

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

**AN ELECTRONIC EXAMINATION)
OF THE APPLICATION OF THE)
FUEL ADJUSTMENT CLAUSE OF) CASE NO. 2023-00008
KENTUCKY POWER COMPANY FROM)
NOVEMBER 1, 2020 THROUGH)
OCTOBER 31, 2022)**

**DIRECT TESTIMONY
AND EXHIBITS OF
RANDY A. FUTRAL**

ON BEHALF OF

**THE OFFICE OF THE ATTORNEY GENERAL OF
THE COMMONWEALTH OF KENTUCKY**

AND

THE KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.

**J. KENNEDY AND ASSOCIATES, INC.
ROSWELL, GEORGIA**

DECEMBER 2023

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DIRECT TESTIMONY OF RANDY A. FUTRAL

I. QUALIFICATIONS AND SUMMARY

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- Q. Please state your name and business address.**
- A. My name is Randy A. Futral. My business address is J. Kennedy and Associates, Inc. (“Kennedy and Associates”), 570 Colonial Park Drive, Suite 305, Roswell, Georgia 30075.
- Q. What is your occupation and by whom are you employed?**
- A. I am a utility rate and planning consultant holding the position of Director of Consulting with the firm of Kennedy and Associates.
- Q. Please describe your education and professional experience.**

1 A. I earned a Bachelor of Business and Science degree in Business Administration
2 with an emphasis in Accounting from Mississippi State University. I have held
3 various positions in the field of accounting for a period of over 35 years, both as an
4 employee and more recently as a consultant. My experience has been focused in
5 the areas of accounting, auditing, tax, budgeting, forecasting, financial reporting,
6 and management.

7 Since 2003, I have been a consultant with Kennedy and Associates,
8 providing services to state government agencies and large consumers of utility
9 services in the ratemaking, financial, tax, accounting, and management areas.

10 From 1997 to 2003, I served both as the Corporate Controller and Assistant
11 Controller of Telscape International, Inc., an international public company
12 providing telecommunication and high-end internet access services. My tenure
13 with Telscape included responsibilities in the areas of accounting, financial
14 reporting, budgeting, forecasting, banking, and management.

15 From 1988 to 1997, I was employed by Comcast Communications, Inc.,
16 then the world's third largest cable television provider, in a series of positions
17 including Regional Controller for their South Central regional office. My duties
18 with Comcast encompassed various accounting, tax, budgeting, forecasting, and
19 managerial functions.

20 From 1984 to 1988, I held various staff and senior level accounting
21 positions for both public accounting and private concerns focusing in the areas of
22 accounting, budgeting, tax and financial reporting.

23 I have testified as an expert on ratemaking, accounting, finance, tax, and

1 other issues in proceedings before regulatory commissions at the federal and state
2 levels on numerous occasions. I have also acted as the lead expert in numerous
3 proceedings involving audits of Louisiana fuel adjustment clauses, environmental
4 adjustment clauses, purchase gas adjustment clauses, energy efficiency rider
5 filings, and formula rate plan filings resulting in written reports that were ultimately
6 approved by the Louisiana Public Service Commission.

7 I recently appeared as a witness before the Kentucky Public Service
8 Commission (“Commission”) in a Water Service Corporation of Kentucky base
9 rate proceeding in Case No. 2022-00147 and in a Duke Energy Kentucky, Inc. base
10 rate proceeding in Case No. 2022-00372. I also filed Direct Testimony in a
11 Kentucky Power Company (“Kentucky Power” or “Company”) purchased power
12 adjustment tariff update proceeding in Case No. 2023-00318, in which a hearing is
13 still pending. Finally, I filed Direct Testimony in a Kentucky Power fuel
14 adjustment clause six-month review proceeding in Case No. 2022-00263, which
15 was consolidated into the instant proceeding. Although I had not previously
16 appeared before the Commission as a witness, I have assisted counsel for the Office
17 of the Attorney General of the Commonwealth of Kentucky and Kentucky
18 Industrial Utilities Customers, as well as other Kennedy and Associates’ experts, in
19 numerous proceedings before the Commission, including base rate, fuel adjustment
20 clause, and acquisition proceedings involving Kentucky Power, Atmos Energy
21 Corporation, Duke Energy Kentucky, Inc., Columbia Gas of Kentucky, Inc.,
22 Kentucky Utilities Company, Louisville Gas and Electric Company, Big Rivers
23 Electric Corporation, Jackson Purchase Energy Corporation, East Kentucky Power

1 Cooperative, and Kentucky-American Water Company.¹

2

3 **Q. On whose behalf are you testifying?**

4 A. I am testifying on behalf of the Office of the Attorney General of the
5 Commonwealth of Kentucky (“AG”) and the Kentucky Industrial Utility
6 Customers, Inc. (“KIUC”).

7

8 **Q. Briefly describe this proceeding.**

9 A. This proceeding involves a two-year review, initiated by the Commission on
10 September 6, 2023, to examine Kentucky Power’s application of its Fuel
11 Adjustment Clause (FAC) from November 1, 2020 through October 31, 2022.

12

13 **Q. Please provide a summary of your testimony?**

14 A. Kentucky Power uses a hypothetical ratemaking methodology known as the
15 Peaking Unit Equivalent (“PUE”) to determine whether its energy purchases are
16 economic and therefore fully recoverable through its FAC. Because Kentucky
17 Power does not own an actual combustion turbine (“CT”) peaking unit, and other
18 utilities in Kentucky do, the Commission allowed the Company to utilize a
19 hypothetical CT in the FAC. A high PUE means that more purchases are
20 considered to be economic and therefore recoverable in the FAC. In 2017, the
21 Commission allowed the Company to increase its PUE by including startup costs

¹ My qualifications are further detailed in Exhibit___(RAF-1).

1 to more closely replicate the operation of an actual CT. However, the Company
2 unrealistically assumed that its hypothetical CT would start and stop every hour of
3 the year (8,760 times). This added \$30/mWh to the PUE. Based upon the actual
4 operation of AEP's 100 mW Ceredo CT, I calculate that startup costs should only
5 be \$4.62/mWh. By lowering the level of the PUE, the amounts of purchases that
6 are recoverable in the FAC are reduced by \$10.2 million. I also quantify the effect
7 of AG/KIUC witness Mr. Kollen's recommendation. This testimony is very similar
8 to the testimony I filed on December 2, 2022 related to the Kentucky Power fuel
9 adjustment clause six-month review proceeding in Case No. 2022-00263 that was
10 consolidated into the instant proceeding.

11

12 **Q. Can you describe the Company's calculation of the PUE utilized in the FAC**
13 **filings during the review period?**

14 A. Yes. As described more in detail below, Kentucky Power uses a hypothetical
15 ratemaking methodology known as the PUE to determine whether its energy
16 purchases are economic and therefore fully recoverable through its FAC. A high
17 PUE means that more purchases are considered to be economic and therefore fully
18 recoverable in the FAC. The PUE calculation starts with the determination of the
19 cost of gas that would have been burned by a hypothetical gas-fired CT in a single
20 hour. Kentucky Power multiplies the daily market price for natural gas by a heat
21 rate of 10,400 Btu/kWh for nine months out of the year and 10,800 Btu/kWh during
22 the summer months of June through August. The Company adds hypothetical
23 startup costs of \$30/mWh and variable operations and maintenance ("O&M") costs

1 of \$3.48/mWh to the determined cost of gas to complete its PUE calculation. It
2 adds these start and stop costs of \$30/mWh 8,760 times per year for every hour in
3 every year. The following calculation was performed by the Company to determine
4 the PUE for the first hour on November 1, 2021, based on a daily market price of
5 gas that day of \$5.05/mWh:

6	Gas Costs	\$52.50/mWh
7	(\$5.05/mWh x (10,400/1,000)) Btu/mWh	
8	Fixed Startup Costs	\$30.00/mWh
9	Variable O&M Costs	<u>\$3.48/mWh</u>
10		
11	PUE – November 1, 2021 Hour 1	\$86.00/mWh
12		

13 **Q. Can you summarize the effects of the Company's calculated PUE**
14 **disallowances during the review period?**

15 A. Yes. The table below reflects the PUE disallowances of \$4,518,435 calculated
16 by the Company and removed from recoverable FAC costs by month during the
17 review period.²

²The Company removed these amounts in each of its monthly FAC filings based on results from its FAC workpapers filed in response to Staff and AG-KIUC discovery. See attachments in response to Staff 1-16 in Case No. 2021-00292, attachments in response to Staff 1-16 in Case No. 2022-00036, attachments in response to Staff 1-16 in Case No. 2022-00263, and attachments in response to AG-KIUC 1-3 in the instant proceeding.

KPCo - PUE Disallowances For The Twenty-Four Months November 2020 through October 2022 Case No. 2023-00008 \$	
<u>Month</u>	<u>PUE Disallowance with \$30/mWh Startup Costs</u>
Nov 20	18,169
Dec 20	5,193
Jan 21	-
Feb 21	6,171
Mar 21	36,239
Apr 21	2,924
May 21	27,541
Jun 21	-
Jul 21	1,355
Aug 21	322,570
Sep 21	32,806
Oct 21	29,766
Nov 21	443,748
Dec 21	79,578
Jan 22	665,115
Feb 22	51,226
Mar 22	-
Apr 22	45,216
May 22	254,887
Jun 22	205,221
Jul 22	381,205
Aug 22	745,497
Sep 22	904,634
Oct 22	259,374
Total	<u><u>4,518,435</u></u>

1

2

3 **Q. Describe the Company’s source for the \$30/mWh startup cost per hour for**
4 **each hour of the year used for the hypothetical PUE.**

5 A. Company witness Mr. Alex E. Vaughan supported the addition of startup costs in

1 the PUE in his direct testimony in Case 2017-00179 and reflected the \$30/mWh in
2 Exhibit AEV 8 to his direct testimony in that proceeding.³ In his testimony, Mr.
3 Vaughan stated that the addition of startup costs in the \$/mWh costs for the PUE
4 were necessary because these were “costs that would be incurred to operate an
5 *actual* natural gas combustion turbine generating unit (CT).” (emphasis added).⁴

6 In addition, Mr. Vaughan stated that the “CT startup costs include start up
7 fuel consumed, station power requirements and *start up maintenance and labor;*
8 *and are incurred when bringing a CT online but prior to the unit generating power.*
9 These are *real* costs that the hypothetical CT would incur in order to generate
10 electricity and should be included in the peaking unit equivalent cost calculation.”
11 (emphasis added).⁵

12 Further, Mr. Vaughan stated that “[b]ased on the Company’s experience and
13 information available regarding costs associated with combustion turbines, the
14 startup costs, variable O&M, and firm gas components combine to add between
15 \$38-\$39/MWh to the peaking unit equivalent cost calculation depending on the
16 month of the year. The details behind this calculation can be found in Exhibit AEV
17 8.”⁶

18 In short, Mr. Vaughan testified that the proposed PUE was based on “real
19 costs” that “would be incurred to operate an *actual* natural gas combustion turbine
20 generating unit” and that startup costs only would be incurred once per startup prior

³ Direct Testimony of Vaughan at 32-35 and Exhibit AEV 8 attached to his Direct Testimony in Case 2017-00179.

⁴ *Id.*, 34.

⁵ *Id.*

⁶ *Id.*, 35.

1 to the hypothetical CT generating power. (emphasis added). In contrast to Mr.
2 Vaughan’s testimony on these issues, the Company’s calculation of the \$/mWh
3 costs of the PUE assumes that the hypothetical CT would be started and stopped
4 8,760 times each year. This would never happen in the real world. Thus, the PUE
5 costs being used for every hour do not reflect “real costs” and are not the costs that
6 “would be incurred to operate an *actual* combustion turbine generating unit,” such
7 as Ceredo 1.

8 .

9 **Q. Did Mr. Vaughan or any other Company witness in Case 2017-00179 disclose**
10 **that the Company planned to include the \$30/mWh startup costs for the PUE**
11 **in every hour of the year for the purpose of calculating the FAC purchased**
12 **power limitation?**

13 A. No. The Company failed to disclose this important fact in Case 2017-00179. Nor
14 did Mr. Vaughan provide the source for the \$30/mWh startup costs included in the
15 PUE. The Company finally disclosed this important fact and that Appalachian
16 Power Company's 100 mW Ceredo 1 CT was the actual unit relied on for the
17 hypothetical PUE in response to discovery in Case No. 2022-00036.⁷ Startup costs
18 were assumed to be \$3,000 per start. Because the Company assumed 8,760 starts
19 and stop per year, its math is $\$3,000/100 \text{ mW} = \$30/\text{mWh}$.

20

21 **Q. Does the 100 mW Ceredo 1 CT incur startup costs only in the hour that it is**

⁷ Company’s response to Staff’s Post-Hearing Data Request 2, Attachment 1 in Case No. 2022-00036. The \$30/mWh startup cost is based on hypothetical startup costs of \$3,000 for a hypothetical 100 mW unit.

1 **started or in every hour that it operates?**

2 A. The Ceredo 1 CT incurs \$3,000 in startup costs only in the hour that it is started.
3 For example, if this CT runs for 14 hours, startup costs are only incurred in the first
4 hour. In this example, startup costs over the entire run time would be \$2.14/mWh
5 (\$3,000/100 mW/14 = \$2.14/mWh). The Company confirmed that the Ceredo 1
6 “[s]tartup costs are incurred on a per-start basis” in response to AG-KIUC
7 discovery in this proceeding.⁸

8

9 **Q. Are the Company’s generating units dispatched by PJM based on a dollar cost**
10 **for each startup or based on including the startup costs in each hour that the**
11 **generating unit operates?**

12 A. The Company provides a dollar cost for each startup for each of its generating units
13 in accordance with the information and form defined by PJM.⁹ The Company
14 agrees that the startup costs “are calculated and submitted on a per-start basis in
15 accordance with PJM protocols and are not calculated on a dollar-per-MWh
16 basis.”¹⁰ Finally, the Company agrees that the startup costs for Ceredo 1 “are
17 incurred on a per-start basis.”¹¹

18

19 **Q. Why is the issue of the startup costs for the PUE important for purposes of the**

⁸ Response to AG-KIUC 1-5 in Case No. 2022-00263. I have attached a copy of this response as my Exhibit__(RAF-2).

⁹ Response to AG-KIUC 1-3(c) in Case No. 2022-00263. I have attached a copy of this response as my Exhibit__(RAF-3).

¹⁰ Response to AG-KIUC 1-3(e) in Case No. 2022-00263. See Exhibit__(RAF-3).

¹¹ Response to AG-KIUC 1-5 in Case No. 2022-00263. See Exhibit__(RAF-2).

1 **FAC purchased power limitation?**

2 A. It is important because it affects the purchased power expense included in the FAC.
3 If startup costs are inflated, then the PUE is inflated and too many market energy
4 purchases are deemed to be economic and therefore recoverable in the FAC. An
5 inflated PUE also likely affects the Company's operation and maintenance of its
6 base load generating units, which, in turn, affects the power purchased in lieu of
7 operating its lower cost base load generating units. In other words, an inflated PUE
8 provides the Company an incentive to not operate its base load generating units or
9 to operate them at a lower capacity factor.

10

11 **Q. How long does the 100 mW Ceredo 1 generating unit operate once it is started?**

12 A. During 2021, the average runtime for the Ceredo 1 generating unit was 6.49 hours
13 over 140 total starts.

14

15 **Q. Based on the average runtime of Ceredo 1, do you recommend a modification**
16 **to the amount of fixed startup costs in the PUE calculation?**

17 A. Yes. I recommend that the Commission set the hypothetical fixed startup cost
18 amount in the PUE calculation to \$4.62/mWh based on the actual run-time
19 experience of Ceredo 1. If the startup costs are included in the PUE, then they
20 should be no greater than the costs that the hypothetical CT would actually incur.
21 The one-time \$3,000 startup costs for Ceredo 1 averaged over the 6.49 hours of
22 generation for each startup occurring during 2021 is equivalent to \$4.62/mWh.

