

February 2024 ERCOT Monthly Operations Report

Reliability and Operations Subcommittee Meeting

April 04, 2024

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# Report Highlights

* The unofficial ERCOT peak demand was 55,855 MW for the month of February on 02/19/2024 HE 8:00; this is 7,653 MW less than the February 2023 demand of 63,508 MW on 02/01/2023 HE 19:00.
* A PVGR Generation Record of 17,201 MW was set on 02/19/2024 at 10:20.
* A PVGR Penetration Record of 39.94% was set on 02/18/2024 at 15:05.
* There were 3 Frequency events.
* There were 2 Contingency Reserve events.
* There was no instance where Responsive Reserve was deployed.
* There was 1 Advisory due to postponed DAM results.
* There were 6 HRUC commitments.
* There were 30 days congestion on Valley Export GTC, 25 days on West Texas Export GTC, 25 days on Panhandle GTC, 25 days on Zapata Starr GTC, 24 days on North Edinburg to Lobo GTC, 17 days on Wharton County GTC, 18 days on Hamilton GTC, 14 days on Nelson Sharpe to Rio Hondo GTC, 3 days on North to Houston GTC, and 2 days on East Texas GTC. There was no activity on the remaining GTCs during the month.

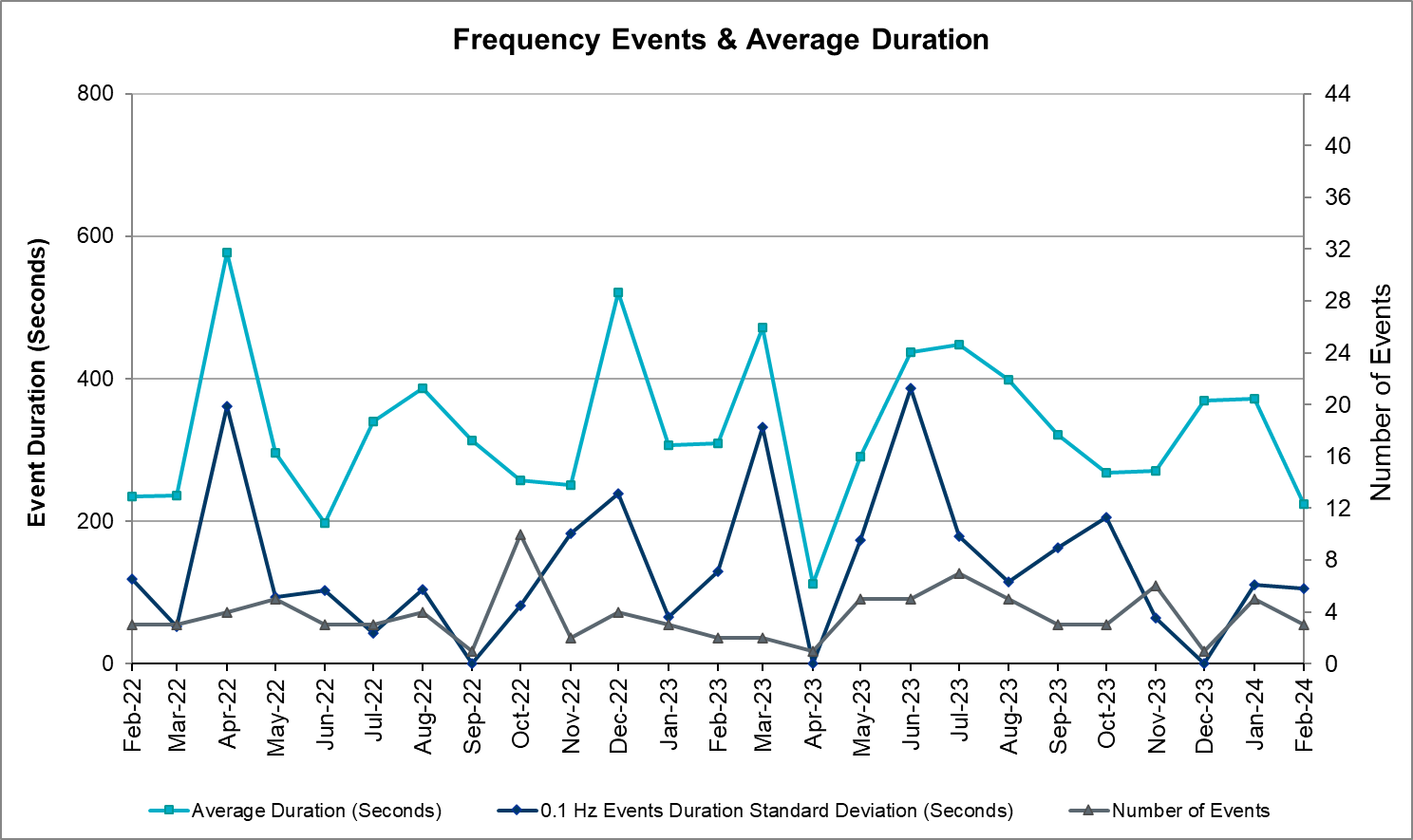
# Frequency Control

## Frequency Events

The ERCOT Interconnection experienced 3 frequency events, which resulted from units tripping. The average event duration was 00:06:12.

A summary of the frequency events is provided below. The reported frequency events meet one of the following criteria: Delta Frequency is 60 mHz or greater; the MW loss is 350 MW or greater; resource trip event triggered ECRS deployment. Frequency events that have been identified as Frequency Measurable Events (FME) for purposes of BAL-001-TRE-2 analysis are highlighted in blue. When analyzing frequency events, ERCOT evaluates PMU data according to industry standards. Events with an oscillating frequency of less than 1 Hz are inter-area, while higher frequencies indicate local events. Industry standards specify that damping ratio for inter-area oscillations should be 3.0% or greater. For the frequency events listed below, the ERCOT system met these standards and transitioned well after each disturbance. In the case of negative delta frequency, the MW Loss column could refer to load loss.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date and Time** | **Delta Frequency** | **Max/Min Frequency** | **Duration of Event** | **PMU Data** | | **MW Loss** | **Load** | **IRR** | **Inertia** |
| **(Hz)** | **(Hz)** | **Oscillation Mode (Hz)** | **Damping Ratio** | **(MW)** | **%** | **(MW-s)** |
| 2/27/2024 9:21:15 | 0.099 | 59.844 | 00:05:46 | 0.74 | 16% | 761 | 45,914 | 51% | 187,881 |
| 2/28/2024 10:15:58 | 0.077 | 59.902 | 00:02:42 | 0.71 | 12% | 603 | 46,396 | 54% | 200,705 |
| 2/28/2024 2:29:49 | 0.093 | 59.919 | 00:02:43 | 0.81 | 11% | 539 | 38,870 | 55% | 189,713 |



(Note: All data on this graph encompasses frequency event analysis based on BAL-001-TRE-2.)

## ERCOT Contingency Reserve Events

There were 2 events where ERCOT Contingency Reserve MWs were released to SCED. The events highlighted in blue were related to frequency events reported in Section 2.1 above.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date and Time Released to SCED** | **Date and Time Recalled** | **Duration of Event** | **Maximum MWs Released** | **Comments** |
| 2/27/2024 9:21 | 2/27/2024 9:28 | 0:07:11 | 779 | Unit Trip |
| 2/28/2024 10:16 | 2/28/2024 10:19 | 0:03:08 | 329 | Unit Trip |

## Responsive Reserve Events

There were 0 events where Responsive Reserve MWs were released to SCED.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date and Time Released to SCED** | **Date and Time Recalled** | **Duration of Event** | **Maximum MWs Released** | **Comments** |
| N/A | N/A | N/A | N/A | N/A |

## Load Resource Events

None.

# Reliability Unit Commitment

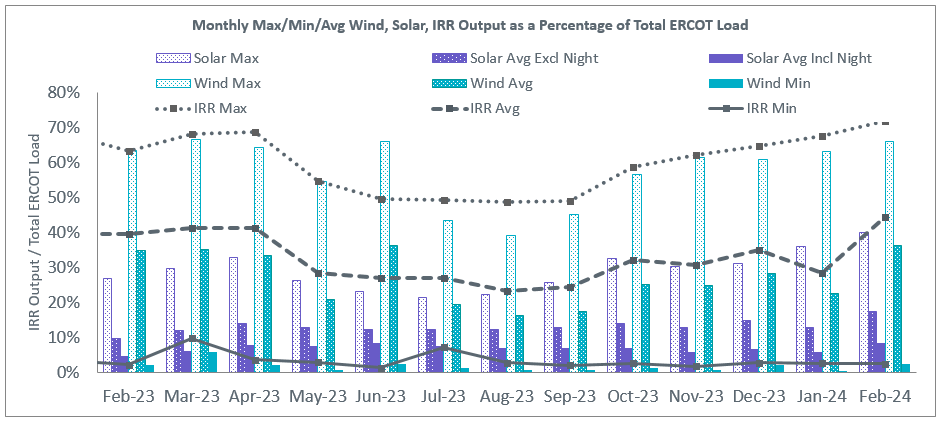
ERCOT reports on Reliability Unit Commitments (RUC) monthly. Commitments are reported grouped by operating day and weather zone. The total number of hours committed is the sum of the hours for all the units in the specified region. Additional information on RUC commitments can be found on the MIS secure site at Grid 🡪 Generation 🡪 Reliability Unit Commitment.

There were no DRUC commitments.

