

Duke Energy Carolinas, LLC & Duke Energy Progress, LLC
Docket NO. M-100, Sub 163
PSDR No. 2-15.b 2014-2015 Polar Vortexes vs. 2022 Winter Storm

Duke Meteorology

2015 Polar Vortex event vs. 2022 event:

The 2015 event occurred on a Wed night through Friday in mid-February.

The 2022 event occurred on a Friday night into Saturday morning across a holiday weekend in late December.

DEC:

The 2015 event was a 2-day occurrence of extreme cold. Both days leading up to the event exhibited a “typical” AM low temp, PM high temp pattern. On Thurs 2/19, the low temp was 12 degrees with a high temp in the middle 20s. Then, on Fri 2/20, the low temp was 8 degrees with a high temp of 30 degrees. Sustained wind speeds were around 15 mph on the afternoon/evening of 2/18 but then around 10 mph throughout the day on 2/19 and 5 mph or less on the night of 2/19 through the morning of 2/20. Not aware of any wind-related outages prior to the event.

In the 2022 event, there was an “atypical” AM high temp, PM low temp pattern on the day prior as temperatures fell during the daytime hours. On 12/23, the DEC system average temperature dropped from 41 @ 7am to 26 @ 4pm to 16 @ 10pm and continued to fall overnight, reaching to 8 degrees @ 7am on the morning of 12/24. There was a 10 degree drop in temperature across the evening peak. Sustained wind speeds were around 15-20 mph throughout the day and the diminished to around 10 mph overnight. Significant wind-related outages occurred on the morning prior to the event.

DEP:

The 2015 event was a 2-day occurrence of extreme cold. Both days leading up to the event exhibited a “typical” AM low temp, PM high temp pattern. On Thurs 2/19, the low temp was 17 degrees with a high temp of 26 degrees. Then, on Fri 2/20, the low temp was 10 degrees with a high temp of 29 degrees. Sustained wind speeds were 10-15 mph on the afternoon/evening of 2/18 through the afternoon of 2/19 and around 5 mph on the night of 2/19 through the morning of 2/20. Not aware of any wind-related outages prior to the event.

In the 2022 event, there was an “atypical” AM high temp, PM low temp pattern on the day prior as temperatures fell during the daytime hours. On 12/23, the DEP system average temperature dropped from 50 @ 7am to 30 @ 4pm to 21 @ 10pm and continued to fall overnight, reaching 12 degrees @ 7am on the morning of 12/24. There was a 9 degree drop in temperature across the evening peak. Sustained wind speeds were around 15-20 mph throughout the day but then diminished to around 10 mph overnight. Significant wind-related outages occurred on the morning prior to the event.