23

1 **Q. Is your PUE calculation recommendation the same as the recommendation**
2 **made by KIUC counsel during the six-month period review in Case No. 2022-**
3 **00036 and in your Direct Testimony filed in Case No. 2022-00263?**

4 A. Yes.

5
6 **Q. Did you assist KIUC counsel in Case No. 2022-00036 in the determination of**
7 **the Ceredo Unit 1's average hours of operation of 6.49 hours that is also used**
8 **as part of your PUE recommendation in this proceeding?**

9 A. Yes. I performed the calculation of Ceredo Unit 1's 6.49 hour average runtime
10 based on actual hourly generation results published for 2021.¹² To perform the
11 calculation, I first determined the hours of duration that electricity was generated
12 for each of the 140 separate Ceredo Unit 1 startups that occurred during 2021. I
13 summed those hours and divided them by the 140 separate startups to determine
14 that the average hourly runtime of each was 6.49 hours. I have attached a summary
15 of my calculation as my Exhibit___(RAF-4) that shows each of the hours during
16 2021 in which generation occurred as well as the average runtime. For purposes of
17 this exhibit, I hid all of the rows of data for hours that the unit did not operate.¹³

18

¹² Generation by hour results for Ceredo Unit 1 were derived from SNL Financial S&P Capital Global market Intelligence databases through its subscription service. The data obtained also references the original source of the data as the EPA's Continuous Emissions Monitoring System (CEMS).

¹³ The quantifications and initial SNL database results are detailed in my electronic workpapers, which were filed at the same time that my testimony was filed. The electronic workpapers consist of an Excel workbook in live format and with all formulas intact.

1 **Q. Did you rerun the Company's PUE disallowance calculations using the**
2 **hypothetical startup costs of \$4.62/mWh that you recommend instead of the**
3 **\$30/mWh used in the Company's calculations?**

4 A. Yes. This change in the calculation for each hour was a simple one and took only
5 minutes to modify the calculations in each month applicable to the review period.
6 The calculation of the PUE utilized for the FAC purchased power limitation and
7 PUE disallowance calculation is found in cell column L in each monthly "Hourly
8 Purchase Alloc" worksheet tab in the monthly Excel workpaper file attachments
9 supplied by the Company in response to Staff and AG-KIUC discovery.¹⁴ For each
10 hour, the PUE calculation computes the cost of gas and adds \$33.48/mWh at the
11 end of the formula for the costs of Kentucky Power's hypothetical fixed startup and
12 variable O&M costs. I simply changed the formula in the first hour each month to
13 add only \$8.10/mWh, made up of the modified \$4.62/mWh startup costs and the
14 same variable O&M costs of \$3.48/mWh. I copied this formula change to each
15 hour for each of the review period months. This change applies to all PJM market-
16 based purchases not associated with forced outages in order to serve native load
17 occurring in each hour without limitation. The table below reflects the PUE
18 disallowances summing to \$4,518,435 as calculated by the Company and the PUE
19 disallowances that I recalculated for each month summing to \$14,760,054, an
20 increase in the PUE disallowances for the review period of \$10,241,619.¹⁵ Just like

¹⁴ For the month of November 2021 as an example, the worksheet tab is named "11-21 Hourly Purchase Alloc."

¹⁵ The quantifications are detailed in my electronic workpapers, which were filed at the same time that my testimony was filed. The electronic workpapers consist of the monthly Excel files provided

1 the Company's calculation of PUE disallowances, these disallowances are based
2 on the application of the PUE methodology to all native load PJM purchases made
3 excluding those associated with forced outages.

by the Company in response to Staff and AG-KIUC discovery in each of the four six-month review periods modified for the change in the PUE. The Excel workbooks are in live format and with all formulas intact. The Company filed a modified calculation of its PUE disallowance for August 2021 in Case No. 2022-0036. The originally calculated PUE disallowance amount for that month was \$322,570, which is the amount included in the August 2021 FAC filing. The amount was recalculated by Kentucky Power to be \$137,037, but a correction was never considered in a subsequent FAC monthly rate filing. My calculations start with the revised PUE disallowance calculation of \$137,037.

1

KPCo - PUE Disallowances AG and KIUC Recommended PUE Disallowances To Adjust for Changes in the Start-Up Costs For The Twenty-Four Months November 2020 through October 2022 Case No. 2023-00008 \$			
Month	PUE Disallowance with \$30/mWh Startup Costs for All Purchases	PUE Disallowance with \$4.62/mWh Startup Costs for All Purchases	Variance
Nov 20	18,169	47,456	29,287
Dec 20	5,193	157,293	152,100
Jan 21	-	-	-
Feb 21	6,171	18,149	11,978
Mar 21	36,239	36,239	-
Apr 21	2,924	97,866	94,942
May 21	27,541	54,892	27,351
Jun 21	-	25,449	25,449
Jul 21	1,355	17,603	16,248
Aug 21	322,570	238,244	(84,326)
Sep 21	32,806	93,936	61,130
Oct 21	29,766	689,413	659,647
Nov 21	443,748	2,173,348	1,729,600
Dec 21	79,578	494,012	414,434
Jan 22	665,115	1,297,878	632,763
Feb 22	51,226	198,348	147,122
Mar 22	-	-	-
Apr 22	45,216	275,207	229,991
May 22	254,887	702,567	447,680
Jun 22	205,221	712,789	507,568
Jul 22	381,205	743,887	362,682
Aug 22	745,497	1,796,381	1,050,884
Sep 22	904,634	2,765,893	1,861,259
Oct 22	259,374	2,123,204	1,863,830
Total	4,518,435	14,760,054	10,241,619

2

3

4 **Q. Mr. Kollen further recommends that the FAC purchased power limitation be**
 5 **changed to modify the PUE methodology after the first 100 mW of purchases**

1 **each hour, with the additional purchases required each hour priced using the**
2 **cost of the highest cost coal-fired generating unit each month. Did you rerun**
3 **the Company's FAC purchased power limitation and disallowance**
4 **calculations to calculate the effects of Mr. Kollen's modified PUE**
5 **recommendation?**

6 A. Yes. This change in the FAC purchased power limitation and disallowance
7 calculation for each hour during the review period was a little more involved. The
8 changes were reflected in the same monthly "Hourly Purchase Alloc" worksheet
9 tabs in the monthly Excel workpaper file attachments supplied by the Company in
10 response to Staff and AG-KIUC discover. I retained the same recalculation of the
11 PUE each hour based of the modified startup costs of \$4.62/mWh in column L.
12 However, instead of applying this recalculated PUE to all purchases for native load
13 not associated with forced outages, I added five additional calculation columns, cell
14 columns U through Y, to measure the results of Mr. Kollen's recommendation to
15 modify the PUE for all purchases over 100 mW in each hour. These new
16 calculation columns were created to ensure that the PUE, adjusted first for the
17 change in startup costs that I recommend, would apply to only the first 100 mW of
18 purchases each hour and that the remainder of such purchases would be measured
19 against the cost of the highest cost coal-fired generating unit each month.¹⁶ The

¹⁶ The highest cost coal-fired generating unit in March 2022, as calculated by the Company, was over \$1,239/mWh. Mr. Kollen addresses this unusually high cost calculation result in his Direct Testimony. For that month, I substituted the highest cost coal-fired generating unit from February 2022 of \$31.273/mWh as a reasonable proxy to calculate the effects of Mr. Kollen's modified PUE recommendation. There was no generation at all during October 2022. For that month, I substituted the cost of the highest cost coal-fired generating unit from September 2022 of \$42.241/mWh as a reasonable proxy to calculate the effects of Mr.

1 table below reflects the results of these calculation changes. The changes to the
2 PUE recommended by Mr. Kollen and myself result in a disallowance of
3 \$59,785,373 for the review period. This is \$55,266,938 higher than the PUE
4 disallowances calculated by the Company.¹⁷

Kollen's modified PUE recommendation

¹⁷ The quantifications are detailed in my electronic workpapers, which were filed at the same time that my testimony was filed. The electronic workpapers consist of the monthly Excel files provided by the Company in response to Staff and AG-KIUC discovery modified for the changes in the PUE. The Excel workbooks are in live format and with all formulas intact.

Kentucky Power Company AG and KIUC Recommended PUE Disallowances Based on 100mW Threshold For The Twenty-Four Months November 2020 through October 2022 Case No. 2023-00008 \$					
Month	As Filed PUE Disallowance with \$30/mWh Start-Up for All Purchases	PUE Disallowance with \$4.62 mWh Start-Up for first 100 mW Purchases Each Hour	Additional PUE Disallowance for All Purchases Above 100 mW	Combined Modified PUE Disallowances	Increase in Disallowance As Filed PUE Disallowance vs Combined Modified PUE Disallowance
Nov 20	18,169	25,425	22,192	47,617	29,448
Dec 20	5,193	54,950	144,187	199,137	193,944
Jan 21	-	-	-	-	-
Feb 21	6,171	14,795	165,968	180,763	174,592
Mar 21	36,239	11,297	24,942	36,239	-
Apr 21	2,924	56,044	62,277	118,321	115,397
May 21	27,541	46,710	21,155	67,865	40,324
Jun 21	-	9,321	69,136	78,457	78,457
Jul 21	1,355	14,630	12,144	26,774	25,419
Aug 21	322,570	182,645	124,297	306,942	(15,628)
Sep 21	32,806	60,880	191,830	252,710	219,904
Oct 21	29,766	206,101	4,199,633	4,405,734	4,375,968
Nov 21	443,748	394,027	10,277,190	10,671,217	10,227,469
Dec 21	79,578	152,641	1,044,134	1,196,775	1,117,197
Jan 22	665,115	693,868	1,040,628	1,734,496	1,069,381
Feb 22	51,226	56,475	3,175,697	3,232,172	3,180,946
Mar 22	-	58,777	4,207,937	4,266,714	4,266,714
Apr 22	45,216	97,320	1,781,345	1,878,665	1,833,449
May 22	254,887	386,303	3,595,595	3,981,898	3,727,011
Jun 22	205,221	285,140	3,480,812	3,765,952	3,560,731
Jul 22	381,205	446,822	1,100,293	1,547,115	1,165,910
Aug 22	745,497	463,996	6,186,879	6,650,875	5,905,378
Sep 22	904,634	583,737	8,298,597	8,882,334	7,977,700
Oct 22	259,374	337,978	5,918,623	6,256,601	5,997,227
Total	4,518,435	4,639,882	55,145,491	59,785,373	55,266,938

1

2

3 **Q. Mr. Kollen also proposed an alternative recommendation to modify the PUE**
 4 **FAC purchased power limitation after the first 200 mW of purchases each**
 5 **hour instead of only 100 mW, with the additional purchases required each**
 6 **hour priced using his modified PUE methodology. Did you rerun the**

1 **Company's FAC purchased power limitation and disallowance calculations to**
2 **calculate the effects of this alternative recommendation?**

3 A. Yes. To do so, I simply changed the first 100 mW calculation threshold for each
4 hour for each month in the calculations I just described to use a threshold of 200
5 mW. The table below reflects the results of these calculation changes. The changes
6 to the PUE methodologies recommended by Mr. Kollen, as part of his alternative
7 recommendation, and myself result in a disallowance of \$44,345,484 for the review
8 period. This is \$39,827,049 higher than the PUE disallowances calculated by the
9 Company.¹⁸

¹⁸ *Id.*

Kentucky Power Company AG and KIUC Recommended PUE Disallowances Based on 200mW Threshold For The Twenty-Four Months November 2020 through October 2022 Case No. 2023-00008 \$					
Month	As Filed PUE Disallowance with \$30/mWh Start-Up for All Purchases	PUE Disallowance with \$4.62 mWh Start-Up for first 200 mW Purchases Each Hour	Additional PUE Disallowance for All Purchases Above 200 mW	Combined Modified PUE Disallowances	Increase in Disallowance As Filed PUE Disallowance vs Combined Modified PUE Disallowance
Nov 20	18,169	44,619	2,914	47,533	29,364
Dec 20	5,193	101,017	82,327	183,344	178,151
Jan 21	-	-	-	-	-
Feb 21	6,171	17,817	52,933	70,750	64,579
Mar 21	36,239	20,688	15,551	36,239	-
Apr 21	2,924	86,756	15,587	102,343	99,419
May 21	27,541	54,212	2,214	56,426	28,885
Jun 21	-	18,104	28,115	46,219	46,219
Jul 21	1,355	17,603	-	17,603	16,248
Aug 21	322,570	230,852	17,116	247,968	(74,602)
Sep 21	32,806	79,725	64,671	144,396	111,590
Oct 21	29,766	408,845	2,678,627	3,087,472	3,057,706
Nov 21	443,748	787,633	7,720,946	8,508,579	8,064,831
Dec 21	79,578	294,661	567,540	862,201	782,623
Jan 22	665,115	1,082,570	357,263	1,439,833	774,718
Feb 22	51,226	104,660	2,225,680	2,330,340	2,279,114
Mar 22	-	117,553	3,246,264	3,363,817	3,363,817
Apr 22	45,216	157,288	1,071,577	1,228,865	1,183,649
May 22	254,887	591,753	1,610,697	2,202,450	1,947,563
Jun 22	205,221	495,264	1,914,485	2,409,749	2,204,528
Jul 22	381,205	650,167	311,002	961,169	579,964
Aug 22	745,497	860,390	3,810,968	4,671,358	3,925,861
Sep 22	904,634	1,167,474	5,723,235	6,890,709	5,986,075
Oct 22	259,374	675,957	4,760,164	5,436,121	5,176,747
Total	4,518,435	8,065,608	36,279,876	44,345,484	39,827,049

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3 **Q. Does this complete your testimony?**

4 **A. Yes.**

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

**AN ELECTRONIC EXAMINATION)
OF THE APPLICATION OF THE)
FUEL ADJUSTMENT CLAUSE OF) CASE NO. 2023-00008
KENTUCKY POWER COMPANY FROM)
NOVEMBER 1, 2020 THROUGH)
OCTOBER 31, 2022)**

**EXHIBITS
OF
RANDY A. FUTRAL**

ON BEHALF OF

**THE OFFICE OF THE ATTORNEY GENERAL OF
THE COMMONWEALTH OF KENTUCKY**

AND

THE KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.

**J. KENNEDY AND ASSOCIATES, INC.
ROSWELL, GEORGIA**

DECEMBER 2023

EXHIBIT __ (RAF-1)

FERC Docket No. ER08-51 Entergy Services, Inc., LPSC Section 206 Filing Related to Spindletop Regulatory Asset in Rough Production Cost Equalization Computation, November 2008.

FERC Docket No. ER08-1056 Entergy Services, Inc., Company's 2008 Filing to be in Compliance with FERC Opinions' 480 and 480-A, January 2009.

LPSC Docket No. U-31066 Dixie Electric Membership Corporation, Company's Application to Implement a Storm Recovery Rate Rider, September 2009.

LPSC Docket No. U-30893 Dixie Electric Membership Corporation, Company's Application to Implement a Formula Rate Plan, September 2009.

FERC Docket No. EL09-61 (Phase I) Entergy Services, Inc., LPSC Complaint Regarding Single Operating Company Opportunity Sales, April 2010.

LPSC Docket No. U-31066 Dixie Electric Membership Corporation, Company's Application to Implement a Storm Recovery Rate Rider, May 2010.

FERC Docket No. EL10-55 Entergy Services, Inc.

LPSC Complaint Regarding Depreciation Rates, September 2010.

LPSC Docket No. U-23327, Subdocket E Southwestern Electric Power Company, 2003-2004 Fuel Audit, September 2010.

LPSC Docket No. U-23327, Subdocket F Southwestern Electric Power Company, 2009 Test Year Formula Rate Plan Filing, October 2010.

LPSC Docket No. U-23327, Subdocket C Southwestern Electric Power Company, 2007 Test Year Formula Rate Plan Filing, February 2011.

LPSC Docket No. U-23327, Subdocket D Southwestern Electric Power Company, 2008 Test Year Formula Rate Plan Filing, February 2011.