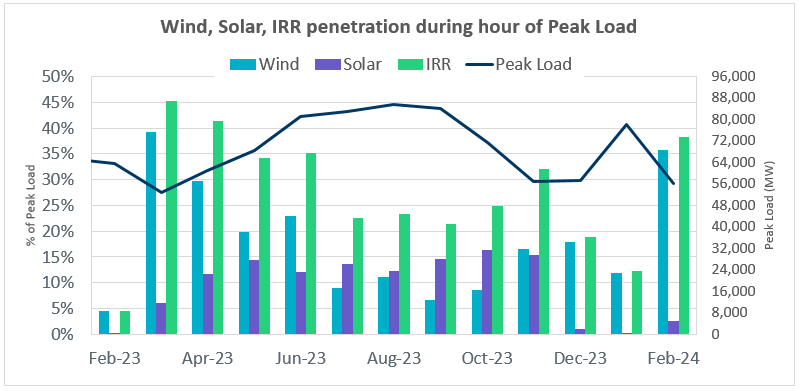
There were 6 HRUC commitments.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Resource Location** | **# of Resources** | **Operating Day** | **Total # of Hours Committed** | **Total MWhs** | **Reason for Commitment** |
| NORTH | 1 | 2/18/2024 | 5 | 1,254.6 | SYSTEM CAPACITY |
| NORTH\_CENTRAL | 2 | 2/19/2024 | 4 | 1,830.0 | SYSTEM CAPACITY |
| EAST, SOUTH\_CENTRAL | 2 | 2/25/2024 | 8 | 5,130.0 | CONGESTION, SYSTEM CAPACITY |
| EAST | 1 | 2/29/2024 | 3 | 1,506.0 | SYSTEM CAPACITY |

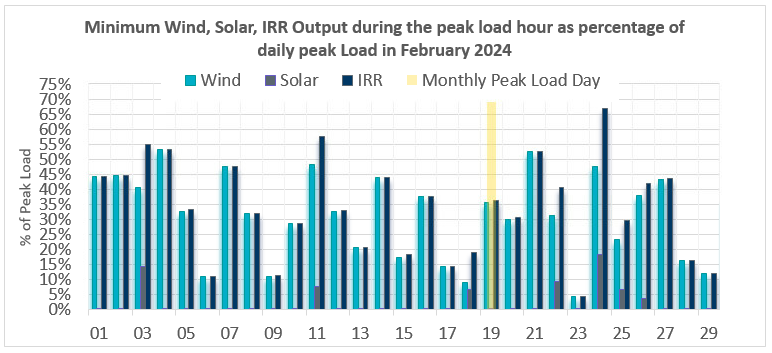
# IRR, Wind, and Solar Generation as a Percent of Load

The graph below shows the maximum, minimum and average aggregate solar, wind and IRR output as a percentage of total ERCOT load when evaluated as 10-minute averaged intervals, over the past 13 months. Current wind and solar generation and penetration records are listed in the footnote below[[1]](#footnote-2). Maximum IRR penetration for the month was 71.87% on 02/25/2024 interval ending 13:10 and minimum IRR penetration for the month was 2.40% on 02/12/2024 interval ending 21:00.

During the hour of peak load for the month, hourly integrated wind generation was 20,065 MW and solar generation was 1,470 MW. The graph below shows the wind and solar penetration percentage during the hour of the peak load in the last 13 months.



Lastly, the graph below shows the minimum wind, solar, and IRR output during the peak load hour as a percentage of the daily peak load for every day in the month.



# Largest Net-Load Ramps

The net-load ramp is defined as the change in net-load (load minus wind and PVGR generation) during the defined time horizon. Such a variation in net-load needs to be accommodated in grid operations to ensure that the reliability of the grid is satisfactorily maintained. The largest net-load ramp during 5-min, 10-min, 15-min, 30-min and 60-min in February 2024 is 1,710 MW, 2,776 MW, 4,172 MW, 8,026 MW, and 15,431 MW, respectively. The comparison with respect to the historical values is given in the table below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Month and Year** | **5 min** | **10 min** | **15 min** | **30 min** | **60 min** |
| Feb 2014 | 971 MW | 1,610 MW | 2,164 MW | 3,516 MW | 5,960 MW |
| Feb 2015 | 1,131 MW | 1,763 MW | 2,469 MW | 4,031 MW | 6,910 MW |
| Feb 2016 | 999 MW | 1,658 MW | 2,144 MW | 3,504 MW | 5,923 MW |
| Feb 2017 | 1,051 MW | 1,744 MW | 2,268 MW | 3,228 MW | 5,346 MW |
| Feb 2018 | 1,494 MW | 1,706 MW | 2,003 MW | 3,419 MW | 5,628 MW |
| Feb 2019 | 1,094 MW | 1,793 MW | 2,388 MW | 3,718 MW | 6,540 MW |
| Feb 2020 | 1,173 MW | 1,777 MW | 2,198 MW | 4,107 MW | 7,430 MW |
| Feb 2021 | 933 MW | 1,661 MW | 2,374 MW | 4,479 MW | 8,079 MW |
| Feb 2022 | 1,086 MW | 2,006 MW | 2,887 MW | 5,257 MW | 9,476 MW |
| Feb 2023 | 1,681 MW | 2,477 MW | 3,298 MW | 6,194 MW | 10,549 MW |
| Feb 2024 | 1,710 MW | 2,776 MW | 4,172 MW | 8,026 MW | 15,431 MW |
| All Months in 2015-2024 | 1,722 MW 1/29/2024  (IE 17:02) | 3,107 MW 1/29/2024  (IE 17:05) | 4,588 MW 1/29/2024  (IE 17:10) | 8,901 MW 1/29/2024  (IE 17:11) | 16,522 MW  1/29/2024  (IE 17:17) |

