPPD's membership in SPP is critical to our organization's ability to meet our strategic goals and support the delivery of reliable energy during local emergency events (e.g. floods). OPPD should continue to extract value from its SPP membership and leverage our expertise and influence in the SPP stakeholder process to enact positive changes to the benefit of our customers

Next Steps

- The Executive Leadership Team will guide the execution of the 24 recommendations outlined in the Polar Vortex After Action Report according to their priority level while accounting for resource availability and capacity management considerations. Progress updates will be provided periodically.
- The Polar Vortex After Action Report will be made available on OPPD.com for our customer-owners.
- OPPD representatives will continue to support the various SPP working groups supporting the implementation of SPP's recommendations as a result of the polar vortex.