FERC Docket No. ER10-2001 Entergy Arkansas, Inc., Company's 2010 Filing to Request Approval of Changed Depreciation Rates, March 2011.

FERC Docket No. ER11-2161 Entergy Texas, Inc., Company's 2010 Filing to Request Approval of Changed Depreciation Rates, July 2011.

LPSC Docket No. U-31835 South Louisiana Electric Cooperative Association, Company's Application to Implement a Formula Rate Plan and Initial Revenue Adjustment, August 2011.

FERC Docket No. ER12-1384 Entergy Services, Inc., Company's Section 205 Filing Related to Little Gypsy 3 Cancellation Costs, September 2012.

LPSC Docket No. U-32315 Claiborne Electric Cooperative, Inc.'s Application to Implement a Formula Rate Plan and Initial Revenue Adjustment, September 2012.

FERC Docket No. ER10-1350 Entergy Services, Inc., Company's 2010 Filing to be in Compliance with FERC Opinions' 480 and 480-A, January 2014.

FERC Docket No. EL-01-88-015 Entergy Services, Inc., Company's 2005 Remand Filing to be in Compliance with FERC Opinions' 480 and 480-A, March 2016.

LPSC Docket No. U-33984 Claiborne Electric Cooperative, Inc., Formula Rate Plan Extension, October 2016.

FERC Docket No. EL09-61(Phase III) Entergy Services, Inc., LPSC Complaint Regarding Single Operating Company Opportunity Sales, November 2016.

LPSC Docket No. U-33323 Entergy Louisiana LLC, 2010-2013 Fuel Audit, July 2019.

LPSC Docket No. U-33324 Entergy Gulf States Louisiana LLC, 2010-2013 Fuel Audit, July 2019.

LPSC Docket No. U-35441 Southwestern Electric Power Company, Rate Case, July 2021 Direct, October 2021 Surrebuttal.

Direct Testimony filed on behalf of the Florida OPC:

FPSC Docket Nos. 20200241-EI, 202100178-EI, and 202100179-EI Florida Power and Light Company and Gulf Power Company, Storm Cost Audit, May 2022.

Direct Testimony filed on behalf of the KY AG:

KPSC Case No. 2022-00372 Duke Energy Kentucky, Inc. (Electric Division), Rate Case, March 2023.

Direct Testimony filed on behalf of the KY AG and the City of Clinton:

KPSC Case No. 2022-00147 Water Service Corporation of Kentucky, Rate Case, October 2022.

Direct Testimony filed on behalf of the KY AG and KIUC:

KPSC Case No. 2022-00263 Kentucky Power Company, Fuel Adjustment Clause – Six-Month Review, December 2022.

KPSC Case No. 2023-00318 Kentucky Power Company, Tariff PPA Modification, November 2023.

Direct Testimony filed on behalf of the South Carolina ORS:

SCPSC Docket No. 2022-256-E Duke Energy Progress, LLC, Cost Recovery for 8 Named Storms Since 2014, January 2023.

Direct Testimony filed on behalf of the OEG in Ohio:

PUCO Case No. 23-301-EL-SSO FirstEnergy Utilities, Standard Service Offer in the Form of an Electric Security Plan, October 2023.

Telscape International, Inc.
Corporate Controller
Assistant Controller

1997 - 2003
1999 - 2003
1997 - 1999

Complete responsibility and accountability for the accounting and financial functions of a \$160 million newly public company providing telecommunication and high-end internet access services. Telscape served as a telephony carrier of services domestically and to Latin and Central America targeting other service carriers as well as individuals. Reported directly to CFO and managed a staff of eleven.

J. KENNEDY AND ASSOCIATES, INC.

- Managed the day to day processes required to produce timely and accurate financial statements, including general ledger, account reconciliations, AP, AR, fixed assets, payroll, treasury, tax, internal and external reporting.
- Worked with attorneys and auditors on mergers and acquisitions including due diligence, audits, tax and integrating the accounting functions of eleven acquisitions.
- Grew the accounting department from four to eleven employees while developing and implementing company policies and procedures.
- Instituted capital investment policy and accounts payable management for twenty-one separate entities and twenty-four bank accounts to facilitate effective use of cash flow.
- Created capital and operating budgeting and variance analysis package for five separate business lines.
- Developed the consolidations and inter-company billings process across all entities including six in Latin and Central America.
- Worked with CFO to develop financial models and business plans in raising over \$240 million over a three-year period through private preferred placements, debenture offerings and asset based credit facilities.
- Responsible for relationship management with external auditors, attorneys, and the banking community while reviewing and approving all SEC filings, including quarterly and annual reports, proxies and informational filings.
- Developed line cost accounting for revenues and carrier invoices saving thousands monthly and providing the justification for invoice reductions.

Comcast Communications, Inc.	1988 - 1997
Regional Controller	1993 - 1997
Regional Assistant Controller	1991 - 1992
Regional Senior Financial Analyst	1988 - 1991

Complete responsibility and accountability for the accounting functions of a \$2.1 billion regional division of the world's third largest cable television provider serving approximately 490,000 subscribers. Reported to the Regional VP of Finance and managed a staff of twelve.

- Managed the day to day processes required to produce timely and accurate financial statements, including general ledger, account reconciliations, AP, AR, fixed assets and internal reporting.
- Controlled extensive budgeting, forecasting, and variance reporting for eighteen separate entities covering eight states, training employees and management throughout the region.
- Performed due diligence related to the acquisition of seven cable system entities and coordinated the integration of all accounting functions with the corporate office.
- Instituted all FCC informational and rate increase filings throughout the region based on the Cable Act of 1992.
- Responsible for the coordination of all subscriber reporting, sales and property tax filings, franchise fee and copyright filings.
- Grew the accounting department from seven to thirteen before its move to Atlanta, restaffing ninety percent of the department after the move.
- Directed all efforts throughout the region to implement Oracle as the new financial package and a new Access database for the budgeting and forecasting processes.

Storer Cable Communications, Inc
Senior Accountant for Operations

1987 - 1988

Responsibility for the accounting, budgeting, and forecasting activities of this 82,000 subscriber area for this cable television concern that was acquired by Comcast listed above. Reported to the Area VP and General Manager and managed three employees.

- Implemented new Lotus based model for budgeting and forecasting, training all management on its use.
- Transitioned financial statement preparation from the regional office level to this area office.
- Managed the day to day processes required to produce timely and accurate financial statements for six separate entities including general

ledger, AP, AR, fixed assets, subscriber reporting and other internal reporting.

- Developed and maintained tracking mechanism to track progress of cable plant rebuild and the associated competitor overbuild in the area's largest cable system.

Tracey-Luckey Pecan & Storage, Inc.
Senior Accountant

1986 - 1987

Responsibility for the accounting, budgeting, and office management for a divisional office of this pecan production, processing, and storage entity annually grossing approximately \$22 million. Financial statements were produced for three entities. Reported directly to the president of the division and managed three employees.

Tarpley & Underwood, CPA's
Staff Accountant

1984 - 1986

Responsibility for the completion of monthly and quarterly client write-up for twenty-three small businesses for this regional CPA firm that is now one of the top twenty-five firms in Atlanta. Performed all payroll tax, sales tax, property tax, and income tax filings for these and other clients as well as approximately eighty individual returns per year. Reported directly to both partners with dotted line responsibility to all managers.

EXHIBIT ____ (RAF-2)

Kentucky Power Company
KPSC Case No. 2022-00263
AG KIUC First Set of Data Requests
Dated October 13, 2022

DATA REQUEST

- 1_5** Confirm that the Ceredo startup cost of \$3,000 is incurred only in the hour in which the unit is started and is not incurred again each subsequent hour that it operates until it is shut down. If this is not correct, then provide a corrected statement and a copy of all documentation that the startup cost is incurred each and every hour in which Ceredo operates.

RESPONSE

Startup costs are incurred on a per-start basis.

Witness: Jason M. Stegall

EXHIBIT ____ (RAF-3)

Kentucky Power Company
KPSC Case No. 2022-00263
AG KIUC First Set of Data Requests
Dated October 13, 2022
Page 1 of 2

DATA REQUEST

- 1_3** Refer to the Direct Testimony of Jason Stegall at 3 wherein he states:
The offering of the Company's generation resources involves submitting a large volume of data to PJM that includes unit commitment designation, offer curves that cover the range of output from economic minimum to economic maximum, and market parameters. The market parameters include, but are not limited to, a unit's startup cost, startup time in hours, how quickly a unit can ramp-up energy production, and other characteristics defined in PJM protocols.
- a. Confirm that Mr. Stegall is employed by AEPSC, not Kentucky Power Company.
 - b. Confirm that the AEPSC PJM bidding strategy and the form and substance of the information provided to PJM is the same for all AEP operating utilities with generating units, including Kentucky Power Company, Appalachian Power Company/Wheeling Power Company, and Indiana and Michigan. If this is not correct, then provide a corrected statement, the reasons why a corrected statement is necessary, and all support for the corrections that are necessary.
 - c. With respect to the testimony referenced in the question, confirm that the "startup cost" provided by AEPSC to PJM for each generating unit is in dollars, not dollars per mWh, and is used by PJM only once in the unit dispatch decision algorithm, not every hour after the unit has been dispatched until it is shut down.
 - d. Describe how PJM uses the "startup cost" information provided by AEPSC in the unit dispatch decision algorithm.
 - e. Provide the "startup cost" in dollars and dollars per mWh for each of the Company's generating units. Indicate whether PJM uses the Company's or any other "startup cost" in dollars per mWh for any purpose. If so, then describe each such purpose.

RESPONSE

- a. The Company objects to this request on the basis that it seeks information that is neither relevant to this proceeding nor reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving the foregoing objections, the Company confirms.
- b. The Company objects to this request on the basis that it seeks information that is neither relevant to this proceeding nor reasonably calculated to lead to the discovery of

Kentucky Power Company
KPSC Case No. 2022-00263
AG KIUC First Set of Data Requests
Dated October 13, 2022
Page 2 of 2

admissible evidence. Subject to and without waiving the foregoing objections, the Company states that the form and substance of information submitted to PJM is defined by PJM.

- c. While the startup costs provided to PJM for each generating unit are provided as dollars-per-start, PJM is using the values provided to determine whether an offline unit should be started in order to provide energy into the energy markets. This means that PJM is using this information as an economic input to an operational decision and not solely to conduct an economic evaluation.
- d. When committing units in the Day Ahead Energy Market, PJM will consider whether offline resources are needed to meet energy demands for the next operating day. In cases where the online generating units cannot provide enough generation to serve load, PJM will consider offline units by considering, among other variables, the startup costs and the incremental cost of generation.
- e. Please see KPCO_R_AG-KIUC_1_3_Attachment1 for the average monthly startup costs for each unit. These dollars are calculated and submitted on a per-start basis in accordance with PJM protocols and are not calculated on a dollar-per-MWh basis.

Witness: Jason M. Stegall

Kentucky Power Company
 Average Startup Costs for Generating Units
 Source: PJM Settlement System

Cold Startup Cost

	Nov 2021	Dec	Jan 2022	Feb	Mar	Apr
Big Sandy	\$10,824	\$7,575	\$9,212	\$10,478	\$10,429	\$14,139
Mitchell Unit 1	\$117,792	\$120,999	\$113,557	\$115,344	\$130,650	\$160,609
Mitchell Unit 2	\$71,068	\$73,010	\$68,616	\$69,289	\$78,512	\$96,881
Rockport Unit 1	\$199,041	\$200,130	\$186,394	\$203,713	\$231,177	\$290,725
Rockport Unit 2	\$197,293	\$198,372	\$185,634	\$205,562	\$231,177	\$297,838

Intermediate Startup Cost

	Nov 2021	Dec	Jan 2022	Feb	Mar	Apr
Big Sandy	\$5,517	\$3,899	\$4,754	\$5,384	\$5,359	\$7,236
Mitchell Unit 1	\$56,049	\$57,582	\$54,186	\$55,043	\$62,375	\$76,986
Mitchell Unit 2	\$57,468	\$59,041	\$55,531	\$56,080	\$63,560	\$78,547
Rockport Unit 1	\$138,064	\$138,796	\$129,308	\$141,314	\$160,359	\$201,689
Rockport Unit 2	\$136,853	\$137,578	\$128,781	\$142,595	\$160,359	\$206,627

Hot Startup Cost

	Nov 2021	Dec	Jan 2022	Feb	Mar	Apr
Big Sandy	\$2,117	\$1,488	\$1,811	\$2,057	\$2,047	\$2,770
Mitchell Unit 1	\$51,591	\$53,099	\$49,119	\$49,971	\$57,227	\$71,508
Mitchell Unit 2	\$52,936	\$54,484	\$50,389	\$50,951	\$58,354	\$73,008
Rockport Unit 1	\$94,952	\$95,377	\$88,156	\$96,562	\$109,964	\$138,633
Rockport Unit 2	\$94,105	\$94,526	\$87,776	\$97,436	\$109,964	\$142,032

EXHIBIT ____ (RAF-4)



Ceredo | Unit Hourly Operations (Data)

Periods From: 01/01/2021 To: 12/31/2021

Date and Time	CO2 Emissions (tons)	SO2 Emissions (lbs)	NOx Emissions (lbs)	Heat Input (MMBtu)	Gross Generation (MWh)	Column F-Number	Hours In Duration	Gross Unit Load During
1/1/2021 2:00 PM	52.3	0.5	24.8	886.0	75			75
1/1/2021 3:00 PM	56.5	0.6	26.8	956.9	81			81
1/1/2021 4:00 PM	55.8	0.6	26.5	945.1	80			80
1/1/2021 5:00 PM	56.5	0.6	26.8	956.9	81			81
1/1/2021 6:00 PM	56.5	0.6	26.8	956.9	81			81
1/1/2021 7:00 PM	3.4	0.0	39.8	56.8	5	1	6	13
1/13/2021 8:00 AM	50.2	0.5	23.8	850.6	72			72
1/13/2021 9:00 AM	61.3	0.6	29.1	1,039.6	88			88
1/13/2021 10:00 AM	12.3	0.1	5.8	208.8	18	1	3	31
2/8/2021 7:00 AM	24.0	0.2	11.4	407.6	35			46
2/8/2021 8:00 AM	64.1	0.7	30.4	1,086.9	92			92
2/8/2021 9:00 AM	50.9	0.5	24.1	862.4	73	1	3	73
2/8/2021 6:00 PM	21.4	0.2	10.1	362.2	31			42
2/8/2021 7:00 PM	59.9	0.6	28.4	1,016.0	86			86
2/8/2021 8:00 PM	60.6	0.6	28.8	1,027.8	87			87
2/8/2021 9:00 PM	50.2	0.5	23.8	850.6	72	1	4	72
2/13/2021 11:00 AM	17.0	0.2	8.1	288.5	24			37
2/13/2021 12:00 PM	61.3	0.6	29.1	1,039.6	88			88
2/13/2021 1:00 PM	61.3	0.6	29.1	1,039.6	88			88
2/13/2021 2:00 PM	7.7	0.1	91.3	130.4	11	1	4	23
2/15/2021 8:00 AM	53.7	0.5	25.5	909.7	77			77
2/15/2021 9:00 AM	62.0	0.6	29.4	1,051.4	89			89
2/15/2021 10:00 AM	62.0	0.6	29.4	1,051.4	89			89
2/15/2021 11:00 AM	62.0	0.6	29.4	1,051.4	89			89
2/15/2021 12:00 PM	62.0	0.6	29.4	1,051.4	89			89
2/15/2021 1:00 PM	62.0	0.6	29.4	1,051.4	89			89
2/15/2021 2:00 PM	62.0	0.6	29.4	1,051.4	89			89
2/15/2021 3:00 PM	61.3	0.6	29.1	1,039.6	88			88
2/15/2021 4:00 PM	61.3	0.6	29.1	1,039.6	88			88
2/15/2021 5:00 PM	61.3	0.6	29.1	1,039.6	88			88
2/15/2021 6:00 PM	60.6	0.6	28.8	1,027.8	87			87
2/15/2021 7:00 PM	25.8	0.3	12.2	436.6	37	1	12	48
2/16/2021 5:00 AM	1.6	0.0	18.6	26.5	2			7
2/16/2021 6:00 AM	61.3	0.6	29.1	1,039.6	88			88
2/16/2021 7:00 AM	61.3	0.6	29.1	1,039.6	88			88
2/16/2021 8:00 AM	62.0	0.6	29.4	1,051.4	89			89
2/16/2021 9:00 AM	62.7	0.6	29.8	1,063.3	90			90
2/16/2021 10:00 AM	62.7	0.6	29.8	1,063.3	90			90
2/16/2021 11:00 AM	62.7	0.6	29.8	1,063.3	90			90
2/16/2021 12:00 PM	62.7	0.6	29.8	1,063.3	90			90
2/16/2021 1:00 PM	62.7	0.6	29.8	1,063.3	90			90
2/16/2021 2:00 PM	62.7	0.6	29.8	1,063.3	90			90
2/16/2021 3:00 PM	62.7	0.6	29.8	1,063.3	90			90
2/16/2021 4:00 PM	63.4	0.6	30.1	1,075.1	91			91
2/16/2021 5:00 PM	63.4	0.6	30.1	1,075.1	91			91
2/16/2021 6:00 PM	63.4	0.6	30.1	1,075.1	91			91
2/16/2021 7:00 PM	63.4	0.6	30.1	1,075.1	91			91
2/16/2021 8:00 PM	64.1	0.7	30.4	1,086.9	92			92
2/16/2021 9:00 PM	64.1	0.7	30.4	1,086.9	92			92
2/16/2021 10:00 PM	1.5	0.0	17.4	24.8	2	1	18	7
2/17/2021 2:00 AM	57.9	0.6	27.5	980.6	83			83
2/17/2021 3:00 AM	64.1	0.7	30.4	1,086.9	92			92