# Congestion Analysis

## Notable Constraints

Nodal protocol section 3.20 specifies that ERCOT shall identify transmission constraints that are binding in Real-Time three or more Operating Days within a calendar month. As part of this process, ERCOT reports congestion that meets this criterion to ROS. In addition, ERCOT also highlights notable constraints that have an estimated congestion rent exceeding $1,000,000 for a calendar month. These constraints are detailed in the table below, including approved transmission upgrades from TPIT that may provide some congestion relief based on ERCOT’s engineering judgement. Rows highlighted in blue indicate the congestion was affected by one or more outages. For a list of all constraints activated in SCED, please see Appendix A at the end of this report.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Contingency Name** | **Overloaded Element** | **Contingency Name** | **Overloaded Element** | **# of Days Constraint Binding** | **Congestion Rent** | **Transmission Project** |
|
| DMGSBTR5 | 6036\_\_A | MGSES TO CCRSW 345 AND BTRCK TO MGSES 345 DBLCKT | Tonkawa Switch - Morgan Creek Ses 345kV | 14 | $12,812,734.65 |  |
| BASE CASE | WESTEX | Basecase | WESTEX GTC | 20 | $8,323,195.56 |  |
| BASE CASE | PNHNDL | Basecase | PNHNDL GTC | 22 | $7,677,211.20 |  |
| SBAKCED5 | HARGRO\_TWINBU1\_1 | BAKERSFIELD SWITCHYARD to CEDAR CANYON LIN 1 | Hargrove - Twin Buttes 138kV | 13 | $7,432,117.05 |  |
| DBIGSCH5 | BAKRFLD\_CEDCAN\_1 | Big Hill - Schneeman Draw & Big Hill - Schneeman Draw 2 | Cedar Cayon - Bakersfield 345kV | 16 | $3,598,791.79 |  |
| XFOW58 | BRUNI\_69\_1 | FOWLERTON TRX FOWLRTON\_AUTO1 345/138 | Bruni Sub 138kV | 9 | $3,596,895.99 |  |
| MNEDPOM5 | FREER\_LOBO1\_1 | Double Manual NORTH EDINBURG TO POMELO LIN 1&2 345 kV | Lobo - Freer 69kV | 13 | $3,364,122.29 |  |
| SDBMFID5 | LPLWA\_LPLDB\_1 | DOUBLE MOUNTAIN SWITCH to DOUBLE MOUNTAIN SWITCH LIN 1 | Wadsworth Susbsation - Dunbar Substation 115kV | 6 | $3,146,060.99 |  |
| DCONLNG5 | 6046\_\_A | CONSW-MGSES\_and\_CONSW-LNGSW\_345kV\_DBLCKT | Falcon Seaboard - Morgan Creek Ses 345kV | 15 | $2,964,353.09 |  |
| BASE CASE | NE\_LOB | Basecase | NE\_LOB GTC | 21 | $2,846,090.54 | The Lower Rio Grande Valley (LRGV) System Enhancement Project (21RPG017) will improve the NorthEd\_LoboGTC to support up to 80% of total wind and solar generation capacity in the LRGV area. |
| DTRIASH8 | CKT\_940\_1 | TRIDGE-ASHWDSnHWRDLN 138 KV | Hamilton Aen - Williamson 138kV | 1 | $2,637,317.75 |  |
| SN\_SLON5 | N\_SHARPE\_XF1 | LON HILL to NELSON SHARPE LIN 1 | Nelson Sharpe 345kV | 17 | $2,110,311.65 |  |
| DCONLNG5 | RKYROAD\_STILES\_1 | CONSW-MGSES\_and\_CONSW-LNGSW\_345kV\_DBLCKT | Rocky Road - Stiles 138kV | 4 | $1,952,254.43 |  |
| DLWSRNK5 | 587\_\_A | LWSSW TO RNKSW AND LWSSW TO KRWSW 345 DBLCKT | Argyle - Highlands Tnp 138kV | 9 | $1,946,646.29 |  |
| SBAKCED5 | 6056\_\_A | BAKERSFIELD SWITCHYARD to CEDAR CANYON LIN 1 | Longshore Switch - Consavvy Switch 345kV | 7 | $1,905,831.11 |  |
| MHARNED5 | BURNS\_RIOHONDO\_1 | Manual dbl ckt for NEDIN-BONILLA 345kV & RIOH-PRIM138kV | Burns Sub - Rio Hondo 138kV | 9 | $1,462,917.56 | STEC\_71930\_RioHondo\_Burns\_Upgrade (71930), STEC\_71926\_Burns\_Heidelberg\_Upgrade (71926), STEC\_71928\_Heidelberg\_AEPWeslaco\_Upgrade (71928) |
| BASE CASE | WHARTN | Basecase | WHARTN GTC | 17 | $1,427,181.96 |  |
| SREVDIL8 | CATARI\_PILONC1\_1 | REVEILLE to COTULLA LIN 1 | Catarina - Piloncillo 138kV | 5 | $984,350.17 |  |
| MNOESGT5 | HARGRO\_TWINBU1\_1 | Manual NOELKE - SINGLE TREE & NOELKE - SINGLE TREE 2 | Hargrove - Twin Buttes 138kV | 3 | $966,660.28 |  |
| SCOLPAW5 | COLETO\_VICTOR1\_1 | COLETO CREEK to COLETO CREEK LIN 1 | Coleto Creek - Victoria 138kV | 10 | $890,767.55 |  |
| BASE CASE | VALEXP | Basecase | VALEXP GTC | 20 | $739,302.36 | The Lower Rio Grande Valley (LRGV) System Enhancement Project (21RPG017) will improve but not eliminate the need for this GTC. |
| MNEDPOM5 | DEL\_MA\_LAREDO1\_1 | Double Manual NORTH EDINBURG TO POMELO LIN 1&2 345 kV | Del Mar - Laredo Plant 138kV | 11 | $718,958.35 |  |
| SBISMI5 | BI\_WAP50\_A | SMITHERS to BELLAIRE LIN A | Bellaire - Wa Parish 345kV | 3 | $717,459.53 |  |
| BASE CASE | ZAPSTR | Basecase | ZAPSTR GTC | 24 | $703,792.33 |  |
| DMTSCOS5 | 6437\_\_F | DMTSW TO SCOSW 345 DBLCKT | Knapp - Scurry Chevron 138kV | 4 | $615,893.40 |  |
| SBRAPIN8 | HAMILT\_MAVERI1\_1 | BRACKETTVILLE to BRACKETTVILLE LIN 1 | Hamilton Road - Maverick 138kV | 19 | $577,008.48 | AEP\_TCC\_Ganso - Hamilton Road 138 kV Line Rebuild (22RPG044) |
| XBAL89 | CONCHO\_VRBS1\_1 | BALLINGER TRX FMR1 138/69 | San Angelo Concho - Veribest 69kV | 4 | $484,950.08 |  |
| MSGTSCH5 | HARGRO\_TWINBU1\_1 | SINGLE TREE - SCHNEEMAN DRAW & SINGLE TREE- SCHNEEMAN DRAW 2 | Hargrove - Twin Buttes 138kV | 3 | $463,457.85 |  |
| DBIGKEN5 | HAMILT\_MAXWEL1\_1 | Bighil-Kendal 345kV | Hamilton Road - Maxwell 138kV | 16 | $432,273.60 | AEP\_TCC\_HamiltonRoad-Maxwell (20RPG022) |
| SFORYEL8 | HEXT\_MASONS1\_1 | FORT MASON to FORT MASON LIN 1 | Mason Switching Station - Hext Lcra 69kV | 6 | $419,346.88 |  |
| SGRICOL5 | CALLIC\_LON\_HI1\_1 | COLETO CREEK to COLETO CREEK LIN 1 | Lon Hill - Callicoatte 138kV | 3 | $414,238.58 |  |
| DELMSAN5 | PAWNEE\_SPRUCE\_1 | Elmcreek-Sanmigl 345kV | Pawnee Switching Station - Calaveras 345kV | 3 | $334,057.13 |  |
| MHARNED5 | HAINE\_\_LA\_PAL1\_1 | Manual dbl ckt for NEDIN-BONILLA 345kV & RIOH-PRIM138kV | Haine Drive - La Palma 138kV | 4 | $304,806.90 |  |
| DSALKLN5 | 630\_\_B | SALSW TO KLNSW 345 DBLCKT | Harker Heights South - Killeen Switch 138kV | 4 | $279,562.25 |  |
| SEL\_ARR8 | BLESSI\_PAVLOV1\_1 | EL CAMPO to ARROZ LIN 1 | Blessing - Pavlov 138kV | 7 | $259,927.98 |  |
| DMGSBIT5 | 6036\_\_A | CCRSW TO SWESW 345 AND BTRCK TO MGSES 345 DBLCKT | Tonkawa Switch - Morgan Creek Ses 345kV | 6 | $254,608.74 |  |
| DNOECED5 | HARGRO\_TWINBU1\_1 | NOELKE - CEDAR CANYON & NOELKE- CEDAR CANYON 2 | Hargrove - Twin Buttes 138kV | 4 | $199,659.53 |  |
| BASE CASE | NELRIO | Basecase | NELRIO GTC | 8 | $197,259.20 | The Lower Rio Grande Valley (LRGV) System Enhancement Project (21RPG017) will improve the NorthEd\_LoboGTC to support up to 80% of total wind and solar generation capacity in the LRGV area. |
| DCAGCI58 | 255T279\_1 | Cagnon-Kendal 345 &Cico-Mengcr 138 | Medina Lake - Pipe Creek 138kV | 4 | $182,438.33 |  |
| SBRAHAM8 | HAMILT\_MAVERI1\_1 | BRACKETTVILLE to HAMILTON ROAD LIN 1 | Hamilton Road - Maverick 138kV | 5 | $182,235.88 | AEP\_TCC\_Ganso - Hamilton Road 138 kV Line Rebuild (22RPG044) |
| SBTPBNT8 | MYRA\_VAL\_1 | BENNETT ROAD SWITCH to WISE COUNTY LIN \_B | Myra - Valley View Bepc 138kV | 5 | $181,703.85 | BEPC\_TPIT4645\_MYRA\_SPRING (4645) |
| DWLFMOS5 | 6520\_\_E | WLFSW-MOSSW 345&WLFSW-ODEHV 345\_\_\_\_TRPLCKT-1of3 | Odessa Ehv Switch - Yarbrough Sub 138kV | 3 | $141,568.45 |  |
| SCMNCPS5 | 651\_\_B | COMANCHE SWITCH (Oncor) to COMANCHE PEAK SES LIN \_A | Comanche Tap - Comanche Switch (Oncor) 138kV | 4 | $134,536.77 |  |
| DCAGCO58 | 656T656\_1 | Cagnon-Kendal 345 & Cico-Comfor 138 | Bergheim - Kendall 345kV | 5 | $127,270.60 |  |
| SFORYEL8 | HEXT\_YELWJC1\_1 | FORT MASON to FORT MASON LIN 1 | Yellow Jacket - Hext Lcra 69kV | 9 | $126,369.74 |  |
| DBIGKEN5 | CARVER\_TINSLE1\_1 | Bighil-Kendal 345kV | Carver - Tinsley Tap 138kV | 4 | $125,571.08 | AEP\_TCC\_RebuildCarver-Maxwell (22RPG042, 52070) |
| SCARFRI8 | ATSO\_SONR1\_1 | Carver to Carver LIN 1 | Atlantic Sonora - Sonora 69kV | 6 | $115,278.29 |  |
| SPALFRO8 | HALL\_A\_S\_MCAL1\_1 | FRONTERA to KEY SWITCH LIN 1 | Hall Acres - South Mcallen 138kV | 4 | $92,423.52 |  |
| STANPAW5 | CALLIC\_LON\_HI1\_1 | TANGO to PAWNEE SWITCHING STATION LIN 1 | Lon Hill - Callicoatte 138kV | 3 | $86,747.00 |  |
| SPLUMUL8 | MOULSO\_AT3 | MULDOON to MULDOON LIN 1 | Moulton South 138kV | 3 | $86,559.66 |  |
| BASE CASE | RIOHND\_ERIOHND\_1 | Basecase | Rio Hondo - East Rio Hondo Sub 138kV | 8 | $85,024.59 |  |
| SCRMSAR8 | CONCHO\_VRBS1\_1 | SAN ANGELO RED CREEK to Weiss LIN 1 | San Angelo Concho - Veribest 69kV | 5 | $74,012.76 | AEP\_TNC\_Ballinger-ConchoRebuild (20RPG004, 55421) |
| MRESMCM8 | WHITE\_PT\_69A1 | Manual for I\_DUPS - RESNIK & MCCAMPBE 2 138KV | Whitepoint 138kV | 5 | $71,462.74 |  |
| DDILCOT8 | DILLEYSW\_69A1 | Dilleysw-Sanmgsw&Cotulas 138kV | Dilley Switch Aep 138kV | 8 | $60,560.58 |  |
| BASE CASE | HMLTN | Basecase | HMLTN GTC | 16 | $57,986.34 |  |
| SLANARR8 | BLESSI\_PAVLOV1\_1 | LANE CITY PUMP to ARROZ LIN 1 | Blessing - Pavlov 138kV | 3 | $43,340.38 |  |
| DBIGKEN5 | TREADW\_YELWJC1\_1 | Bighil-Kendal 345kV | Yellow Jacket - Treadwell 138kV | 4 | $40,679.26 |  |
| SFORYEL8 | MASNPH\_MASN1\_1 | FORT MASON to FORT MASON LIN 1 | Mason Aep - Mason Phillips Tap 69kV | 3 | $37,066.70 |  |
| SSPUASP8 | GIRA\_T\_SPUR1\_1 | ASPERMONT AEP to ASPERMONT AEP LIN 1 | Girard Tap - Spur 69kV | 4 | $34,979.35 |  |
| SMV\_PAR8 | RIOHND\_ERIOHND\_1 | CENTRAL AVENUE SUB to CENTRAL AVENUE SUB LIN 1 | Rio Hondo - East Rio Hondo Sub 138kV | 5 | $23,386.26 |  |
| SN\_SAJO5 | LASPUL\_RAYMND1\_1 | AJO to AJO LIN 1 | Las Pulgas - Raymondville 2 138kV | 9 | $15,840.43 |  |
| SREVDIL8 | ASHERT\_CATARI1\_1 | REVEILLE to COTULLA LIN 1 | Asherton - Catarina 138kV | 3 | $15,697.02 |  |
| SMV\_RI28 | SCARBI\_STILLM1\_1 | EAST RIO HONDO SUB to EAST RIO HONDO SUB LIN 1 | South Carbide - Stillman 138kV | 3 | $13,797.40 |  |
| SMADSAP8 | MADDUX\_SAPOWE2\_1 | MADDUX to SAN ANGELO POWER STATION LIN 1 | Maddux - San Angelo Power Station 138kV | 7 | $12,438.74 |  |
| SKLELOY8 | LOYOLA\_69\_1 | KLEBERG AEP to KLEBERG AEP LIN 1 | Loyola Sub 138kV | 3 | $8,684.51 |  |
| XFTS89 | ALPINE\_BRONCO1\_1 | FORT STOCKTON PLANT TRX 69T1 138/69 | Alpine - Bronco 69kV | 4 | $4,778.68 |  |
| SODLBRA8 | MAXWEL\_WHITIN1\_1 | BRACKETTVILLE to BRACKETTVILLE LIN 1 | Maxwell - Whiting 138kV | 3 | $3,667.82 |  |
| SBROALP9 | COCS\_FTST1\_1 | Bronco to ALPINE LIN 1 | Conoco Comp Station - Fort Stockton Plant 69kV | 3 | $546.94 |  |

