

Duke Energy Carolinas, LLC & Duke Energy Progress, LLC
Docket NO. M-100, Sub 163
PSDR No. 2-14. Company View of Pending Storm – Wind and Cold Weather Event
Period: December 19, 2022 through December 24, 2022

Duke Meteorology Weather

Thursday, December 22nd:

Regarding the temperature forecasts:

The daily weather forecast discussion was sent at 6:10am on 12/22:

A strong cold front will approach from the west then blast across the region Friday morning, followed by an arctic air mass for the weekend.

The cold front will sweep across the DEC region between 4am and 7am. Our forecast has temperatures dropping from the upper 40s to lower 30s during that period. The front will sweep across the DEP region between 7am and 12am. Our forecast has the temperatures dropping from around 50 degrees to lower 30s during that period. Friday will be sunny, windy and cold. Wind gusts 45 to 55 mph across the higher elevations, 35 to 45 mph elsewhere. Strongest gusts will be in the morning. DEC temps will be nearly steady in the low-mid 20s for much of the day on Friday with sustained winds 15 to 25 mph. DEP temps will gradually fall from the low-mid 30s mid-morning to mid-upper 20s by late afternoon with sustained winds 20 to 25 mph.

The combination of the arctic air mass and the strong winds will result in very cold wind chills across the region Friday afternoon through Saturday morning. For the higher elevations, minimum wind chills will be -10F to -20F. To the east, minimum wind chills will be -5F to +5F.

The main story for the holiday weekend is the arctic air mass that will prevail across the eastern US. Temperatures will be 15 to 25 degrees below normal; coldest on Saturday with slight moderation Sunday and Monday. Dry conditions are expected each day.

Saturday will be sunny with low temps in the low-mid teens west, mid-upper teens east followed by high temps in upper 20s to lower 30s. Sunday will be slightly warmer, starting in the mid-upper teens followed by highs in the 30s.

Note: At this time, Duke Meteorology is forecasting a DEC system average low temperature of 12 degrees on the morning of Saturday 12/24 and a DEP system average low temperature of 15 degrees on the morning of Saturday 12/24. For Sunday 12/25, Duke Meteorology is forecasting a DEC system average low temperature of 15 degrees and a DEP system average low temperature of 17 degrees.

Regarding the threat of outage-producing winds on Friday:

The daily weather outlook was sent at 7:12am on 12/22:

Significant power outages are likely across the Carolinas Service Area tonight through Friday due to very strong and gusty winds in association with this cold front passage. The overnight model guidance has trended slightly faster with the timing of the front, so the peak wind gusts are now expected arrive a couple of hours sooner than previously anticipated. It now looks like we will see gusts up to 45 mph across Upstate SC and western NC beginning closer to midnight tonight. By 4am, expecting wind gusts up to 45 mph along the I-85 corridor and gusts up to 40 mph as far east as the I-95 corridor. At 7am, the peak gusts will have exited the I-85 corridor but will be moving through the I-95 corridor. Some of the model guidance suggests we could see wind gusts up to 50 mph (and possibly even a bit higher) across the Triangle North/South zones, western portions of Coastal Zone and Lower Pee Dee Zone right around daybreak. Then, the peak wind gusts move off the coast by 10am. Once the peak wind gusts sweep across the region, look for wind gusts generally 35-40 mph through the afternoon hours.

The Mountain Zone will remain very windy/gusty throughout the day. Look for wind gusts at or greater than 45 mph beginning around midnight tonight and persisting through late Friday evening. Peak wind gusts >50 mph are most likely to occur between daybreak and mid-afternoon.