Ceredo | Unit Hourly Operations (Data)

Periods From: 01/01/2021 To: 12/31/2021

Date and Time	CO2 Emissions (tons)	SO2 Emissions (lbs)	NOx Emissions (lbs)	Heat Input (MMBtu)	Gross Generation (MWh)	Column F-Number	Hours In Duration	Gross Unit Load During
2/17/2021 4:00 AM	64.1	0.7	30.4	1,086.9	92			92
2/17/2021 5:00 AM	64.8	0.7	30.8	1,098.7	93			93
2/17/2021 6:00 AM	64.8	0.7	30.8	1,098.7	93			93
2/17/2021 7:00 AM	64.8	0.7	30.8	1,098.7	93			93
2/17/2021 8:00 AM	64.1	0.7	30.4	1,086.9	92			92
2/17/2021 9:00 AM	64.1	0.7	30.4	1,086.9	92			92
2/17/2021 10:00 AM	64.1	0.7	30.4	1,086.9	92			92
2/17/2021 11:00 AM	64.1	0.7	30.4	1,086.9	92			92
2/17/2021 12:00 PM	64.1	0.7	30.4	1,086.9	92			92
2/17/2021 1:00 PM	8.0	0.1	95.3	136.1	12	1	12	24
2/17/2021 4:00 PM	1.6	0.0	18.6	26.5	2			7
2/17/2021 5:00 PM	62.7	0.6	29.8	1,063.3	90			90
2/17/2021 6:00 PM	62.7	0.6	29.8	1,063.3	90			90
2/17/2021 7:00 PM	62.7	0.6	29.8	1,063.3	90			90
2/17/2021 8:00 PM	63.4	0.6	30.1	1,075.1	91			91
2/17/2021 9:00 PM	63.4	0.6	30.1	1,075.1	91			91
2/17/2021 10:00 PM	3.6	0.0	42.8	61.2	5	1	7	14
2/19/2021 9:00 AM	59.2	0.6	28.1	1,004.2	85			85
2/19/2021 10:00 AM	62.0	0.6	29.4	1,051.4	89			89
2/19/2021 11:00 AM	62.0	0.6	29.4	1,051.4	89			89
2/19/2021 12:00 PM	62.0	0.6	29.4	1,051.4	89			89
2/19/2021 1:00 PM	62.0	0.6	29.4	1,051.4	89			89
2/19/2021 2:00 PM	62.0	0.6	29.4	1,051.4	89			89
2/19/2021 3:00 PM	62.0	0.6	29.4	1,051.4	89			89
2/19/2021 4:00 PM	62.7	0.6	29.8	1,063.3	90			90
2/19/2021 5:00 PM	62.7	0.6	29.8	1,063.3	90			90
2/19/2021 6:00 PM	62.7	0.6	29.8	1,063.3	90			90
2/19/2021 7:00 PM	7.7	0.1	91.3	130.4	11	1	11	23
3/8/2021 6:00 AM	9.8	0.1	4.6	165.9	14			26
3/8/2021 7:00 AM	63.4	0.6	30.1	1,075.1	91			91
3/8/2021 8:00 AM	57.9	0.6	27.5	980.6	83	1	3	83
3/9/2021 5:00 AM	3.9	0.0	46.3	66.2	6			14
3/9/2021 6:00 AM	62.0	0.6	29.4	1,051.4	89			89
3/9/2021 7:00 AM	62.0	0.6	29.4	1,051.4	89			89
3/9/2021 8:00 AM	10.9	0.1	5.2	185.0	16	1	4	29
4/7/2021 4:00 PM	1.4	0.0	16.5	23.6	2			6
4/7/2021 5:00 PM	54.7	0.6	26.0	927.3	73			73
4/7/2021 6:00 PM	54.7	0.6	26.0	927.3	73			73
4/7/2021 7:00 PM	55.5	0.6	26.3	940.0	74			74
4/7/2021 8:00 PM	57.0	0.6	27.0	965.4	76			76
4/7/2021 9:00 PM	25.7	0.3	12.2	435.9	34	1	6	44
4/9/2021 3:00 PM	6.0	0.1	71.1	101.5	8			17
4/9/2021 4:00 PM	46.5	0.5	22.1	787.5	62			62
4/9/2021 5:00 PM	46.5	0.5	22.1	787.5	62			62
4/9/2021 6:00 PM	46.5	0.5	22.1	787.5	62			62
4/9/2021 7:00 PM	46.5	0.5	22.1	787.5	62			62
4/9/2021 8:00 PM	4.8	0.0	57.3	81.9	6	1	6	15
4/12/2021 8:00 AM	11.5	0.1	5.5	195.5	15			27
4/12/2021 9:00 AM	51.0	0.5	24.2	863.8	68			68
4/12/2021 10:00 AM	50.2	0.5	23.8	851.1	67			67
4/12/2021 11:00 AM	2.6	0.0	31.2	44.5	4	1	4	10



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Date and Time	CO2 Emissions (tons)	SO2 Emissions (lbs)	NOx Emissions (lbs)	Heat Input (MMBtu)	Gross Generation (MWh)	Column F-Number	Hours In Duration	Gross Unit Load During
4/20/2021 6:00 AM	18.6	0.2	8.8	314.9	25			37
4/20/2021 7:00 AM	55.5	0.6	26.3	940.0	74			74
4/20/2021 8:00 AM	53.2	0.5	25.3	901.9	71			71
4/20/2021 9:00 AM	50.2	0.5	23.8	851.1	67			67
4/20/2021 10:00 AM	47.2	0.5	22.4	800.2	63			63
4/20/2021 11:00 AM	46.5	0.5	22.1	787.5	62			62
4/20/2021 12:00 PM	46.5	0.5	22.1	787.5	62			62
4/20/2021 1:00 PM	46.5	0.5	22.1	787.5	62			62
4/20/2021 2:00 PM	46.5	0.5	22.1	787.5	62			62
4/20/2021 3:00 PM	46.5	0.5	22.1	787.5	62			62
4/20/2021 4:00 PM	46.5	0.5	22.1	787.5	62			62
4/20/2021 5:00 PM	46.5	0.5	22.1	787.5	62			62
4/20/2021 6:00 PM	46.5	0.5	22.1	787.5	62			62
4/20/2021 7:00 PM	46.5	0.5	22.1	787.5	62			62
4/20/2021 8:00 PM	46.5	0.5	22.1	787.5	62			62
4/20/2021 9:00 PM	14.3	0.1	6.8	243.1	19	1	16	29
4/22/2021 6:00 AM	3.8	0.0	45.1	64.4	5			13
4/22/2021 7:00 AM	66.0	0.7	31.3	1,117.8	88			88
4/22/2021 8:00 AM	65.2	0.7	30.9	1,105.1	87			87
4/22/2021 9:00 AM	54.0	0.5	25.6	914.6	72			72
4/22/2021 10:00 AM	54.7	0.6	26.0	927.3	73			73
4/22/2021 11:00 AM	11.5	0.1	5.5	194.9	15	1	6	26
4/23/2021 6:00 AM	2.3	0.0	27.2	38.9	3			9
4/23/2021 7:00 AM	66.7	0.7	31.7	1,130.5	89			89
4/23/2021 8:00 AM	66.0	0.7	31.3	1,117.8	88			88
4/23/2021 9:00 AM	18.6	0.2	8.8	315.5	25	1	4	36
4/27/2021 1:00 PM	29.6	0.3	14.1	502.5	40			43
4/27/2021 2:00 PM	45.0	0.5	21.3	762.1	60			60
4/27/2021 3:00 PM	45.7	0.5	21.7	774.8	61			61
4/27/2021 4:00 PM	54.0	0.5	25.6	914.6	72			72
4/27/2021 5:00 PM	54.0	0.5	25.6	914.6	72			72
4/27/2021 6:00 PM	54.0	0.5	25.6	914.6	72			72
4/27/2021 7:00 PM	54.7	0.6	26.0	927.3	73			73
4/27/2021 8:00 PM	56.2	0.6	26.7	952.7	75			75
4/27/2021 9:00 PM	13.3	0.1	6.3	224.8	18	1	9	30
4/28/2021 1:00 PM	23.0	0.2	10.9	390.1	31			37
4/28/2021 2:00 PM	45.0	0.5	21.3	762.1	60			60
4/28/2021 3:00 PM	46.5	0.5	22.1	787.5	62			62
4/28/2021 4:00 PM	48.7	0.5	23.1	825.6	65			65
4/28/2021 5:00 PM	45.0	0.5	21.3	762.1	60			60
4/28/2021 6:00 PM	45.0	0.5	21.3	762.1	60			60
4/28/2021 7:00 PM	45.0	0.5	21.3	762.1	60			60
4/28/2021 8:00 PM	45.7	0.5	21.7	774.8	61			61
4/28/2021 9:00 PM	34.2	0.3	16.2	579.1	46	1	9	47
5/3/2021 6:00 PM	37.8	0.4	17.9	640.9	51			54
5/3/2021 7:00 PM	45.7	0.5	21.7	774.6	62			62
5/3/2021 8:00 PM	45.0	0.5	21.3	762.1	61			61
5/3/2021 9:00 PM	45.0	0.5	21.3	762.1	61			61
5/3/2021 10:00 PM	45.0	0.5	21.3	762.1	61			61
5/3/2021 11:00 PM	45.0	0.5	21.3	762.1	61			61
5/4/2021 12:00 AM	9.5	0.1	4.5	160.9	13	1	7	23
5/18/2021 7:00 PM	39.1	0.4	18.5	662.1	53			53
5/18/2021 8:00 PM	45.7	0.5	21.7	774.6	62			62



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5/18/2021 9:00 PM	5.2	0.1	61.5	87.9	7	1	3	16
5/19/2021 5:00 PM	13.0	0.1	6.2	220.4	18			28
5/19/2021 6:00 PM	45.0	0.5	21.3	762.1	61			61
5/19/2021 7:00 PM	45.0	0.5	21.3	762.1	61			61
5/19/2021 8:00 PM	3.5	0.0	41.0	58.5	5	1	4	12
5/20/2021 3:00 PM	4.0	0.0	47.7	68.2	5			13
5/20/2021 4:00 PM	45.0	0.5	21.3	762.1	61			61
5/20/2021 5:00 PM	45.0	0.5	21.3	762.1	61			61
5/20/2021 6:00 PM	45.0	0.5	21.3	762.1	61			61
5/20/2021 7:00 PM	38.3	0.4	18.2	649.6	52	1	5	52
5/24/2021 5:00 PM	11.1	0.1	5.3	188.4	15			26
5/24/2021 6:00 PM	56.0	0.6	26.6	949.4	76			76
5/24/2021 7:00 PM	56.0	0.6	26.6	949.4	76			76
5/24/2021 8:00 PM	56.0	0.6	26.6	949.4	76			76
5/24/2021 9:00 PM	56.8	0.6	26.9	961.9	77			77
5/24/2021 10:00 PM	13.0	0.1	6.2	221.1	18	1	6	30
5/25/2021 11:00 AM	44.2	0.4	21.0	749.6	60			60
5/25/2021 12:00 PM	56.0	0.6	26.6	949.4	76			76
5/25/2021 1:00 PM	56.8	0.6	26.9	961.9	77			77
5/25/2021 2:00 PM	56.0	0.6	26.6	949.4	76			76
5/25/2021 3:00 PM	56.0	0.6	26.6	949.4	76			76
5/25/2021 4:00 PM	56.0	0.6	26.6	949.4	76			76
5/25/2021 5:00 PM	56.0	0.6	26.6	949.4	76			76
5/25/2021 6:00 PM	56.0	0.6	26.6	949.4	76			76
5/25/2021 7:00 PM	56.8	0.6	26.9	961.9	77			77
5/25/2021 8:00 PM	56.8	0.6	26.9	961.9	77			77
5/25/2021 9:00 PM	57.5	0.6	27.3	974.4	78			78
5/25/2021 10:00 PM	57.5	0.6	27.3	974.4	78			78
5/25/2021 11:00 PM	38.0	0.4	18.0	643.6	52	1	13	56
5/26/2021 12:00 PM	4.8	0.0	56.4	80.6	6			15
5/26/2021 1:00 PM	56.0	0.6	26.6	949.4	76			76
5/26/2021 2:00 PM	53.8	0.5	25.5	912.0	73			73
5/26/2021 3:00 PM	53.1	0.5	25.2	899.5	72			72
5/26/2021 4:00 PM	56.8	0.6	26.9	961.9	77			77
5/26/2021 5:00 PM	56.8	0.6	26.9	961.9	77			77
5/26/2021 6:00 PM	56.8	0.6	26.9	961.9	77			77
5/26/2021 7:00 PM	56.8	0.6	26.9	961.9	77			77
5/26/2021 8:00 PM	31.7	0.3	15.0	537.2	43	1	9	50
5/27/2021 12:00 PM	2.3	0.0	27.6	39.4	3			9
5/27/2021 1:00 PM	56.8	0.6	26.9	961.9	77			77
5/27/2021 2:00 PM	56.8	0.6	26.9	961.9	77			77
5/27/2021 3:00 PM	56.8	0.6	26.9	961.9	77			77
5/27/2021 4:00 PM	56.8	0.6	26.9	961.9	77			77
5/27/2021 5:00 PM	57.5	0.6	27.3	974.4	78			78
5/27/2021 6:00 PM	57.5	0.6	27.3	974.4	78			78
5/27/2021 7:00 PM	56.8	0.6	26.9	961.9	77			77
5/27/2021 8:00 PM	56.0	0.6	26.6	949.4	76	1	9	76
6/3/2021 1:00 PM	48.6	0.5	23.1	824.5	66			66
6/3/2021 2:00 PM	56.8	0.6	26.9	961.9	77			77
6/3/2021 3:00 PM	56.8	0.6	26.9	961.9	77			77
6/3/2021 4:00 PM	56.8	0.6	26.9	961.9	77			77
6/3/2021 5:00 PM	56.8	0.6	26.9	961.9	77			77