## Generic Transmission Constraint Congestion

There were 30 days congestion on Valley Export GTC, 25 days on West Texas Export GTC, 25 days on Panhandle GTC, 25 days on Zapata Starr GTC, 24 days on North Edinburg to Lobo GTC, 17 days on Wharton County GTC, 18 days on Hamilton GTC, 14 days on Nelson Sharpe to Rio Hondo GTC, 3 days on North to Houston GTC, and 2 days on East Texas GTC. There was no activity on the remaining GTCs during the month.

Note: This is how many times a constraint has been activated to avoid exceeding a GTC limit, it does not imply an exceedance of the GTC occurred or that the GTC was binding.

## Manual Overrides

There were no overrides for the month of February.

## Congestion Costs for Calendar Year 2024

The following table represents the top twenty active constraints for the calendar year based on the estimated congestion rent attributed to the congestion. ERCOT updates this list on a monthly basis.

|  |  |  |  |
| --- | --- | --- | --- |
| **Contingency** | **Overloaded Element** | **# of 5-min SCED** | **Estimated Congestion Rent (2023)** |
| Basecase | WESTEX GTC | 5111 | $21,849,605.72 |
| BAKERSFIELD SWITCHYARD to CEDAR CANYON LIN 1 | Hargrove - Twin Buttes 138kV | 3391 | $20,673,368.94 |
| MGSES TO CCRSW 345 AND BTRCK TO MGSES 345 DBLCKT | Tonkawa Switch - Morgan Creek Ses 345kV | 3074 | $15,930,325.02 |
| HCKSW TO ALLNC 345 AND HCKSW TO RNKSW 345 DBLCKT | Eagle Mountain Ses 345kV | 439 | $11,753,026.97 |
| EVERMAN SWITCH TRX EVRSW\_4\_1 345/138 | Everman Switch 345kV | 386 | $11,447,643.03 |
| Basecase | PNHNDL GTC | 6267 | $9,601,766.51 |
| KENDALL to COMFORT LIN 1 | Kerrville Stadium - Kendall 138kV | 402 | $8,721,663.50 |
| COMAL to HENNE LIN 1 | Mccarty Lane - Zorn 138kV | 211 | $8,348,025.83 |
| KENEDSW - TULETA (138) & PETTUS - NORMANNA (69) | Coleto Creek - Rosata Tap 138kV | 513 | $6,071,941.17 |
| MVEC (RANGERVILLE) to LA PALMA LIN 1 | Stewart Road - Vertrees 138kV | 260 | $5,900,076.10 |
| CONSW-MGSES\_and\_CONSW-LNGSW\_345kV\_DBLCKT | Polecat Creek Switch - Dewey Lake Tap 138kV | 1854 | $5,822,181.97 |
| manual George West Switching Station TRX 69\_1 138/69 (outage on bkr 14164) | Orange Grove Switching Station 138kV | 392 | $5,671,797.70 |
| CIBOLO to MARION LIN 1 | Cibolo - Marion 138kV | 411 | $5,649,150.65 |
| FOWLRTON TO SAN MIGUEL DOUBLE CIRCUIT CONTINGENCY | Catarina - Piloncillo 138kV | 1077 | $5,407,698.75 |
| CONSW-MGSES\_and\_CONSW-LNGSW\_345kV\_DBLCKT | Falcon Seaboard - Morgan Creek Ses 345kV | 2267 | $5,306,036.88 |
| Basecase | NE\_LOB GTC | 5699 | $4,173,341.48 |
| Big Hill - Schneeman Draw & Big Hill - Schneeman Draw 2 | Cedar Cayon - Bakersfield 345kV | 2787 | $4,095,364.07 |
| Double Manual NORTH EDINBURG TO POMELO LIN 1&2 345 kV | Lobo - Freer 69kV | 2843 | $4,075,335.70 |
| FOWLERTON TRX FOWLRTON\_AUTO1 345/138 | Bruni Sub 138kV | 1156 | $3,626,242.86 |
| CEDAR CANYON to HIGH LONESOME LIN 1 | Hargrove - Twin Buttes 138kV | 1856 | $3,604,592.67 |

# System Events

## ERCOT Peak Load

The unofficial ERCOT peak load for the month was 55,855 MW and occurred on 02/19/2024, during hour ending 08:00.

## Load Shed Events

None.

## Stability Events

None.

## Notable PMU Events

ERCOT analyzes PMU data for any significant system disturbances that do not fall into the Frequency Events category reported in section 2.1. The results are summarized in this section once the analysis has been completed.

There were no PMU events outside of those reported in section 2.1.

## DC Tie Curtailment

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Date** | **DC Tie** | **Curtailing Period** | **# of Tags Curtailed** | **Initiating Event** | **Curtailment Reason[[2]](#footnote-3),[[3]](#footnote-4)** |
| N/A | N/A | N/A | N/A | N/A | N/A |

## TRE/DOE Reportable Events

* CenterPoint submitted a DOE-417 on 02/20/2024 for a physical threat to its facility.

## New/Updated Constraint Management Plans

None.

## New/Modified/Removed RAS

None.

## New Procedures/Forms/Operating Bulletins

|  |  |  |
| --- | --- | --- |
| **Date** | **Subject** | **Bulletin No.** |
| 02/01/2024 | Real Time Desk V1 Rev 93 | 1126 |
| 02/01/2024 | Transmission and Security Desk V1 Rev 106 | 1127 |
| 02/29/2024 | Real Time Desk V1 Rev 94 | 1128 |
| 02/29/2024 | Resource Desk V1 Rev 80 | 1129 |
| 02/29/2024 | Scripts V1 Rev 55 | 1130 |
| 02/29/2024 | Shift Supervisor Desk V1 Rev 94 | 1131 |
| 02/29/2024 | Transmission and Security Desk V1 Rev 107 | 1132 |

# Emergency Conditions

## OCNs

|  |  |
| --- | --- |
| **Date and Time** | **Message** |
| N/A | N/A |

## Advisories

|  |  |
| --- | --- |
| **Date and Time** | **Message** |
| Feb 16, 2024 13:19 CPT | ERCOT has postponed the deadline for the posting of the DAM solution for Operating Day 02/17/2024 due to long solution run time. |

## Watches

|  |  |
| --- | --- |
| **Date and Time** | **Message** |
| N/A | N/A |

## Emergency Notices

|  |  |
| --- | --- |
| **Date and Time** | **Message** |
| N/A | N/A |

# Application Performance

## TSAT/VSAT Performance Issues

None

## Communication Issues

None.

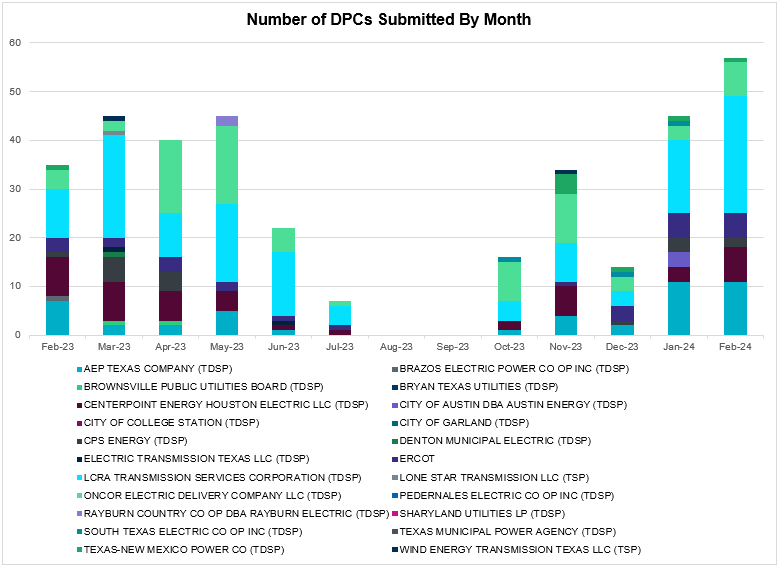
## Market System Issues

None.

# Model Updates

The Downstream Production Change (DPC) process allows ERCOT to make changes in the one-line Network Operations Model without loading a completely new model. The purpose of this process is to allow for reliable grid operations as system conditions change between designated Network Operations Model database loads. The DPC process is limited in scope to just those items listed below, with equipment ratings updates being the most common. ERCOT has seen a rise in the use of the DPC process to make on-line updates to the Network Operations Model in recent years, instead of through the standard Network Operations Model Change Request process.

* Static Line ratings (Interim Update)
* Dynamic Line ratings (non-Interim Update)
* Autotransformer ratings (non-Interim Update)
* Breaker and Switch Normal status (Interim Update)
* Contingency Definitions (Interim Update)
* RAP and RAS changes or additions (Interim Update)
* Net Dependable and Reactive Capability (NDCRC) values (Interim Update)
* Impedance Updates (non-Interim)



|  |  |
| --- | --- |
| **Transmission Operator** | **Number of DPCs** |
| AEP TEXAS COMPANY (TDSP) | 11 |
| BRAZOS ELECTRIC POWER CO OP INC (TDSP) | 0 |
| BROWNSVILLE PUBLIC UTILITIES BOARD (TDSP) | 0 |
| BRYAN TEXAS UTILITIES (TDSP) | 0 |
| CENTERPOINT ENERGY HOUSTON ELECTRIC LLC (TDSP) | 7 |
| CITY OF AUSTIN DBA AUSTIN ENERGY (TDSP) | 0 |
| CITY OF COLLEGE STATION (TDSP) | 0 |
| CITY OF GARLAND (TDSP) | 0 |
| CPS ENERGY (TDSP) | 2 |
| DENTON MUNICIPAL ELECTRIC (TDSP) | 0 |
| ELECTRIC TRANSMISSION TEXAS LLC (TDSP) | 0 |
| ERCOT | 5 |
| LCRA TRANSMISSION SERVICES CORPORATION (TDSP) | 24 |
| LONE STAR TRANSMISSION LLC (TSP) | 0 |
| ONCOR ELECTRIC DELIVERY COMPANY LLC (TDSP) | 7 |
| PEDERNALES ELECTRIC CO OP INC (TDSP) | 0 |
| RAYBURN COUNTRY CO OP DBA RAYBURN ELECTRIC (TDSP) | 0 |
| SHARYLAND UTILITIES LP (TDSP) | 0 |
| SOUTH TEXAS ELECTRIC CO OP INC (TDSP) | 0 |
| TEXAS MUNICIPAL POWER AGENCY (TDSP) | 0 |
| TEXAS-NEW MEXICO POWER CO (TDSP) | 1 |
| WIND ENERGY TRANSMISSION TEXAS LLC (TSP) | 0 |