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Date and Time	CO2 Emissions (tons)	SO2 Emissions (lbs)	NOx Emissions (lbs)	Heat Input (MMBtu)	Gross Generation (MWh)	Column F-Number	Hours In Duration	Gross Unit Load During
6/3/2021 6:00 PM	56.8	0.6	26.9	961.9	77			77
6/3/2021 7:00 PM	22.9	0.2	10.9	388.3	31	1	7	42
6/4/2021 4:00 PM	39.8	0.4	18.9	674.6	54			54
6/4/2021 5:00 PM	51.6	0.5	24.5	874.5	70			70
6/4/2021 6:00 PM	53.1	0.5	25.2	899.5	72			72
6/4/2021 7:00 PM	50.9	0.5	24.1	862.0	69			69
6/4/2021 8:00 PM	3.6	0.0	43.2	61.7	5	1	5	13
6/5/2021 4:00 PM	1.4	0.0	16.2	23.2	2			6
6/5/2021 5:00 PM	45.0	0.5	21.3	762.1	61			61
6/5/2021 6:00 PM	44.2	0.4	21.0	749.6	60			60
6/5/2021 7:00 PM	31.9	0.3	15.1	540.2	43	1	4	46
6/7/2021 12:00 PM	4.6	0.0	55.1	78.7	6			15
6/7/2021 1:00 PM	48.6	0.5	23.1	824.5	66			66
6/7/2021 2:00 PM	45.0	0.5	21.3	762.1	61			61
6/7/2021 3:00 PM	45.7	0.5	21.7	774.6	62			62
6/7/2021 4:00 PM	45.0	0.5	21.3	762.1	61			61
6/7/2021 5:00 PM	45.0	0.5	21.3	762.1	61			61
6/7/2021 6:00 PM	45.0	0.5	21.3	762.1	61			61
6/7/2021 7:00 PM	3.4	0.0	39.9	57.0	5	1	8	12
6/8/2021 12:00 PM	3.1	0.0	36.5	52.2	4			11
6/8/2021 1:00 PM	46.4	0.5	22.0	787.0	63			63
6/8/2021 2:00 PM	46.4	0.5	22.0	787.0	63			63
6/8/2021 3:00 PM	45.0	0.5	21.3	762.1	61			61
6/8/2021 4:00 PM	45.0	0.5	21.3	762.1	61			61
6/8/2021 5:00 PM	45.0	0.5	21.3	762.1	61			61
6/8/2021 6:00 PM	56.0	0.6	26.6	949.4	76			76
6/8/2021 7:00 PM	56.8	0.6	26.9	961.9	77			77
6/8/2021 8:00 PM	56.8	0.6	26.9	961.9	77			77
6/8/2021 9:00 PM	56.8	0.6	26.9	961.9	77			77
6/8/2021 10:00 PM	51.6	0.5	24.5	874.5	70			70
6/8/2021 11:00 PM	1.0	0.0	11.8	16.9	1	1	12	5
6/9/2021 3:00 PM	48.6	0.5	23.1	824.5	66			66
6/9/2021 4:00 PM	55.3	0.6	26.2	937.0	75			75
6/9/2021 5:00 PM	45.7	0.5	21.7	774.6	62			62
6/9/2021 6:00 PM	15.5	0.2	7.4	263.3	21	1	4	31
6/10/2021 10:00 AM	37.4	0.4	17.8	634.1	51			54
6/10/2021 11:00 AM	55.3	0.6	26.2	937.0	75			75
6/10/2021 12:00 PM	55.3	0.6	26.2	937.0	75			75
6/10/2021 1:00 PM	55.3	0.6	26.2	937.0	75			75
6/10/2021 2:00 PM	55.3	0.6	26.2	937.0	75			75
6/10/2021 3:00 PM	55.3	0.6	26.2	937.0	75			75
6/10/2021 4:00 PM	55.3	0.6	26.2	937.0	75			75
6/10/2021 5:00 PM	55.3	0.6	26.2	937.0	75			75
6/10/2021 6:00 PM	55.3	0.6	26.2	937.0	75			75
6/10/2021 7:00 PM	56.0	0.6	26.6	949.4	76			76
6/10/2021 8:00 PM	56.0	0.6	26.6	949.4	76			76
6/10/2021 9:00 PM	56.0	0.6	26.6	949.4	76			76
6/10/2021 10:00 PM	56.0	0.6	26.6	949.4	76			76
6/10/2021 11:00 PM	56.0	0.6	26.6	949.4	76			76
6/11/2021 12:00 AM	26.5	0.3	12.6	449.7	36	1	15	45
6/11/2021 12:00 PM	19.4	0.2	9.2	328.3	26			36
6/11/2021 1:00 PM	55.3	0.6	26.2	937.0	75			75



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6/11/2021 2:00 PM	55.3	0.6	26.2	937.0	75			75
6/11/2021 3:00 PM	55.3	0.6	26.2	937.0	75			75
6/11/2021 4:00 PM	56.0	0.6	26.6	949.4	76			76
6/11/2021 5:00 PM	56.0	0.6	26.6	949.4	76			76
6/11/2021 6:00 PM	44.2	0.4	21.0	749.6	60	1	7	60
6/12/2021 1:00 PM	37.8	0.4	17.9	640.9	51			54
6/12/2021 2:00 PM	55.3	0.6	26.2	937.0	75			75
6/12/2021 3:00 PM	55.3	0.6	26.2	937.0	75			75
6/12/2021 4:00 PM	55.3	0.6	26.2	937.0	75			75
6/12/2021 5:00 PM	55.3	0.6	26.2	937.0	75			75
6/12/2021 6:00 PM	55.3	0.6	26.2	937.0	75			75
6/12/2021 7:00 PM	55.3	0.6	26.2	937.0	75			75
6/12/2021 8:00 PM	55.3	0.6	26.2	937.0	75			75
6/12/2021 9:00 PM	55.3	0.6	26.2	937.0	75			75
6/12/2021 10:00 PM	11.8	0.1	5.6	199.4	16	1	10	28
6/14/2021 12:00 PM	1.1	0.0	13.1	18.7	2			5
6/14/2021 1:00 PM	55.3	0.6	26.2	937.0	75			75
6/14/2021 2:00 PM	55.3	0.6	26.2	937.0	75			75
6/14/2021 3:00 PM	55.3	0.6	26.2	937.0	75			75
6/14/2021 4:00 PM	55.3	0.6	26.2	937.0	75			75
6/14/2021 5:00 PM	55.3	0.6	26.2	937.0	75			75
6/14/2021 6:00 PM	55.3	0.6	26.2	937.0	75			75
6/14/2021 7:00 PM	55.3	0.6	26.2	937.0	75			75
6/14/2021 8:00 PM	56.0	0.6	26.6	949.4	76			76
6/14/2021 9:00 PM	56.0	0.6	26.6	949.4	76			76
6/14/2021 10:00 PM	3.2	0.0	37.8	54.0	4	1	11	12
6/21/2021 11:00 AM	18.0	0.2	8.6	305.8	24			34
6/21/2021 12:00 PM	53.8	0.5	25.5	912.0	73			73
6/21/2021 1:00 PM	53.8	0.5	25.5	912.0	73			73
6/21/2021 2:00 PM	50.9	0.5	24.1	862.0	69			69
6/21/2021 3:00 PM	53.1	0.5	25.2	899.5	72			72
6/21/2021 4:00 PM	46.4	0.5	22.0	787.0	63			63
6/21/2021 5:00 PM	45.7	0.5	21.7	774.6	62			62
6/21/2021 6:00 PM	20.4	0.2	9.7	346.3	28	1	8	36
6/24/2021 6:00 PM	39.1	0.4	21.2	662.1	53			53
6/24/2021 7:00 PM	44.2	0.4	24.0	749.6	60			60
6/24/2021 8:00 PM	10.4	0.1	5.7	176.9	14	1	3	24
6/28/2021 11:00 AM	3.5	0.0	42.0	60.0	5			12
6/28/2021 12:00 PM	50.9	0.5	27.6	862.0	69			69
6/28/2021 1:00 PM	54.5	0.6	29.6	924.5	74			74
6/28/2021 2:00 PM	53.1	0.5	28.8	899.5	72			72
6/28/2021 3:00 PM	53.8	0.5	29.2	912.0	73			73
6/28/2021 4:00 PM	50.1	0.5	27.2	849.5	68			68
6/28/2021 5:00 PM	55.3	0.6	30.0	937.0	75			75
6/28/2021 6:00 PM	54.5	0.6	29.6	924.5	74			74
6/28/2021 7:00 PM	54.5	0.6	29.6	924.5	74			74
6/28/2021 8:00 PM	44.2	0.4	24.0	749.6	60			60
6/28/2021 9:00 PM	45.0	0.5	24.4	762.1	61			61
6/28/2021 10:00 PM	1.3	0.0	15.2	21.7	2	1	12	6
6/29/2021 10:00 AM	6.6	0.1	3.6	112.4	9			18
6/29/2021 11:00 AM	45.7	0.5	24.8	774.6	62			62
6/29/2021 12:00 PM	55.3	0.6	30.0	937.0	75			75
6/29/2021 1:00 PM	55.3	0.6	30.0	937.0	75			75



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Periods From: 01/01/2021 To: 12/31/2021

Date and Time	CO2 Emissions (tons)	SO2 Emissions (lbs)	NOx Emissions (lbs)	Heat Input (MMBtu)	Gross Generation (MWh)	Column F-Number	Hours In Duration	Gross Unit Load During
6/29/2021 2:00 PM	47.2	0.5	25.6	799.5	64			64
6/29/2021 3:00 PM	47.9	0.5	26.0	812.0	65			65
6/29/2021 4:00 PM	49.4	0.5	26.8	837.0	67			67
6/29/2021 5:00 PM	48.6	0.5	26.4	824.5	66			66
6/29/2021 6:00 PM	45.0	0.5	24.4	762.1	61			61
6/29/2021 7:00 PM	45.0	0.5	24.4	762.1	61			61
6/29/2021 8:00 PM	29.2	0.3	15.8	494.7	40	1	11	44
7/1/2021 2:00 PM	34.9	0.4	18.9	591.5	47			52
7/1/2021 3:00 PM	55.9	0.6	30.3	947.9	75			75
7/1/2021 4:00 PM	56.7	0.6	30.7	960.6	76			76
7/1/2021 5:00 PM	56.7	0.6	30.7	960.6	76			76
7/1/2021 6:00 PM	55.9	0.6	30.3	947.9	75			75
7/1/2021 7:00 PM	44.7	0.5	24.3	758.3	60	1	6	60
7/5/2021 3:00 PM	51.5	0.5	27.9	872.1	69			69
7/5/2021 4:00 PM	52.2	0.5	28.3	884.7	70			70
7/5/2021 5:00 PM	55.2	0.6	29.9	935.3	74			74
7/5/2021 6:00 PM	53.7	0.5	29.1	910.0	72			72
7/5/2021 7:00 PM	44.7	0.5	24.3	758.3	60			60
7/5/2021 8:00 PM	44.7	0.5	24.3	758.3	60			60
7/5/2021 9:00 PM	30.2	0.3	16.4	511.6	40	1	7	44
7/6/2021 11:00 AM	17.0	0.2	9.2	287.8	23			33
7/6/2021 12:00 PM	45.5	0.5	24.7	771.0	61			61
7/6/2021 1:00 PM	45.5	0.5	24.7	771.0	61			61
7/6/2021 2:00 PM	45.5	0.5	24.7	771.0	61			61
7/6/2021 3:00 PM	45.5	0.5	24.7	771.0	61			61
7/6/2021 4:00 PM	44.7	0.5	24.3	758.3	60			60
7/6/2021 5:00 PM	46.2	0.5	25.1	783.6	62			62
7/6/2021 6:00 PM	45.5	0.5	24.7	771.0	61			61
7/6/2021 7:00 PM	45.5	0.5	24.7	771.0	61			61
7/6/2021 8:00 PM	55.2	0.6	29.9	935.3	74			74
7/6/2021 9:00 PM	56.7	0.6	30.7	960.6	76			76
7/6/2021 10:00 PM	56.7	0.6	30.7	960.6	76			76
7/6/2021 11:00 PM	22.6	0.2	12.3	383.5	30	1	13	41
7/7/2021 12:00 PM	29.2	0.3	15.8	494.6	39			43
7/7/2021 1:00 PM	50.7	0.5	27.5	859.5	68			68
7/7/2021 2:00 PM	45.5	0.5	24.7	771.0	61			61
7/7/2021 3:00 PM	45.5	0.5	24.7	771.0	61			61
7/7/2021 4:00 PM	45.5	0.5	24.7	771.0	61			61
7/7/2021 5:00 PM	45.5	0.5	24.7	771.0	61			61
7/7/2021 6:00 PM	45.5	0.5	24.7	771.0	61			61
7/7/2021 7:00 PM	3.9	0.0	46.0	65.7	5	1	8	13
7/12/2021 4:00 PM	31.5	0.3	17.1	534.6	42			45
7/12/2021 5:00 PM	45.5	0.5	24.7	771.0	61			61
7/12/2021 6:00 PM	30.9	0.3	16.7	523.3	41	1	3	45
7/14/2021 2:00 PM	38.8	0.4	21.0	657.2	52			52
7/14/2021 3:00 PM	45.5	0.5	24.7	771.0	61			61
7/14/2021 4:00 PM	44.7	0.5	24.3	758.3	60			60
7/14/2021 5:00 PM	45.5	0.5	24.7	771.0	61			61
7/14/2021 6:00 PM	10.4	0.1	5.6	175.9	14	1	5	24
7/20/2021 5:00 PM	32.2	0.3	17.5	546.5	43			47
7/20/2021 6:00 PM	47.7	0.5	25.9	808.9	64			64
7/20/2021 7:00 PM	11.0	0.1	6.0	186.4	15	1	3	25



Ceredo | Unit Hourly Operations (Data)

Periods From: 01/01/2021 To: 12/31/2021

Date and Time	CO2 Emissions (tons)	SO2 Emissions (lbs)	NOx Emissions (lbs)	Heat Input (MMBtu)	Gross Generation (MWh)	Column F-Number	Hours In Duration	Gross Unit Load During
7/26/2021 11:00 AM	1.6	0.0	19.2	27.4	2			7
7/26/2021 12:00 PM	45.5	0.5	24.7	771.0	61			61
7/26/2021 1:00 PM	48.5	0.5	26.3	821.5	65			65
7/26/2021 2:00 PM	50.0	0.5	27.1	846.8	67			67
7/26/2021 3:00 PM	51.5	0.5	27.9	872.1	69			69
7/26/2021 4:00 PM	52.9	0.5	28.7	897.4	71			71
7/26/2021 5:00 PM	49.2	0.5	26.7	834.2	66			66
7/26/2021 6:00 PM	45.5	0.5	24.7	771.0	61			61
7/26/2021 7:00 PM	45.5	0.5	24.7	771.0	61			61
7/26/2021 8:00 PM	38.0	0.4	20.6	644.6	51	1	10	51
7/27/2021 12:00 PM	36.5	0.4	19.8	619.3	49			49
7/27/2021 1:00 PM	44.7	0.5	24.3	758.3	60			60
7/27/2021 2:00 PM	45.5	0.5	24.7	771.0	61			61
7/27/2021 3:00 PM	45.5	0.5	24.7	771.0	61			61
7/27/2021 4:00 PM	50.0	0.5	27.1	846.8	67			67
7/27/2021 5:00 PM	52.9	0.5	28.7	897.4	71			71
7/27/2021 6:00 PM	45.5	0.5	24.7	771.0	61			61
7/27/2021 7:00 PM	24.8	0.3	13.4	419.6	33	1	8	40
7/28/2021 11:00 AM	10.2	0.1	5.5	172.9	14			24
7/28/2021 12:00 PM	56.7	0.6	30.7	960.6	76			76
7/28/2021 1:00 PM	55.9	0.6	30.3	947.9	75			75
7/28/2021 2:00 PM	55.9	0.6	30.3	947.9	75			75
7/28/2021 3:00 PM	52.9	0.5	28.7	897.4	71			71
7/28/2021 4:00 PM	55.9	0.6	30.3	947.9	75			75
7/28/2021 5:00 PM	55.9	0.6	30.3	947.9	75			75
7/28/2021 6:00 PM	55.9	0.6	30.3	947.9	75			75
7/28/2021 7:00 PM	55.9	0.6	30.3	947.9	75			75
7/28/2021 8:00 PM	55.9	0.6	30.3	947.9	75			75
7/28/2021 9:00 PM	50.7	0.5	27.5	859.5	68	1	11	68
7/29/2021 1:00 PM	26.9	0.3	14.6	456.0	36			44
7/29/2021 2:00 PM	55.2	0.6	29.9	935.3	74			74
7/29/2021 3:00 PM	55.2	0.6	29.9	935.3	74			74
7/29/2021 4:00 PM	55.2	0.6	29.9	935.3	74			74
7/29/2021 5:00 PM	55.2	0.6	29.9	935.3	74			74
7/29/2021 6:00 PM	55.2	0.6	29.9	935.3	74			74
7/29/2021 7:00 PM	55.2	0.6	29.9	935.3	74			74
7/29/2021 8:00 PM	55.9	0.6	30.3	947.9	75			75
7/29/2021 9:00 PM	56.7	0.6	30.7	960.6	76			76
7/29/2021 10:00 PM	53.7	0.5	29.1	910.0	72			72
7/29/2021 11:00 PM	19.6	0.2	10.6	332.0	26	1	11	37
7/30/2021 8:00 AM	4.7	0.0	55.7	79.6	6			15
7/30/2021 9:00 AM	55.9	0.6	30.3	947.9	75			75
7/30/2021 10:00 AM	55.9	0.6	30.3	947.9	75			75
7/30/2021 11:00 AM	55.9	0.6	30.3	947.9	75			75
7/30/2021 12:00 PM	55.9	0.6	30.3	947.9	75			75
7/30/2021 1:00 PM	55.9	0.6	30.3	947.9	75			75
7/30/2021 2:00 PM	55.9	0.6	30.3	947.9	75			75
7/30/2021 3:00 PM	56.7	0.6	30.7	960.6	76			76
7/30/2021 4:00 PM	56.7	0.6	30.7	960.6	76			76
7/30/2021 5:00 PM	55.9	0.6	30.3	947.9	75			75
7/30/2021 6:00 PM	56.7	0.6	30.7	960.6	76			76
7/30/2021 7:00 PM	52.9	0.5	28.7	897.4	71	1	12	71
8/3/2021 4:00 PM	20.7	0.2	11.2	350.6	28			38