# 

# Appendix A: Real-Time Constraints

The following is a complete list of constraints activated in SCED. Full contingency descriptions can be found in the Standard Contingencies List located on the MIS secure site at Grid 🡪 Generation 🡪 Reliability Unit Commitment.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Year | Month of the Year | Contingency Name | Overloaded Element | From Station | To Station | Count of Days |
| 2024 | 2 | BASE CASE | WESTEX | n/a | n/a | 25 |
| 2024 | 2 | BASE CASE | NE\_LOB | n/a | n/a | 24 |
| 2024 | 2 | BASE CASE | ZAPSTR | n/a | n/a | 24 |
| 2024 | 2 | BASE CASE | PNHNDL | n/a | n/a | 24 |
| 2024 | 2 | BASE CASE | VALEXP | n/a | n/a | 24 |
| 2024 | 2 | DCONLNG5 | 6046\_\_A | FLCNS | MGSES | 22 |
| 2024 | 2 | DCONLNG5 | 6046\_\_A | MGSES | FLCNS | 22 |
| 2024 | 2 | SN\_SLON5 | N\_SHARPE\_XF1 | N\_SHARPE | N\_SHARPE | 20 |
| 2024 | 2 | SBRAPIN8 | HAMILT\_MAVERI1\_1 | MAVERICK | HAMILTON | 20 |
| 2024 | 2 | SBRAPIN8 | HAMILT\_MAVERI1\_1 | HAMILTON | MAVERICK | 20 |
| 2024 | 2 | DBIGSCH5 | BAKRFLD\_CEDCAN\_1 | CEDACA | BAKESW | 19 |
| 2024 | 2 | DMGSBTR5 | 6036\_\_A | TKWSW | MGSES | 18 |
| 2024 | 2 | DBIGKEN5 | HAMILT\_MAXWEL1\_1 | MAXWELL | HAMILTON | 17 |
| 2024 | 2 | BASE CASE | WHARTN | n/a | n/a | 17 |
| 2024 | 2 | BASE CASE | HMLTN | n/a | n/a | 17 |
| 2024 | 2 | SBAKCED5 | HARGRO\_TWINBU1\_1 | TWINBU | HARGROVE | 15 |
| 2024 | 2 | BASE CASE | NELRIO | n/a | n/a | 14 |
| 2024 | 2 | MNEDPOM5 | FREER\_LOBO1\_1 | LOBO | FREER | 14 |
| 2024 | 2 | DMGSBIT5 | 6036\_\_A | TKWSW | MGSES | 13 |
| 2024 | 2 | XFTS89 | ALPINE\_BRONCO1\_1 | BRONCO | ALPINE | 13 |
| 2024 | 2 | XFTS89 | ALPINE\_BRONCO1\_1 | ALPINE | BRONCO | 13 |
| 2024 | 2 | SCOLPAW5 | COLETO\_VICTOR1\_1 | COLETO | VICTORIA | 12 |
| 2024 | 2 | SBAKCED5 | 6056\_\_A | LNGSW | CONSW | 12 |
| 2024 | 2 | XFOW58 | BRUNI\_69\_1 | BRUNI | BRUNI | 11 |
| 2024 | 2 | SFORYEL8 | HEXT\_YELWJC1\_1 | YELWJCKT | HEXT | 11 |
| 2024 | 2 | SN\_SAJO5 | LASPUL\_RAYMND1\_1 | LASPULGA | RAYMND2 | 11 |
| 2024 | 2 | MHARNED5 | BURNS\_RIOHONDO\_1 | RIOHONDO | MV\_BURNS | 11 |
| 2024 | 2 | MNEDPOM5 | DEL\_MA\_LAREDO1\_1 | LAREDO | DEL\_MAR | 11 |
| 2024 | 2 | BASE CASE | RIOHND\_ERIOHND\_1 | MV\_RIOHO | RIOHONDO | 9 |
| 2024 | 2 | SFORYEL8 | HEXT\_MASONS1\_1 | HEXT | MASONSW | 9 |
| 2024 | 2 | SCARFRI8 | ATSO\_SONR1\_1 | SONR | ATSO | 9 |
| 2024 | 2 | SFORYEL8 | HEXT\_MASONS1\_1 | MASONSW | HEXT | 9 |
| 2024 | 2 | BASE CASE | RIOHND\_ERIOHND\_1 | RIOHONDO | MV\_RIOHO | 9 |
| 2024 | 2 | DDILCOT8 | DILLEYSW\_69A1 | DILLEYSW | DILLEYSW | 9 |
| 2024 | 2 | SKLELOY8 | LOYOLA\_69\_1 | LOYOLA | LOYOLA | 9 |
| 2024 | 2 | DBIGKEN5 | TREADW\_YELWJC1\_1 | TREADWEL | YELWJCKT | 9 |
| 2024 | 2 | DLWSRNK5 | 587\_\_A | ARGYL | LWSVH | 9 |
| 2024 | 2 | SEL\_ARR8 | BLESSI\_PAVLOV1\_1 | BLESSING | PAVLOV | 9 |
| 2024 | 2 | SMADSAP8 | MADDUX\_SAPOWE2\_1 | MADDUX | SAPOWER | 8 |
| 2024 | 2 | SBRAHAM8 | HAMILT\_MAVERI1\_1 | HAMILTON | MAVERICK | 8 |
| 2024 | 2 | SMV\_PAR8 | RIOHND\_ERIOHND\_1 | MV\_RIOHO | RIOHONDO | 8 |
| 2024 | 2 | DSALKLN5 | 630\_\_B | KLNSW | HHSTH | 8 |
| 2024 | 2 | SLANARR8 | BLESSI\_PAVLOV1\_1 | BLESSING | PAVLOV | 8 |
| 2024 | 2 | SBTPBNT8 | MYRA\_VAL\_1 | MYRA | VALYVIEW | 8 |
| 2024 | 2 | DSWECCR5 | 6036\_\_A | TKWSW | MGSES | 7 |
| 2024 | 2 | MWHPLON5 | COLETO\_VICTOR1\_1 | COLETO | VICTORIA | 7 |
| 2024 | 2 | SCRMSAR8 | CONCHO\_VRBS1\_1 | CONCHO | VRBS | 7 |
| 2024 | 2 | DSTEXP12 | COLETO\_VICTOR1\_1 | COLETO | VICTORIA | 7 |
| 2024 | 2 | DCONLNG5 | RKYROAD\_STILES\_1 | STILES | RCKYROAD | 7 |
| 2024 | 2 | DCONLNG5 | RKYROAD\_STILES\_1 | RCKYROAD | STILES | 7 |
| 2024 | 2 | SDBMFID5 | LPLWA\_LPLDB\_1 | LPLDB | LPLWA | 7 |
| 2024 | 2 | SREVDIL8 | CATARI\_PILONC1\_1 | CATARINA | PILONCIL | 6 |
| 2024 | 2 | DNOECED5 | HARGRO\_TWINBU1\_1 | TWINBU | HARGROVE | 6 |
| 2024 | 2 | MSGTSCH5 | HARGRO\_TWINBU1\_1 | TWINBU | HARGROVE | 6 |
| 2024 | 2 | MNOESGT5 | HARGRO\_TWINBU1\_1 | TWINBU | HARGROVE | 6 |
| 2024 | 2 | SCMNCPS5 | 651\_\_B | CMNSW | CMNTP | 6 |
| 2024 | 2 | SREVDIL8 | CATARI\_PILONC1\_1 | PILONCIL | CATARINA | 6 |
| 2024 | 2 | MHARNED5 | HAINE\_\_LA\_PAL1\_1 | LA\_PALMA | HAINE\_DR | 6 |
| 2024 | 2 | DCAGCO58 | 656T656\_1 | KENDAL | BERGHE | 6 |
| 2024 | 2 | DMTSCOS5 | 6437\_\_F | SCRCV | KNAPP | 5 |
| 2024 | 2 | SBONNED5 | BURNS\_RIOHONDO\_1 | RIOHONDO | MV\_BURNS | 5 |
| 2024 | 2 | STANPAW5 | CALLIC\_LON\_HI1\_1 | LON\_HILL | CALLICOA | 5 |
| 2024 | 2 | MPOMPRO5 | FREER\_LOBO1\_1 | LOBO | FREER | 5 |
| 2024 | 2 | SSPUASP8 | GIRA\_T\_SPUR1\_1 | SPUR | GIRA\_TAP | 5 |
| 2024 | 2 | SFORYEL8 | MASNPH\_MASN1\_1 | MASN | MASNPHT | 5 |
| 2024 | 2 | SODLBRA8 | MAXWEL\_WHITIN1\_1 | MAXWELL | WHITING | 5 |
| 2024 | 2 | XBAL89 | CONCHO\_VRBS1\_1 | CONCHO | VRBS | 5 |
| 2024 | 2 | MRESMCM8 | WHITE\_PT\_69A1 | WHITE\_PT | WHITE\_PT | 5 |
| 2024 | 2 | SREVDIL8 | ASHERT\_CATARI1\_1 | ASHERTON | CATARINA | 5 |
| 2024 | 2 | MFOWLOB5 | BRUNI\_69\_1 | BRUNI | BRUNI | 5 |
| 2024 | 2 | SSPUASP8 | GIRA\_T\_SPUR1\_1 | GIRA\_TAP | SPUR | 5 |
| 2024 | 2 | SREVDIL8 | ASHERT\_CATARI1\_1 | CATARINA | ASHERTON | 5 |
| 2024 | 2 | XFOW58 | FREER\_LOBO1\_1 | LOBO | FREER | 4 |
| 2024 | 2 | SPALFRO8 | HALL\_A\_S\_MCAL1\_1 | HALL\_ACR | S\_MCALLN | 4 |
| 2024 | 2 | DMCOPHA8 | NEDNBRG\_WEDNBG\_1 | NEDIN | MV\_WEDN4 | 4 |
| 2024 | 2 | SMV\_RI28 | SCARBI\_STILLM1\_1 | SCARBIDE | STILLMAN | 4 |
| 2024 | 2 | SCONMGS5 | 6056\_\_A | LNGSW | CONSW | 4 |
| 2024 | 2 | SVICCO28 | CALLIC\_LON\_HI1\_1 | LON\_HILL | CALLICOA | 4 |
| 2024 | 2 | SCEDHI\_5 | HARGRO\_TWINBU1\_1 | TWINBU | HARGROVE | 4 |
| 2024 | 2 | SDI2DIL9 | DILLEYSW\_69A1 | DILLEYSW | DILLEYSW | 4 |
| 2024 | 2 | DCAGCI58 | 255T279\_1 | PIPECR | MEDILA | 4 |
| 2024 | 2 | DWLFMOS5 | 6520\_\_E | ODEHV | YARBR | 4 |
| 2024 | 2 | MNEDPOM5 | TILDEN\_GEOWEST\_1 | TILDEN | GEOWEST | 4 |
| 2024 | 2 | DCAGCO58 | 415T415\_1 | MILLER | HENLY | 4 |
| 2024 | 2 | SBISMI5 | BI\_WAP50\_A | WAP | BI | 4 |
| 2024 | 2 | DBIGKEN5 | CARVER\_TINSLE1\_1 | CARVER | TINSLEY | 4 |
| 2024 | 2 | DKENCA58 | 656T656\_1 | KENDAL | BERGHE | 3 |
| 2024 | 2 | SAZTCLO8 | NEDNBRG\_WEDNBG\_1 | NEDIN | MV\_WEDN4 | 3 |
| 2024 | 2 | SPLUMUL8 | MOULSO\_AT3 | MOULSO | MOULSO | 3 |
| 2024 | 2 | DBERWE58 | 415T415\_1 | MILLER | HENLY | 3 |
| 2024 | 2 | SBENS\_M8 | BENTS\_FRTER\_1C\_1 | S\_MISSIN | RAILROAD | 3 |
| 2024 | 2 | SBRAPIN8 | GANSO\_MAVERI1\_1 | GANSO | MAVERICK | 3 |
| 2024 | 2 | DCONLNG5 | BAKRFLD\_CEDCAN\_1 | CEDACA | BAKESW | 3 |
| 2024 | 2 | SBRAPIN8 | GANSO\_MAVERI1\_1 | MAVERICK | GANSO | 3 |