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Date and Time	CO2 Emissions (tons)	SO2 Emissions (lbs)	NOx Emissions (lbs)	Heat Input (MMBtu)	Gross Generation (MWh)	Column F-Number	Hours In Duration	Gross Unit Load During
8/3/2021 5:00 PM	55.2	0.6	29.9	935.3	74			74
8/3/2021 6:00 PM	24.1	0.2	13.1	409.1	32	1	3	39
8/5/2021 3:00 PM	14.7	0.1	8.0	249.2	20			29
8/5/2021 4:00 PM	50.7	0.5	27.5	859.5	68			68
8/5/2021 5:00 PM	52.2	0.5	28.3	884.7	70			70
8/5/2021 6:00 PM	54.4	0.6	29.5	922.7	73			73
8/5/2021 7:00 PM	3.4	0.0	40.3	57.6	5	1	5	12
8/6/2021 1:00 PM	2.3	0.0	27.1	38.7	3			9
8/6/2021 2:00 PM	45.5	0.5	24.7	771.0	61			61
8/6/2021 3:00 PM	45.5	0.5	539.7	771.0	61			61
8/6/2021 4:00 PM	49.2	0.5	26.7	834.2	66			66
8/6/2021 5:00 PM	48.5	0.5	26.3	821.5	65			65
8/6/2021 6:00 PM	40.3	0.4	21.8	682.5	54	1	6	54
8/14/2021 3:00 PM	0.8	0.0	9.6	13.7	1			4
8/14/2021 4:00 PM	46.2	0.5	25.1	783.6	62			62
8/14/2021 5:00 PM	46.2	0.5	25.1	783.6	62			62
8/14/2021 6:00 PM	15.0	0.2	8.1	254.0	20	1	4	30
8/17/2021 4:00 PM	36.5	0.4	19.8	619.3	49			49
8/17/2021 5:00 PM	44.7	0.5	24.3	758.3	60			60
8/17/2021 6:00 PM	44.7	0.5	24.3	758.3	60			60
8/17/2021 7:00 PM	44.7	0.5	24.3	758.3	60			60
8/17/2021 8:00 PM	3.1	0.0	37.0	52.8	4	1	5	11
8/18/2021 12:00 PM	39.9	0.4	21.6	675.7	53			54
8/18/2021 1:00 PM	48.5	0.5	26.3	821.5	65			65
8/18/2021 2:00 PM	45.5	0.5	24.7	771.0	61			61
8/18/2021 3:00 PM	50.0	0.5	27.1	846.8	67			67
8/18/2021 4:00 PM	53.7	0.5	29.1	910.0	72			72
8/18/2021 5:00 PM	52.2	0.5	28.3	884.7	70			70
8/18/2021 6:00 PM	46.2	0.5	25.1	783.6	62			62
8/18/2021 7:00 PM	45.5	0.5	24.7	771.0	61			61
8/18/2021 8:00 PM	45.5	0.5	24.7	771.0	61			61
8/18/2021 9:00 PM	4.0	0.0	47.2	67.4	5	1	10	13
8/19/2021 1:00 PM	46.2	0.5	25.1	783.6	62			62
8/19/2021 2:00 PM	46.2	0.5	25.1	783.6	62			62
8/19/2021 3:00 PM	54.4	0.6	29.5	922.7	73			73
8/19/2021 4:00 PM	50.7	0.5	27.5	859.5	68			68
8/19/2021 5:00 PM	56.7	0.6	30.7	960.6	76			76
8/19/2021 6:00 PM	51.5	0.5	27.9	872.1	69			69
8/19/2021 7:00 PM	45.5	0.5	24.7	771.0	61			61
8/19/2021 8:00 PM	45.5	0.5	24.7	771.0	61			61
8/19/2021 9:00 PM	11.2	0.1	6.1	189.6	15	1	9	25
8/20/2021 11:00 AM	3.6	0.0	42.5	60.7	5			12
8/20/2021 12:00 PM	44.7	0.5	24.3	758.3	60			60
8/20/2021 1:00 PM	44.7	0.5	24.3	758.3	60			60
8/20/2021 2:00 PM	50.7	0.5	27.5	859.5	68			68
8/20/2021 3:00 PM	56.7	0.6	30.7	960.6	76			76
8/20/2021 4:00 PM	55.9	0.6	30.3	947.9	75			75
8/20/2021 5:00 PM	8.1	0.1	4.4	136.5	11			20
8/20/2021 6:00 PM	41.0	0.4	486.6	695.1	55			55
8/20/2021 7:00 PM	45.5	0.5	539.7	771.0	61			61
8/20/2021 8:00 PM	45.5	0.5	24.7	771.0	61			61
8/20/2021 9:00 PM	13.8	0.1	7.5	234.6	19	1	11	29



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Date and Time	CO2 Emissions (tons)	SO2 Emissions (lbs)	NOx Emissions (lbs)	Heat Input (MMBtu)	Gross Generation (MWh)	Column F-Number	Hours In Duration	Gross Unit Load During
8/22/2021 4:00 PM	38.4	0.4	20.8	650.7	51			52
8/22/2021 5:00 PM	55.2	0.6	29.9	935.3	74			74
8/22/2021 6:00 PM	55.2	0.6	29.9	935.3	74			74
8/22/2021 7:00 PM	55.2	0.6	29.9	935.3	74			74
8/22/2021 8:00 PM	55.2	0.6	29.9	935.3	74			74
8/22/2021 9:00 PM	0.5	0.0	6.1	8.7	1	1	6	3
8/23/2021 12:00 PM	52.2	0.5	28.3	884.7	70			70
8/23/2021 1:00 PM	55.2	0.6	29.9	935.3	74			74
8/23/2021 2:00 PM	55.2	0.6	29.9	935.3	74			74
8/23/2021 3:00 PM	55.2	0.6	29.9	935.3	74			74
8/23/2021 4:00 PM	55.2	0.6	29.9	935.3	74			74
8/23/2021 5:00 PM	55.2	0.6	29.9	935.3	74			74
8/23/2021 6:00 PM	55.2	0.6	29.9	935.3	74			74
8/23/2021 7:00 PM	55.2	0.6	29.9	935.3	74			74
8/23/2021 8:00 PM	55.2	0.6	29.9	935.3	74			74
8/23/2021 9:00 PM	55.9	0.6	30.3	947.9	75			75
8/23/2021 10:00 PM	55.9	0.6	30.3	947.9	75			75
8/23/2021 11:00 PM	53.7	0.5	29.1	910.0	72			72
8/24/2021 12:00 AM	10.4	0.1	5.6	175.9	14	1	13	24
8/24/2021 1:00 PM	34.3	0.3	18.6	581.4	46			50
8/24/2021 2:00 PM	52.9	0.5	28.7	897.4	71			71
8/24/2021 3:00 PM	54.4	0.6	29.5	922.7	73			73
8/24/2021 4:00 PM	54.4	0.6	29.5	922.7	73			73
8/24/2021 5:00 PM	54.4	0.6	29.5	922.7	73			73
8/24/2021 6:00 PM	54.4	0.6	29.5	922.7	73			73
8/24/2021 7:00 PM	40.8	0.4	22.1	691.6	55	1	7	57
8/25/2021 1:00 PM	48.5	0.5	26.3	821.5	65			65
8/25/2021 2:00 PM	50.0	0.5	27.1	846.8	67			67
8/25/2021 3:00 PM	45.5	0.5	24.7	771.0	61			61
8/25/2021 4:00 PM	49.2	0.5	26.7	834.2	66			66
8/25/2021 5:00 PM	47.0	0.5	25.5	796.3	63			63
8/25/2021 6:00 PM	44.7	0.5	24.3	758.3	60			60
8/25/2021 7:00 PM	25.7	0.3	13.9	435.3	34	1	7	41
8/26/2021 12:00 PM	1.7	0.0	20.4	29.2	2			7
8/26/2021 1:00 PM	46.2	0.5	25.1	783.6	62			62
8/26/2021 2:00 PM	51.5	0.5	27.9	872.1	69			69
8/26/2021 3:00 PM	55.2	0.6	29.9	935.3	74			74
8/26/2021 4:00 PM	55.2	0.6	29.9	935.3	74			74
8/26/2021 5:00 PM	55.2	0.6	29.9	935.3	74			74
8/26/2021 6:00 PM	48.5	0.5	26.3	821.5	65			65
8/26/2021 7:00 PM	0.5	0.0	5.8	8.3	1	1	8	3
8/27/2021 12:00 PM	5.7	0.1	68.0	97.1	8			16
8/27/2021 1:00 PM	46.2	0.5	25.1	783.6	62			62
8/27/2021 2:00 PM	53.7	0.5	29.1	910.0	72			72
8/27/2021 3:00 PM	49.2	0.5	26.7	834.2	66			66
8/27/2021 4:00 PM	50.7	0.5	27.5	859.5	68			68
8/27/2021 5:00 PM	47.0	0.5	25.5	796.3	63	1	6	63
8/27/2021 6:00 PM	5.8	0.1	69.2	98.8	8			17
8/28/2021 12:00 PM	9.5	0.1	5.2	161.3	13			22
8/28/2021 1:00 PM	50.0	0.5	27.1	846.8	67			67
8/28/2021 2:00 PM	49.2	0.5	26.7	834.2	66			66
8/28/2021 3:00 PM	52.2	0.5	28.3	884.7	70			70



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Date and Time	CO2 Emissions (tons)	SO2 Emissions (lbs)	NOx Emissions (lbs)	Heat Input (MMBtu)	Gross Generation (MWh)	Column F-Number	Hours In Duration	Gross Unit Load During
8/28/2021 4:00 PM	55.2	0.6	29.9	935.3	74			74
8/28/2021 5:00 PM	55.2	0.6	29.9	935.3	74			74
8/28/2021 6:00 PM	55.2	0.6	29.9	935.3	74			74
8/28/2021 7:00 PM	55.2	0.6	29.9	935.3	74			74
8/28/2021 8:00 PM	55.9	0.6	30.3	947.9	75			75
8/28/2021 9:00 PM	26.8	0.3	14.6	455.0	36	1	10	45
8/29/2021 12:00 PM	41.0	0.4	22.2	695.1	55			55
8/29/2021 1:00 PM	55.2	0.6	29.9	935.3	74			74
8/29/2021 2:00 PM	55.2	0.6	29.9	935.3	74			74
8/29/2021 3:00 PM	55.2	0.6	29.9	935.3	74			74
8/29/2021 4:00 PM	55.2	0.6	29.9	935.3	74			74
8/29/2021 5:00 PM	55.2	0.6	29.9	935.3	74			74
8/29/2021 6:00 PM	55.2	0.6	29.9	935.3	74			74
8/29/2021 7:00 PM	55.9	0.6	30.3	947.9	75			75
8/29/2021 8:00 PM	55.9	0.6	30.3	947.9	75			75
8/29/2021 9:00 PM	26.5	0.3	14.4	449.3	36	1	10	45
8/30/2021 4:00 PM	41.0	0.4	22.2	695.1	55			55
8/30/2021 5:00 PM	46.2	0.5	25.1	783.6	62			62
8/30/2021 6:00 PM	4.1	0.0	48.3	69.0	5	1	3	14
9/8/2021 3:00 PM	2.0	0.0	24.1	34.4	3			8
9/8/2021 4:00 PM	52.9	0.5	28.7	897.4	71			71
9/8/2021 5:00 PM	56.7	0.6	672.4	960.6	76			76
9/8/2021 6:00 PM	49.2	0.5	26.7	834.2	66			66
9/8/2021 7:00 PM	47.0	0.5	25.5	796.3	63			63
9/8/2021 8:00 PM	40.3	0.4	21.8	682.5	54	1	6	54
9/13/2021 2:00 PM	0.9	0.0	10.3	14.7	1			4
9/13/2021 3:00 PM	55.9	0.6	30.3	947.9	75			75
9/13/2021 4:00 PM	52.9	0.5	28.7	897.4	71			71
9/13/2021 5:00 PM	53.7	0.5	29.1	910.0	72			72
9/13/2021 6:00 PM	15.3	0.2	8.3	258.6	20	1	5	31
9/14/2021 3:00 PM	42.5	0.4	23.1	720.4	57			57
9/14/2021 4:00 PM	55.9	0.6	30.3	947.9	75			75
9/14/2021 5:00 PM	55.9	0.6	30.3	947.9	75			75
9/14/2021 6:00 PM	47.7	0.5	25.9	808.9	64	1	4	64
9/28/2021 4:00 PM	55.2	0.6	29.9	935.3	74			74
9/28/2021 5:00 PM	55.9	0.6	30.3	947.9	75			75
9/28/2021 6:00 PM	56.7	0.6	30.7	960.6	76			76
9/28/2021 7:00 PM	56.7	0.6	30.7	960.6	76			76
9/28/2021 8:00 PM	47.0	0.5	25.5	796.3	63	1	5	63
9/29/2021 2:00 PM	1.7	0.0	20.4	29.2	2			7
9/29/2021 3:00 PM	56.7	0.6	30.7	960.6	76			76
9/29/2021 4:00 PM	56.7	0.6	30.7	960.6	76			76
9/29/2021 5:00 PM	57.4	0.6	31.1	973.2	77			77
9/29/2021 6:00 PM	57.4	0.6	31.1	973.2	77			77
9/29/2021 7:00 PM	58.2	0.6	31.5	985.8	78			78
9/29/2021 8:00 PM	3.1	0.0	37.2	53.1	4	1	7	12
10/2/2021 4:00 PM	10.5	0.1	5.7	177.9	14			24
10/2/2021 5:00 PM	47.4	0.5	25.7	803.2	65			65
10/2/2021 6:00 PM	44.5	0.5	24.1	753.7	61			61
10/2/2021 7:00 PM	44.5	0.5	24.1	753.7	61			61
10/2/2021 8:00 PM	8.0	0.1	4.3	134.9	11	1	5	21