| 2024 | 2 | SBWDDBM5 | LPLMK\_LPLNE\_1 | LPLMK | LPLNE | 3 |
| 2024 | 2 | SCEDHI\_5 | 6056\_\_A | LNGSW | CONSW | 3 |
| 2024 | 2 | MNEDPOM5 | DEL\_MA\_UNIVER1\_1 | DEL\_MAR | UNIVERSI | 3 |
| 2024 | 2 | SRAIMAD8 | VALEXP | n/a | n/a | 3 |
| 2024 | 2 | BASE CASE | N\_TO\_H | n/a | n/a | 3 |
| 2024 | 2 | SGRICOL5 | CALLIC\_LON\_HI1\_1 | LON\_HILL | CALLICOA | 3 |
| 2024 | 2 | DYELHE89 | KATEMC\_MASN1\_1 | MASN | KATEMCY | 3 |
| 2024 | 2 | SBROALP9 | COCS\_FTST1\_1 | FTST | COCS | 3 |
| 2024 | 2 | DBIGSCH5 | PALOUS\_WOLFCA1\_1 | PALOUSE | WOLFCAMP | 3 |
| 2024 | 2 | DELMSAN5 | PAWNEE\_SPRUCE\_1 | PAWNEE | CALAVERS | 3 |
| 2024 | 2 | DMTSCOS5 | 6240\_\_C | SACRC | DPCRK | 3 |
| 2024 | 2 | SMV\_RI28 | CP\_MVCNT\_1 | MV\_CNTRA | COFFPORT | 3 |
| 2024 | 2 | DSCOTKW5 | 6215\_\_A | BCKSW | CGRSW | 2 |
| 2024 | 2 | MWHPLON5 | BEEVIL\_NORMAN1\_1 | BEEVILLE | NORMANNA | 2 |
| 2024 | 2 | DWPWFCK5 | BLESSI\_PAVLOV1\_1 | BLESSING | PAVLOV | 2 |
| 2024 | 2 | BASE CASE | BRIGHTSD\_T1 | BRIGHTSD | BRIGHTSD | 2 |
| 2024 | 2 | SNWEWES8 | BURNS\_RIOHONDO\_1 | RIOHONDO | MV\_BURNS | 2 |
| 2024 | 2 | DNEDPOM5 | FREER\_LOBO1\_1 | LOBO | FREER | 2 |
| 2024 | 2 | SLANARR8 | LAN\_CT\_PAVLOV1\_1 | PAVLOV | LAN\_CTY | 2 |
| 2024 | 2 | SOAKNIC8 | NICOLE\_TENNYS1\_1 | TENNYSON | NICOLE | 2 |
| 2024 | 2 | DNEDWED8 | AZTECA\_HEC1\_1 | HEC | AZTECA | 2 |
| 2024 | 2 | DVICVI89 | CALLIC\_LON\_HI1\_1 | LON\_HILL | CALLICOA | 2 |
| 2024 | 2 | BASE CASE | EASTEX | n/a | n/a | 2 |
| 2024 | 2 | MPROPOM5 | FREER\_LOBO1\_1 | LOBO | FREER | 2 |
| 2024 | 2 | MPEAMOO8 | PEARSALL\_69\_4 | PEARSALL | PEARSALL | 2 |
| 2024 | 2 | DCAGCI58 | 656T656\_1 | KENDAL | BERGHE | 2 |
| 2024 | 2 | XALM689 | ALMC\_T2 | ALMC | ALMC | 2 |
| 2024 | 2 | STANPAW5 | BULLMO\_CALLIC1\_1 | CALLICOA | BULLMOOS | 2 |
| 2024 | 2 | MNEDPOM5 | FWLRTN\_TILDEN\_1 | FOWLRTON | TILDEN | 2 |
| 2024 | 2 | SEL\_ARR8 | LAN\_CT\_PAVLOV1\_1 | PAVLOV | LAN\_CTY | 2 |
| 2024 | 2 | DFERHOR8 | 415T415\_1 | MILLER | HENLY | 2 |
| 2024 | 2 | DSTEXP12 | ALPINE\_BRONCO1\_1 | BRONCO | ALPINE | 2 |
| 2024 | 2 | MANGWHP5 | COLETO\_VICTOR1\_1 | COLETO | VICTORIA | 2 |
| 2024 | 2 | MNEDPOM5 | GATEET\_UNIVER1\_1 | UNIVERSI | GATEETP | 2 |
| 2024 | 2 | SN\_SAJO5 | MV\_YUT\_RAYMND1\_1 | RAYMND2 | MV\_YUTT | 2 |
| 2024 | 2 | DWPWFCK5 | STPWAP39\_1 | STP | WAP | 2 |
| 2024 | 2 | SDC\_RAI8 | VALEXP | n/a | n/a | 2 |
| 2024 | 2 | DZORHAY5 | 415T415\_1 | MILLER | HENLY | 2 |
| 2024 | 2 | DCAGCI58 | 460T460\_1 | MEDILA | W1 | 2 |
| 2024 | 2 | DMTSCOS5 | 6474\_\_A | SUNSW | MGSES | 2 |
| 2024 | 2 | SSANFER8 | CORONA\_AT4 | CORONA | CORONA | 2 |
| 2024 | 2 | SW\_BLNG5 | CRTVLE\_EINSTEN\_1 | EINSTEIN | CRTRVLLE | 2 |
| 2024 | 2 | SBRAPIN8 | ESCOND\_GANSO1\_1 | GANSO | ESCONDID | 2 |
| 2024 | 2 | DWPWFWP5 | STPWAP39\_1 | STP | WAP | 2 |
| 2024 | 2 | DKOCNUE8 | MCKENZ\_WESTSI1\_1 | WESTSIDE | MCKENZIE | 2 |
| 2024 | 2 | DCAGCO58 | 583T583\_1 | BANDER | MASOCR | 2 |
| 2024 | 2 | DSWETKW5 | 6036\_\_A | TKWSW | MGSES | 2 |
| 2024 | 2 | SSUNMGS8 | 6240\_\_C | SACRC | DPCRK | 2 |
| 2024 | 2 | DSTPRED5 | BLESSI\_PAVLOV1\_1 | BLESSING | PAVLOV | 2 |
| 2024 | 2 | SOAKNIC8 | NICOLE\_TENNYS1\_1 | NICOLE | TENNYSON | 2 |
| 2024 | 2 | SGTVTUG9 | PAN-JON\_1 | JNESBORO | PCAKETNP | 2 |
| 2024 | 2 | SPHAPHA8 | VAL\_VERD\_WSLCO\_1 | MV\_VALV4 | WESLACO | 2 |
| 2024 | 2 | DCOLFA59 | BULLMO\_CALLIC1\_1 | CALLICOA | BULLMOOS | 2 |
| 2024 | 2 | SBLESTP5 | COLETO\_VICTOR1\_1 | COLETO | VICTORIA | 2 |
| 2024 | 2 | UFO1FOR1 | COLETO\_VICTOR1\_1 | COLETO | VICTORIA | 2 |
| 2024 | 2 | XSA2R58 | CONCHO\_VRBS1\_1 | CONCHO | VRBS | 2 |
| 2024 | 2 | MPOMPRO5 | DEL\_MA\_LAREDO1\_1 | LAREDO | DEL\_MAR | 2 |
| 2024 | 2 | DCOLFA59 | GODDAR\_TANGO1\_1 | GODDARD | TANGO | 2 |
| 2024 | 2 | SEBHUG8 | LANCTY\_LAN\_CT1\_1 | LAN\_CTY | LANCTYPM | 2 |
| 2024 | 2 | SGTVTUG9 | PAN-JON\_1 | PCAKETNP | JNESBORO | 2 |
| 2024 | 2 | SBTPBNT8 | SPR\_VALY\_1 | VALYVIEW | SPR | 2 |
| 2024 | 2 | SN\_SLON5 | KINGSV\_KLEBER1\_1 | KLEBERG | KINGSVIL | 1 |
| 2024 | 2 | STANPAW5 | MELONC\_RINCON1\_1 | RINCON | MELONCRE | 1 |
| 2024 | 2 | SL\_4VIC8 | PLC\_KAME\_1 | KAMEYS | PLCEDOS | 1 |
| 2024 | 2 | SCOLBAL8 | SANA\_FMR1 | SANA | SANA | 1 |
| 2024 | 2 | BASE CASE | T-103\_1 | NVAP\_138 | NVAP\_345 | 1 |
| 2024 | 2 | DTHSLCS5 | 282\_\_A | LHLSW | LCSES | 1 |
| 2024 | 2 | DBUCRGP5 | 505\_\_B | FBRSW | THSES | 1 |
| 2024 | 2 | DBUCRGP5 | 506\_\_A | SAMSW | FBRSW | 1 |
| 2024 | 2 | DMGSCON5 | 6046\_\_A | MGSES | FLCNS | 1 |
| 2024 | 2 | SDELLAR8 | ASHERT\_CATARI1\_1 | ASHERTON | CATARINA | 1 |
| 2024 | 2 | DSTEXP12 | BLESSI\_LOLITA1\_1 | LOLITA | BLESSING | 1 |
| 2024 | 2 | MHARNED5 | BURNS\_HEIDLBRG\_1 | MV\_BURNS | MV\_HBRG4 | 1 |
| 2024 | 2 | SN\_SLON5 | CELANE\_KLEBER1\_1 | CELANEBI | KLEBERG | 1 |
| 2024 | 2 | SN\_SAJO5 | FREER\_LOBO1\_1 | LOBO | FREER | 1 |
| 2024 | 2 | SSCJFS8 | GP\_NM\_94\_A | GP | NM | 1 |
| 2024 | 2 | BASE CASE | LOCKETT\_TLINE\_1 | LOCKETT | DIGBY | 1 |
| 2024 | 2 | SMCEESK8 | MKLT\_TRNT1\_1 | TRNT | MKLT | 1 |
| 2024 | 2 | SRAYRI38 | RAY\_MV\_R\_1 | RAYMND2 | MV\_RAYTP | 1 |
| 2024 | 2 | DBERNAR8 | 415T415\_1 | MILLER | HENLY | 1 |
| 2024 | 2 | SBERBUR8 | 415T415\_1 | MILLER | HENLY | 1 |
| 2024 | 2 | DKLNRGP5 | 505\_\_B | FBRSW | THSES | 1 |
| 2024 | 2 | DCDHTVW5 | 6325\_\_D | LTVSB | GRDPR | 1 |
| 2024 | 2 | DSCOTKW5 | 6474\_\_A | SUNSW | MGSES | 1 |
| 2024 | 2 | SMV2NED8 | AZTECA\_HEC1\_1 | HEC | AZTECA | 1 |
| 2024 | 2 | SCROPAL8 | BISON\_STRS1\_1 | BISON | STRS | 1 |
| 2024 | 2 | DFOWSMG5 | BRUNI\_69\_1 | BRUNI | BRUNI | 1 |
| 2024 | 2 | DMELRIN8 | COLETO\_VICTOR1\_1 | COLETO | VICTORIA | 1 |
| 2024 | 2 | XBLE58 | COLETO\_VICTOR1\_1 | COLETO | VICTORIA | 1 |
| 2024 | 2 | DFERWIR8 | CORONA\_AT4 | CORONA | CORONA | 1 |
| 2024 | 2 | SLOLFOR8 | FORMOS\_JOSLIN1\_1 | FORMOSA | JOSLIN | 1 |
| 2024 | 2 | MFOWLOB5 | FREER\_LOBO1\_1 | LOBO | FREER | 1 |
| 2024 | 2 | MPEAMOO8 | FRI\_PEAR\_1 | PEARSALL | FRIOTOS | 1 |
| 2024 | 2 | DBIGSCH5 | HARGRO\_PUMPJA1\_1 | HARGROVE | PUMPJACK | 1 |
| 2024 | 2 | MSGTSCH5 | HARGRO\_PUMPJA1\_1 | HARGROVE | PUMPJACK | 1 |
| 2024 | 2 | SN\_SLON5 | HOLLY4\_SOUTH\_1\_1 | HOLLY4 | SOUTH\_SI | 1 |
| 2024 | 2 | DMCEBUT8 | MKLT\_TRNT1\_1 | TRNT | MKLT | 1 |
| 2024 | 2 | DAJOSTE5 | MV\_YUT\_RAYMND1\_1 | RAYMND2 | MV\_YUTT | 1 |
| 2024 | 2 | DSNG\_TB5 | STLTB\_66\_A | STL | TB | 1 |
| 2024 | 2 | XTRS258 | 1210\_\_B | HUBRD | HAN1 | 1 |
| 2024 | 2 | SNOECED5 | 6056\_\_A | LNGSW | CONSW | 1 |
| 2024 | 2 | DCONLNG5 | 6470\_\_E | PCTSW | FRSTP | 1 |