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Date and Time	CO2 Emissions (tons)	SO2 Emissions (lbs)	NOx Emissions (lbs)	Heat Input (MMBtu)	Gross Generation (MWh)	Column F-Number	Hours In Duration	Gross Unit Load During
10/3/2021 11:00 AM	13.1	0.1	7.1	222.2	18			29
10/3/2021 12:00 PM	55.4	0.6	30.1	939.1	76			76
10/3/2021 1:00 PM	54.7	0.6	29.7	926.7	75			75
10/3/2021 2:00 PM	19.2	0.2	10.4	324.7	26	1	4	36
10/4/2021 5:00 AM	17.4	0.2	9.4	294.1	24			35
10/4/2021 6:00 AM	56.1	0.6	30.4	951.4	77			77
10/4/2021 7:00 AM	56.1	0.6	30.4	951.4	77			77
10/4/2021 8:00 AM	56.1	0.6	30.4	951.4	77			77
10/4/2021 9:00 AM	55.4	0.6	30.1	939.1	76			76
10/4/2021 10:00 AM	56.1	0.6	30.4	951.4	77			77
10/4/2021 11:00 AM	56.1	0.6	30.4	951.4	77			77
10/4/2021 12:00 PM	56.1	0.6	30.4	951.4	77			77
10/4/2021 1:00 PM	55.4	0.6	30.1	939.1	76			76
10/4/2021 2:00 PM	55.4	0.6	30.1	939.1	76			76
10/4/2021 3:00 PM	55.4	0.6	30.1	939.1	76			76
10/4/2021 4:00 PM	55.4	0.6	30.1	939.1	76			76
10/4/2021 5:00 PM	55.4	0.6	30.1	939.1	76			76
10/4/2021 6:00 PM	56.1	0.6	30.4	951.4	77			77
10/4/2021 7:00 PM	56.1	0.6	30.4	951.4	77			77
10/4/2021 8:00 PM	56.1	0.6	30.4	951.4	77			77
10/4/2021 9:00 PM	56.9	0.6	30.8	963.8	78			78
10/4/2021 10:00 PM	21.5	0.2	11.7	364.8	30	1	18	41
10/5/2021 6:00 AM	12.9	0.1	7.0	218.6	18			29
10/5/2021 7:00 AM	57.6	0.6	31.2	976.2	79			79
10/5/2021 8:00 AM	57.6	0.6	31.2	976.2	79			79
10/5/2021 9:00 AM	48.1	0.5	26.1	815.5	66	1	4	66
10/5/2021 12:00 PM	53.9	0.5	29.3	914.4	74			74
10/5/2021 1:00 PM	56.1	0.6	30.4	951.4	77			77
10/5/2021 2:00 PM	56.1	0.6	30.4	951.4	77			77
10/5/2021 3:00 PM	56.1	0.6	30.4	951.4	77			77
10/5/2021 4:00 PM	56.1	0.6	30.4	951.4	77			77
10/5/2021 5:00 PM	56.1	0.6	30.4	951.4	77			77
10/5/2021 6:00 PM	55.4	0.6	30.1	939.1	76			76
10/5/2021 7:00 PM	49.6	0.5	26.9	840.2	68			68
10/5/2021 8:00 PM	55.4	0.6	30.1	939.1	76			76
10/5/2021 9:00 PM	28.7	0.3	15.6	486.3	39	1	10	48
10/6/2021 5:00 AM	1.7	0.0	20.0	28.5	2			7
10/6/2021 6:00 AM	56.9	0.6	30.8	963.8	78			78
10/6/2021 7:00 AM	56.1	0.6	30.4	951.4	77			77
10/6/2021 8:00 AM	56.1	0.6	30.4	951.4	77			77
10/6/2021 9:00 AM	56.1	0.6	30.4	951.4	77			77
10/6/2021 10:00 AM	56.1	0.6	30.4	951.4	77			77
10/6/2021 11:00 AM	56.1	0.6	30.4	951.4	77			77
10/6/2021 12:00 PM	56.1	0.6	30.4	951.4	77			77
10/6/2021 1:00 PM	56.1	0.6	30.4	951.4	77			77
10/6/2021 2:00 PM	56.1	0.6	30.4	951.4	77			77
10/6/2021 3:00 PM	56.1	0.6	30.4	951.4	77			77
10/6/2021 4:00 PM	55.4	0.6	30.1	939.1	76			76
10/6/2021 5:00 PM	55.4	0.6	30.1	939.1	76			76
10/6/2021 6:00 PM	55.4	0.6	30.1	939.1	76			76
10/6/2021 7:00 PM	56.1	0.6	30.4	951.4	77			77
10/6/2021 8:00 PM	56.1	0.6	30.4	951.4	77			77
10/6/2021 9:00 PM	4.3	0.0	50.6	72.3	6	1	17	15



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Date and Time	CO2 Emissions (tons)	SO2 Emissions (lbs)	NOx Emissions (lbs)	Heat Input (MMBtu)	Gross Generation (MWh)	Column F-Number	Hours In Duration	Gross Unit Load During
10/7/2021 7:00 AM	3.8	0.0	45.0	64.3	5			13
10/7/2021 8:00 AM	56.9	0.6	30.8	963.8	78			78
10/7/2021 9:00 AM	56.1	0.6	30.4	951.4	77			77
10/7/2021 10:00 AM	56.1	0.6	30.4	951.4	77			77
10/7/2021 11:00 AM	56.1	0.6	30.4	951.4	77			77
10/7/2021 12:00 PM	56.1	0.6	30.4	951.4	77			77
10/7/2021 1:00 PM	56.1	0.6	30.4	951.4	77			77
10/7/2021 2:00 PM	56.1	0.6	30.4	951.4	77			77
10/7/2021 3:00 PM	56.1	0.6	30.4	951.4	77			77
10/7/2021 4:00 PM	56.1	0.6	30.4	951.4	77			77
10/7/2021 5:00 PM	56.1	0.6	30.4	951.4	77			77
10/7/2021 6:00 PM	56.1	0.6	30.4	951.4	77			77
10/7/2021 7:00 PM	56.1	0.6	30.4	951.4	77			77
10/7/2021 8:00 PM	56.1	0.6	30.4	951.4	77			77
10/7/2021 9:00 PM	0.5	0.0	6.0	8.5	1	1	15	3
10/8/2021 6:00 AM	12.9	0.1	7.0	218.6	18			29
10/8/2021 7:00 AM	56.9	0.6	30.8	963.8	78			78
10/8/2021 8:00 AM	56.9	0.6	30.8	963.8	78			78
10/8/2021 9:00 AM	56.9	0.6	30.8	963.8	78			78
10/8/2021 10:00 AM	56.1	0.6	30.4	951.4	77			77
10/8/2021 11:00 AM	55.4	0.6	30.1	939.1	76			76
10/8/2021 12:00 PM	55.4	0.6	30.1	939.1	76			76
10/8/2021 1:00 PM	56.1	0.6	30.4	951.4	77			77
10/8/2021 2:00 PM	56.1	0.6	30.4	951.4	77			77
10/8/2021 3:00 PM	56.1	0.6	30.4	951.4	77			77
10/8/2021 4:00 PM	56.1	0.6	30.4	951.4	77			77
10/8/2021 5:00 PM	56.1	0.6	30.4	951.4	77			77
10/8/2021 6:00 PM	56.1	0.6	30.4	951.4	77			77
10/8/2021 7:00 PM	56.9	0.6	30.8	963.8	78			78
10/8/2021 8:00 PM	17.3	0.2	9.4	293.6	24	1	15	36
10/9/2021 2:00 PM	3.4	0.0	40.5	57.8	5			12
10/9/2021 3:00 PM	56.1	0.6	30.4	951.4	77			77
10/9/2021 4:00 PM	56.1	0.6	30.4	951.4	77			77
10/9/2021 5:00 PM	48.1	0.5	26.1	815.5	66			66
10/9/2021 6:00 PM	45.2	0.5	24.5	766.1	62			62
10/9/2021 7:00 PM	39.4	0.4	21.4	667.2	54	1	6	54
10/10/2021 12:00 PM	45.9	0.5	24.9	778.5	63			63
10/10/2021 1:00 PM	44.5	0.5	24.1	753.7	61			61
10/10/2021 2:00 PM	44.5	0.5	24.1	753.7	61			61
10/10/2021 3:00 PM	44.5	0.5	24.1	753.7	61			61
10/10/2021 4:00 PM	45.9	0.5	24.9	778.5	63			63
10/10/2021 5:00 PM	50.3	0.5	27.3	852.6	69			69
10/10/2021 6:00 PM	53.9	0.5	29.3	914.4	74			74
10/10/2021 7:00 PM	44.5	0.5	24.1	753.7	61			61
10/10/2021 8:00 PM	4.7	0.0	55.8	79.7	6	1	9	15
10/11/2021 1:00 PM	3.1	0.0	37.1	53.0	4			11
10/11/2021 2:00 PM	50.3	0.5	27.3	852.6	69			69
10/11/2021 3:00 PM	46.7	0.5	25.3	790.8	64			64
10/11/2021 4:00 PM	44.5	0.5	24.1	753.7	61			61
10/11/2021 5:00 PM	51.0	0.5	27.7	864.9	70			70
10/11/2021 6:00 PM	45.2	0.5	24.5	766.1	62			62
10/11/2021 7:00 PM	44.5	0.5	24.1	753.7	61			61
10/11/2021 8:00 PM	2.8	0.0	33.3	47.6	4	1	8	11
10/12/2021 6:00 AM	1.4	0.0	16.6	23.7	2			6



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Date and Time	CO2 Emissions (tons)	SO2 Emissions (lbs)	NOx Emissions (lbs)	Heat Input (MMBtu)	Gross Generation (MWh)	Column F-Number	Hours In Duration	Gross Unit Load During
10/12/2021 7:00 AM	51.8	0.5	28.1	877.3	71			71
10/12/2021 8:00 AM	45.9	0.5	24.9	778.5	63	1	3	63
10/12/2021 3:00 PM	29.9	0.3	16.2	506.0	41			45
10/12/2021 4:00 PM	47.4	0.5	25.7	803.2	65			65
10/12/2021 5:00 PM	48.1	0.5	26.1	815.5	66			66
10/12/2021 6:00 PM	52.5	0.5	28.5	889.7	72			72
10/12/2021 7:00 PM	52.5	0.5	28.5	889.7	72			72
10/12/2021 8:00 PM	6.0	0.1	71.6	102.3	8	1	6	18
10/14/2021 3:00 PM	34.2	0.3	18.6	579.8	47			51
10/14/2021 4:00 PM	54.7	0.6	29.7	926.7	75			75
10/14/2021 5:00 PM	54.7	0.6	29.7	926.7	75			75
10/14/2021 6:00 PM	48.8	0.5	26.5	827.9	67			67
10/14/2021 7:00 PM	43.7	0.4	23.7	741.4	60			60
10/14/2021 8:00 PM	0.5	0.0	5.7	8.2	1	1	6	3
10/15/2021 2:00 PM	31.2	0.3	16.9	528.5	43			47
10/15/2021 3:00 PM	52.5	0.5	28.5	889.7	72			72
10/15/2021 4:00 PM	48.8	0.5	26.5	827.9	67			67
10/15/2021 5:00 PM	10.2	0.1	5.6	173.5	14	1	4	26
10/30/2021 6:00 PM	1.1	0.0	12.5	17.9	1			5
10/30/2021 7:00 PM	47.4	0.5	25.7	803.2	65			65
10/30/2021 8:00 PM	46.7	0.5	25.3	790.8	64	1	3	64
11/1/2021 7:00 AM	28.7	0.3	15.6	486.3	39			48
11/1/2021 8:00 AM	60.5	0.6	32.8	1,025.6	83			83
11/1/2021 9:00 AM	38.1	0.4	20.6	645.0	52	1	3	58
11/1/2021 6:00 PM	12.7	0.1	6.9	215.0	17			29
11/1/2021 7:00 PM	60.5	0.6	32.8	1,025.6	83			83
11/1/2021 8:00 PM	47.6	0.5	25.8	807.4	65	1	3	66
11/2/2021 7:00 AM	58.3	0.6	31.6	988.5	80			80
11/2/2021 8:00 AM	61.2	0.6	33.2	1,037.9	84			84
11/2/2021 9:00 AM	61.2	0.6	33.2	1,037.9	84			84
11/2/2021 10:00 AM	3.1	0.0	36.3	51.9	4	1	4	12
11/2/2021 5:00 PM	56.1	0.6	30.4	951.4	77			77
11/2/2021 6:00 PM	60.5	0.6	32.8	1,025.6	83			83
11/2/2021 7:00 PM	59.8	0.6	32.4	1,013.2	82	1	3	82
11/3/2021 5:00 AM	7.0	0.1	83.0	118.6	10			20
11/3/2021 6:00 AM	64.2	0.7	34.8	1,087.4	88			88
11/3/2021 7:00 AM	64.2	0.7	34.8	1,087.4	88			88
11/3/2021 8:00 AM	64.2	0.7	34.8	1,087.4	88			88
11/3/2021 9:00 AM	62.0	0.6	33.6	1,050.3	85	1	5	85
11/4/2021 6:00 AM	19.6	0.2	10.6	332.5	27			39
11/4/2021 7:00 AM	64.9	0.7	35.2	1,099.7	89			89
11/4/2021 8:00 AM	64.9	0.7	35.2	1,099.7	89			89
11/4/2021 9:00 AM	64.2	0.7	34.8	1,087.4	88			88
11/4/2021 10:00 AM	63.4	0.6	34.4	1,075.0	87			87
11/4/2021 11:00 AM	15.6	0.2	8.4	263.8	21	1	6	35
11/4/2021 6:00 PM	51.0	0.5	27.7	864.9	70			70
11/4/2021 7:00 PM	62.0	0.6	33.6	1,050.3	85			85
11/4/2021 8:00 PM	62.7	0.6	34.0	1,062.7	86			86