| 2024 | 2 | XBOM58 | 6558\_\_B | FSHSW | WFALS | 1 |
| 2024 | 2 | DSNG\_TB5 | AN\_WO\_21\_A | WO | AN | 1 |
| 2024 | 2 | SHOLNLA8 | ASHERT\_CATARI1\_1 | ASHERTON | CATARINA | 1 |
| 2024 | 2 | SMV2NED8 | AZTECA\_CLOSNE1\_1 | AZTECA | CLOSNER | 1 |
| 2024 | 2 | SMV\_NED8 | AZTECA\_HEC1\_1 | HEC | AZTECA | 1 |
| 2024 | 2 | DKG\_NB\_5 | BCVPSA03\_A | PSA | BCV | 1 |
| 2024 | 2 | SBRAUVA8 | BRACKE\_ESCOND1\_1 | BRACKETT | ESCONDID | 1 |
| 2024 | 2 | DLONWAR5 | COLETO\_VICTOR1\_1 | COLETO | VICTORIA | 1 |
| 2024 | 2 | MCONTES5 | CONSW\_MR2L | CONSW | CONSW | 1 |
| 2024 | 2 | DFERGRM8 | CORONA\_AT4 | CORONA | CORONA | 1 |
| 2024 | 2 | DDILCOT8 | DILLEYSW\_69\_1 | DILLEYSW | DILLEYSW | 1 |
| 2024 | 2 | SODLBRA8 | DOLAN\_WHITIN1\_1 | WHITING | DOLAN | 1 |
| 2024 | 2 | SBRAHAM8 | GANSO\_MAVERI1\_1 | GANSO | MAVERICK | 1 |
| 2024 | 2 | SGRICOL5 | GODDAR\_TANGO1\_1 | GODDARD | TANGO | 1 |
| 2024 | 2 | SVICCO28 | GRETA\_REFUGI1\_1 | REFUGIO | GRETA | 1 |
| 2024 | 2 | SEBHUG8 | LAN\_CT\_PAVLOV1\_1 | LAN\_CTY | PAVLOV | 1 |
| 2024 | 2 | SAIRNCA8 | REFUG\_VICTO\_1C\_1 | VICTORIA | OCONNOR | 1 |
| 2024 | 2 | SBOSELM5 | WHTNY\_MR2L | WHTNY | WHTNY | 1 |
| 2024 | 2 | DSALHUT5 | 431\_\_A | BCESW | SNDSW | 1 |
| 2024 | 2 | SHAYZO25 | 6T227\_1 | HAYSEN | ZORN | 1 |
| 2024 | 2 | SSOLALM8 | BARL\_FMR1 | BARL | BARL | 1 |
| 2024 | 2 | SSCJFS8 | CF\_NM\_94\_A | NM | CF | 1 |
| 2024 | 2 | DCONLNG5 | CRTVLE\_EINSTEN\_1 | EINSTEIN | CRTRVLLE | 1 |
| 2024 | 2 | MNEDPOM5 | GATEET\_ST\_NIN1\_1 | GATEETP | ST\_NINO | 1 |
| 2024 | 2 | MFOWLOB5 | GATEWT\_WORMSE1\_1 | WORMSER | GATEWTP | 1 |
| 2024 | 2 | MWHPLON5 | GODDAR\_TANGO1\_1 | GODDARD | TANGO | 1 |
| 2024 | 2 | DFRIILL8 | HAMILT\_MAXWEL1\_1 | MAXWELL | HAMILTON | 1 |
| 2024 | 2 | MXWHI89 | HECKER\_WHITE\_2\_1 | WHITE\_PT | HECKER | 1 |
| 2024 | 2 | SBCESN35 | 431\_\_A | BCESW | SNDSW | 1 |
| 2024 | 2 | DVENFTS5 | 505\_\_B | FBRSW | THSES | 1 |
| 2024 | 2 | SSHKCRI8 | 940\_\_A | TMPTN | ENWSW | 1 |
| 2024 | 2 | SL\_4VIC8 | ALO\_WAR\_1 | WARBURTN | ALOES | 1 |
| 2024 | 2 | SEBHUG8 | BLESSI\_PAVLOV1\_1 | PAVLOV | BLESSING | 1 |
| 2024 | 2 | DTRIASH8 | CKT\_940\_1 | HAMILTN | WILLIAMS | 1 |
| 2024 | 2 | DDILCOT8 | DIL\_COTU\_1 | COTULAS | DILLEYSW | 1 |
| 2024 | 2 | SHOLWES8 | HOLLY4\_SOUTH\_1\_1 | HOLLY4 | SOUTH\_SI | 1 |
| 2024 | 2 | SPHAPOL8 | KEY\_SW\_PALMHR1\_1 | KEY\_SW | PALMHRTP | 1 |
| 2024 | 2 | STANPAW5 | MELONC\_SEADRF1\_1 | MELONCRE | SEADRFTC | 1 |
| 2024 | 2 | SPALFRO8 | PHARR\_PHARMV1\_1 | PHARMVEC | PHARR | 1 |
| 2024 | 2 | BASE CASE | T-103\_1 | NVAP\_345 | NVAP\_138 | 1 |
| 2024 | 2 | SAJ2ZOR5 | TILDEN\_GEOWEST\_1 | TILDEN | GEOWEST | 1 |
| 2024 | 2 | SBSPBUZ8 | 6135\_\_F | GUNSW | HPPOD | 1 |
| 2024 | 2 | SCMNCPS5 | 651\_\_C | CMNTP | SHILO | 1 |
| 2024 | 2 | SSPUASP8 | ASPM\_SWEN1\_1 | SWEN | ASPM | 1 |
| 2024 | 2 | SCO2EUL8 | BEEVIL\_NORMAN1\_1 | BEEVILLE | NORMANNA | 1 |
| 2024 | 2 | SBROALP9 | BELD\_BRONCO1\_1 | BELD | BRONCO | 1 |
| 2024 | 2 | DWPWFWP5 | BLESSI\_PAVLOV1\_1 | BLESSING | PAVLOV | 1 |
| 2024 | 2 | SSPUASP8 | DKEC\_JATN1\_1 | DKEC | JATN | 1 |
| 2024 | 2 | SSEAMEL8 | GRETA\_REFUGI1\_1 | REFUGIO | GRETA | 1 |
| 2024 | 2 | DBERWE58 | MOUNTO\_AT1 | MOUNTO | MOUNTO | 1 |
| 2024 | 2 | MFOWLOB5 | NLARSW\_UNITEC1\_1 | UNITEC | NLARSW | 1 |
| 2024 | 2 | SN\_SAJO5 | TILDEN\_GEOWEST\_1 | TILDEN | GEOWEST | 1 |
| 2024 | 2 | SVANRAY8 | VND\_PLCE\_1 | PLCEDOS | VANBLT69 | 1 |
| 2024 | 2 | DCAGCI58 | 415T415\_1 | MILLER | HENLY | 1 |
| 2024 | 2 | DKLNRGP5 | 506\_\_A | SAMSW | FBRSW | 1 |
| 2024 | 2 | DNOECED5 | 6056\_\_A | LNGSW | CONSW | 1 |
| 2024 | 2 | SSHKCRI8 | 940\_\_A | ENWSW | TMPTN | 1 |
| 2024 | 2 | SENWSHK8 | 941\_\_C | ENWSW | ENSSO | 1 |
| 2024 | 2 | STANPAW5 | BEEVIL\_NORMAN1\_1 | BEEVILLE | NORMANNA | 1 |
| 2024 | 2 | MRAPCEN5 | FREER\_LOBO1\_1 | LOBO | FREER | 1 |
| 2024 | 2 | SAJ2CEB5 | FREER\_LOBO1\_1 | LOBO | FREER | 1 |
| 2024 | 2 | SGAFGRN8 | G138\_14\_1 | FRWYPARK | DICKNSON | 1 |
| 2024 | 2 | STANPAW5 | GRETA\_REFUGI1\_1 | REFUGIO | GRETA | 1 |
| 2024 | 2 | DBIGSCH5 | HARGRO\_TWINBU1\_1 | TWINBU | HARGROVE | 1 |
| 2024 | 2 | DCONLNG5 | HARGRO\_TWINBU1\_1 | TWINBU | HARGROVE | 1 |
| 2024 | 2 | DNOESGT5 | HARGRO\_TWINBU1\_1 | TWINBU | HARGROVE | 1 |
| 2024 | 2 | SNOECED5 | HARGRO\_TWINBU1\_1 | TWINBU | HARGROVE | 1 |
| 2024 | 2 | SL\_4VIC8 | KAM\_PRTL\_1 | PRTLAVS | KAMEYS | 1 |
| 2024 | 2 | STANPAW5 | LON\_HI\_ORNGRO1\_1 | LON\_HILL | ORNGROV | 1 |
| 2024 | 2 | DCAGBRA5 | N5\_P4\_2\_1 | CALAVERS | SKYLINE | 1 |
| 2024 | 2 | DLONWAR5 | NCARBI\_SEADRF1\_1 | NCARBIDE | SEADRFTC | 1 |
| 2024 | 2 | SRAYRI38 | RAY\_MV\_R\_1 | MV\_RAYTP | RAYMND2 | 1 |
| 2024 | 2 | MRESMCM8 | RINCON\_69A1 | RINCON | RINCON | 1 |
| 2024 | 2 | DBWNRGP5 | 505\_\_B | FBRSW | THSES | 1 |
| 2024 | 2 | SLCSTH25 | 505\_\_B | FBRSW | THSES | 1 |
| 2024 | 2 | SN\_SAJO5 | ARMSTR\_LOYOLA1\_1 | ARMSTRON | LOYOLA | 1 |
| 2024 | 2 | SSIGSAN8 | BEEVIL\_NORMAN1\_1 | BEEVILLE | NORMANNA | 1 |
| 2024 | 2 | DSWELNC5 | BLUF\_C\_MULBER1\_1 | BLUF\_CRK | MULBERRY | 1 |
| 2024 | 2 | SVICCO28 | BULLMO\_CALLIC1\_1 | CALLICOA | BULLMOOS | 1 |
| 2024 | 2 | SN\_SAJO5 | BURNS\_RIOHONDO\_1 | RIOHONDO | MV\_BURNS | 1 |
| 2024 | 2 | SBAKCED5 | CEDRHI\_SILT1\_1 | CEDRHILL | SILT | 1 |
| 2024 | 2 | SSCJFS8 | CG\_CG\_06\_1 | CG | CG | 1 |
| 2024 | 2 | SMCEESK8 | ESKSW\_TRNT1\_1 | ESKSW | TRNT | 1 |
| 2024 | 2 | MANGWHP5 | GODDAR\_TANGO1\_1 | GODDARD | TANGO | 1 |
| 2024 | 2 | SEBHUG8 | LAN\_CT\_PAVLOV1\_1 | PAVLOV | LAN\_CTY | 1 |
| 2024 | 2 | DBIGKEN5 | MADDUX\_TREADW1\_1 | MADDUX | TREADWEL | 1 |
| 2024 | 2 | SAJ2ZOR5 | MV\_YUT\_RAYMND1\_1 | RAYMND2 | MV\_YUTT | 1 |
| 2024 | 2 | SPALFRO8 | PHARR\_YOUNG1\_1 | PHARR | YOUNG | 1 |
| 2024 | 2 | MRESMCM8 | RINCON\_WHITE\_2\_1 | WHITE\_PT | RINCON | 1 |
| 2024 | 2 | SDIMBEV8 | UVALDE\_W\_BATE1\_1 | W\_BATESV | UVALDE | 1 |
| 2024 | 2 | MVLSPA25 | 1561\_\_A | DPREA | RCSES | 1 |
| 2024 | 2 | XTRS258 | 1920\_\_B | ATHNS | TRNDD | 1 |

1. Current Wind Generation Record: 27,548 MW on 01/07/2024 at 18:42 | Current Wind Penetration Record: 69.15% on 04/10/2022 at 01:43

   Current Solar Generation Record: 17,201 MW on 02/19/2024 at 10:20 | Current Solar Penetration Record: 39.94% on 02/18/2024 at 15:05 [↑](#footnote-ref-2)
2. All DC Tie Curtailments are posted publicly on the ERCOT Market Information System. See that posting for additional details for the event(s) in question. [↑](#footnote-ref-3)
3. See DC Tie Operating Procedure (<http://www.ercot.com/mktrules/guides/procedures>) for more details. [↑](#footnote-ref-4)