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Date and Time	CO2 Emissions (tons)	SO2 Emissions (lbs)	NOx Emissions (lbs)	Heat Input (MMBtu)	Gross Generation (MWh)	Column F-Number	Hours In Duration	Gross Unit Load During
11/4/2021 9:00 PM	63.4	0.6	34.4	1,075.0	87			87
11/4/2021 10:00 PM	32.7	0.3	17.7	553.8	45	1	5	54
11/5/2021 6:00 AM	53.2	0.5	28.9	902.0	73			73
11/5/2021 7:00 AM	64.9	0.7	35.2	1,099.7	89			89
11/5/2021 8:00 AM	65.6	0.7	35.6	1,112.1	90			90
11/5/2021 9:00 AM	22.5	0.2	12.2	380.6	31	1	4	44
11/6/2021 5:00 AM	38.1	0.4	20.6	645.0	52			58
11/6/2021 6:00 AM	64.9	0.7	35.2	1,099.7	89			89
11/6/2021 7:00 AM	65.6	0.7	35.6	1,112.1	90			90
11/6/2021 8:00 AM	65.6	0.7	35.6	1,112.1	90			90
11/6/2021 9:00 AM	7.9	0.1	93.5	133.6	11	1	5	23
11/7/2021 5:00 AM	12.7	0.1	6.9	215.0	17			30
11/7/2021 6:00 AM	64.9	0.7	35.2	1,099.7	89			89
11/7/2021 7:00 AM	64.9	0.7	35.2	1,099.7	89			89
11/7/2021 8:00 AM	32.7	0.3	17.7	553.8	45	1	4	54
11/8/2021 6:00 AM	28.6	0.3	15.5	484.4	39			49
11/8/2021 7:00 AM	64.2	0.7	34.8	1,087.4	88			88
11/8/2021 8:00 AM	63.4	0.6	34.4	1,075.0	87			87
11/8/2021 9:00 AM	62.0	0.6	33.6	1,050.3	85			85
11/8/2021 10:00 AM	60.5	0.6	32.8	1,025.6	83			83
11/8/2021 11:00 AM	5.6	0.1	66.9	95.6	8	1	6	18
11/9/2021 6:00 AM	19.9	0.2	10.8	337.3	27			39
11/9/2021 7:00 AM	63.4	0.6	34.4	1,075.0	87			87
11/9/2021 8:00 AM	62.7	0.6	34.0	1,062.7	86			86
11/9/2021 9:00 AM	61.2	0.6	33.2	1,037.9	84			84
11/9/2021 10:00 AM	52.5	0.5	28.5	889.7	72	1	5	72
11/9/2021 5:00 PM	43.7	0.4	23.7	741.4	60			60
11/9/2021 6:00 PM	57.6	0.6	31.2	976.2	79			79
11/9/2021 7:00 PM	14.0	0.1	7.6	237.2	19	1	3	32
11/10/2021 7:00 AM	56.1	0.6	30.4	951.4	77			77
11/10/2021 8:00 AM	60.5	0.6	32.8	1,025.6	83			83
11/10/2021 9:00 AM	59.8	0.6	32.4	1,013.2	82			82
11/10/2021 10:00 AM	12.5	0.1	6.8	211.3	17	1	4	30
11/10/2021 4:00 PM	7.1	0.1	3.9	121.1	10			20
11/10/2021 5:00 PM	56.9	0.6	30.8	963.8	78			78
11/10/2021 6:00 PM	51.8	0.5	28.1	877.3	71	1	3	71
11/11/2021 6:00 AM	0.5	0.0	6.5	9.3	1			3
11/11/2021 7:00 AM	59.8	0.6	32.4	1,013.2	82			82
11/11/2021 8:00 AM	60.5	0.6	32.8	1,025.6	83			83
11/11/2021 9:00 AM	59.8	0.6	32.4	1,013.2	82			82
11/11/2021 10:00 AM	57.6	0.6	31.2	976.2	79			79
11/11/2021 11:00 AM	0.7	0.0	8.7	12.4	1	1	6	4
11/11/2021 5:00 PM	1.1	0.0	12.5	17.9	1			5
11/11/2021 6:00 PM	55.4	0.6	30.1	939.1	76			76
11/11/2021 7:00 PM	56.1	0.6	30.4	951.4	77			77
11/11/2021 8:00 PM	12.7	0.1	6.9	215.0	17	1	4	30
11/12/2021 6:00 AM	3.8	0.0	45.0	64.3	5			13
11/12/2021 7:00 AM	62.0	0.6	33.6	1,050.3	85			85



Ceredo | Unit Hourly Operations (Data)

Periods From: 01/01/2021 To: 12/31/2021

Date and Time	CO2 Emissions (tons)	SO2 Emissions (lbs)	NOx Emissions (lbs)	Heat Input (MMBtu)	Gross Generation (MWh)	Column F-Number	Hours In Duration	Gross Unit Load During
11/12/2021 8:00 AM	61.2	0.6	33.2	1,037.9	84			84
11/12/2021 9:00 AM	59.1	0.6	32.0	1,000.9	81			81
11/12/2021 10:00 AM	14.9	0.2	8.1	252.8	20	1	5	33
11/13/2021 7:00 AM	51.8	0.5	28.1	877.3	71			71
11/13/2021 8:00 AM	62.0	0.6	33.6	1,050.3	85			85
11/13/2021 9:00 AM	53.9	0.5	29.3	914.4	74	1	3	74
11/15/2021 6:00 AM	7.1	0.1	3.9	121.1	10			20
11/15/2021 7:00 AM	62.0	0.6	33.6	1,050.3	85			85
11/15/2021 8:00 AM	62.7	0.6	34.0	1,062.7	86			86
11/15/2021 9:00 AM	44.8	0.5	24.3	759.2	61	1	4	64
11/15/2021 5:00 PM	1.1	0.0	13.0	18.5	2			5
11/15/2021 6:00 PM	61.2	0.6	33.2	1,037.9	84			84
11/15/2021 7:00 PM	61.2	0.6	33.2	1,037.9	84			84
11/15/2021 8:00 PM	36.6	0.4	19.8	619.8	50	1	4	57
11/16/2021 5:00 AM	7.7	0.1	4.2	129.7	11			21
11/16/2021 6:00 AM	62.7	0.6	34.0	1,062.7	86			86
11/16/2021 7:00 AM	59.8	0.6	32.4	1,013.2	82	1	3	82
11/16/2021 5:00 PM	56.1	0.6	30.4	951.4	77			77
11/16/2021 6:00 PM	59.8	0.6	32.4	1,013.2	82			82
11/16/2021 7:00 PM	7.7	0.1	91.4	130.5	11	1	3	22
11/17/2021 7:00 AM	53.9	0.5	29.3	914.4	74			74
11/17/2021 8:00 AM	58.3	0.6	31.6	988.5	80			80
11/17/2021 9:00 AM	17.3	0.2	9.4	293.6	24	1	3	36
11/18/2021 6:00 AM	1.1	0.0	13.0	18.5	2			5
11/18/2021 7:00 AM	56.9	0.6	30.8	963.8	78			78
11/18/2021 8:00 AM	59.1	0.6	32.0	1,000.9	81			81
11/18/2021 9:00 AM	56.1	0.6	30.4	951.4	77	1	4	77
11/19/2021 6:00 AM	48.8	0.5	26.5	827.9	67			67
11/19/2021 7:00 AM	64.9	0.7	35.2	1,099.7	89			89
11/19/2021 8:00 AM	64.9	0.7	35.2	1,099.7	89			89
11/19/2021 9:00 AM	37.8	0.4	20.5	641.5	52	1	4	59
11/19/2021 4:00 PM	33.9	0.3	18.4	573.8	46			54
11/19/2021 5:00 PM	63.4	0.6	34.4	1,075.0	87			87
11/19/2021 6:00 PM	64.2	0.7	34.8	1,087.4	88			88
11/19/2021 7:00 PM	64.9	0.7	35.2	1,099.7	89			89
11/19/2021 8:00 PM	64.9	0.7	35.2	1,099.7	89			89
11/19/2021 9:00 PM	64.9	0.7	35.2	1,099.7	89			89
11/19/2021 10:00 PM	65.6	0.7	35.6	1,112.1	90			90
11/19/2021 11:00 PM	58.3	0.6	31.6	988.5	80	1	8	80
11/20/2021 5:00 PM	4.2	0.0	49.6	70.9	6			14
11/20/2021 6:00 PM	60.5	0.6	32.8	1,025.6	83			83
11/20/2021 7:00 PM	54.7	0.6	29.7	926.7	75	1	3	75
11/23/2021 6:00 AM	3.7	0.0	43.8	62.6	5			13
11/23/2021 7:00 AM	65.6	0.7	35.6	1,112.1	90			90
11/23/2021 8:00 AM	65.6	0.7	35.6	1,112.1	90			90
11/23/2021 9:00 AM	3.4	0.0	40.5	57.8	5	1	4	13
11/24/2021 6:00 AM	0.6	0.0	7.0	10.0	1			3



Ceredo | Unit Hourly Operations (Data)

Periods From: 01/01/2021 To: 12/31/2021

<i>Date and Time</i>	<i>CO2 Emissions (tons)</i>	<i>SO2 Emissions (lbs)</i>	<i>NOx Emissions (lbs)</i>	<i>Heat Input (MMBtu)</i>	<i>Gross Generation (MWh)</i>	<i>Column F-Number</i>	<i>Hours In Duration</i>	<i>Gross Unit Load During</i>
11/24/2021 7:00 AM	64.9	0.7	35.2	1,099.7	89			89
11/24/2021 8:00 AM	62.7	0.6	34.0	1,062.7	86	1	3	86
11/27/2021 5:00 PM	17.8	0.2	9.7	302.5	24			36
11/27/2021 6:00 PM	61.2	0.6	33.2	1,037.9	84			84
11/27/2021 7:00 PM	40.2	0.4	21.8	682.1	55	1	3	60
11/28/2021 5:00 PM	56.1	0.6	30.4	951.4	77			77
11/28/2021 6:00 PM	59.8	0.6	32.4	1,013.2	82			82
11/28/2021 7:00 PM	20.1	0.2	10.9	341.0	28	1	3	40
11/29/2021 6:00 AM	20.1	0.2	10.9	341.0	28			40
11/29/2021 7:00 AM	64.9	0.7	35.2	1,099.7	89			89
11/29/2021 8:00 AM	64.9	0.7	35.2	1,099.7	89			89
11/29/2021 9:00 AM	64.2	0.7	34.8	1,087.4	88			88
11/29/2021 10:00 AM	63.4	0.6	34.4	1,075.0	87			87
11/29/2021 11:00 AM	26.9	0.3	14.6	456.7	37	1	6	48
11/29/2021 4:00 PM	8.0	0.1	4.3	135.9	11			22
11/29/2021 5:00 PM	62.0	0.6	33.6	1,050.3	85			85
11/29/2021 6:00 PM	62.7	0.6	34.0	1,062.7	86			86
11/29/2021 7:00 PM	63.4	0.6	34.4	1,075.0	87			87
11/29/2021 8:00 PM	63.4	0.6	34.4	1,075.0	87			87
11/29/2021 9:00 PM	59.1	0.6	32.0	1,000.9	81	1	6	81
11/30/2021 6:00 AM	12.9	0.1	7.0	218.7	18			30
11/30/2021 7:00 AM	62.0	0.6	33.6	1,050.3	85			85
11/30/2021 8:00 AM	61.2	0.6	33.2	1,037.9	84			84
11/30/2021 9:00 AM	60.5	0.6	32.8	1,025.6	83			83
11/30/2021 10:00 AM	59.8	0.6	32.4	1,013.2	82			82
11/30/2021 11:00 AM	59.1	0.6	32.0	1,000.9	81			81
11/30/2021 12:00 PM	58.3	0.6	31.6	988.5	80			80
11/30/2021 1:00 PM	58.3	0.6	31.6	988.5	80			80
11/30/2021 2:00 PM	57.6	0.6	31.2	976.2	79			79
11/30/2021 3:00 PM	57.6	0.6	31.2	976.2	79			79
11/30/2021 4:00 PM	58.3	0.6	31.6	988.5	80			80
11/30/2021 5:00 PM	58.3	0.6	31.6	988.5	80			80
11/30/2021 6:00 PM	59.1	0.6	32.0	1,000.9	81			81
11/30/2021 7:00 PM	61.2	0.6	33.2	1,037.9	84			84
11/30/2021 8:00 PM	62.7	0.6	34.0	1,062.7	86			86
11/30/2021 9:00 PM	24.8	0.3	13.5	420.6	34	1	16	46
12/1/2021 6:00 AM	5.0	0.1	59.5	85.0	7			16
12/1/2021 7:00 AM	64.2	0.7	761.2	1,087.4	88			88
12/1/2021 8:00 AM	61.2	0.6	726.5	1,037.9	84	1	3	84
12/1/2021 5:00 PM	39.1	0.4	463.5	662.1	54			57
12/1/2021 6:00 PM	59.8	0.6	709.2	1,013.2	82			82
12/1/2021 7:00 PM	33.9	0.3	18.4	573.8	46	1	3	54
12/4/2021 5:00 PM	26.8	0.3	318.3	454.7	37			46
12/4/2021 6:00 PM	61.2	0.6	726.5	1,037.9	84			84
12/4/2021 7:00 PM	62.0	0.6	735.2	1,050.3	85			85
12/4/2021 8:00 PM	5.0	0.1	2.7	84.0	7	1	4	17
12/6/2021 5:00 PM	0.5	0.0	6.5	9.3	1			3
12/6/2021 6:00 PM	60.5	0.6	717.9	1,025.6	83			83
12/6/2021 7:00 PM	62.0	0.6	735.2	1,050.3	85			85
12/6/2021 8:00 PM	54.7	0.6	29.7	926.7	75	1	4	75



Ceredo | Unit Hourly Operations (Data)

Periods From: 01/01/2021 To: 12/31/2021

Date and Time	CO2 Emissions (tons)	SO2 Emissions (lbs)	NOx Emissions (lbs)	Heat Input (MMBtu)	Gross Generation (MWh)	Column F-Number	Hours In Duration	Gross Unit Load During
12/8/2021 6:00 AM	22.9	0.2	271.5	387.9	31			43
12/8/2021 7:00 AM	64.2	0.7	761.2	1,087.4	88			88
12/8/2021 8:00 AM	64.2	0.7	34.8	1,087.4	88			88
12/8/2021 9:00 AM	63.4	0.6	34.4	1,075.0	87			87
12/8/2021 10:00 AM	63.4	0.6	34.4	1,075.0	87			87
12/8/2021 11:00 AM	25.5	0.3	13.8	432.5	35	1	6	50
12/9/2021 7:00 AM	52.5	0.5	622.8	889.7	72			72
12/9/2021 8:00 AM	64.9	0.7	769.8	1,099.7	89			89
12/9/2021 9:00 AM	13.8	0.1	7.5	233.7	19	1	3	31
12/13/2021 5:00 AM	1.7	0.0	20.0	28.5	2			7
12/13/2021 6:00 AM	64.9	0.7	769.8	1,099.7	89			89
12/13/2021 7:00 AM	65.6	0.7	778.5	1,112.1	90			90
12/13/2021 8:00 AM	3.8	0.0	2.0	64.0	5	1	4	14
12/13/2021 6:00 PM	26.2	0.3	310.3	443.3	36			46
12/13/2021 7:00 PM	62.7	0.6	743.9	1,062.7	86			86
12/13/2021 8:00 PM	57.6	0.6	683.3	976.2	79	1	3	79
12/14/2021 4:00 AM	0.8	0.0	9.7	13.8	1			4
12/14/2021 5:00 AM	64.2	0.7	761.2	1,087.4	88			88
12/14/2021 6:00 AM	65.6	0.7	778.5	1,112.1	90			90
12/14/2021 7:00 AM	65.6	0.7	35.6	1,112.1	90			90
12/14/2021 8:00 AM	3.3	0.0	1.8	56.2	5	1	5	13
12/17/2021 6:00 AM	13.8	0.1	163.6	233.7	19			31
12/17/2021 7:00 AM	60.5	0.6	717.9	1,025.6	83			83
12/17/2021 8:00 AM	60.5	0.6	717.9	1,025.6	83			83
12/17/2021 9:00 AM	21.7	0.2	11.8	368.5	30	1	4	42
12/17/2021 4:00 PM	38.2	0.4	453.6	648.0	52			57
12/17/2021 5:00 PM	61.2	0.6	726.5	1,037.9	84			84
12/17/2021 6:00 PM	50.3	0.5	27.3	852.6	69	1	3	69
12/20/2021 7:00 AM	2.0	0.0	23.5	33.6	3			8
12/20/2021 8:00 AM	64.9	0.7	769.8	1,099.7	89			89
12/20/2021 9:00 AM	64.9	0.7	769.8	1,099.7	89			89
12/20/2021 10:00 AM	64.2	0.7	34.8	1,087.4	88			88
12/20/2021 11:00 AM	5.8	0.1	3.2	98.6	8	1	5	19
12/21/2021 6:00 AM	19.6	0.2	232.8	332.5	27			39
12/21/2021 7:00 AM	64.9	0.7	35.2	1,099.7	89			89
12/21/2021 8:00 AM	64.9	0.7	35.2	1,099.7	89			89
12/21/2021 9:00 AM	54.7	0.6	29.7	926.7	75	1	4	75

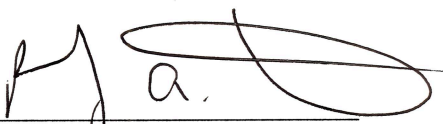
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STATE OF GEORGIA)

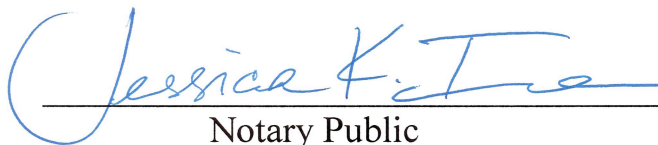
COUNTY OF FULTON)

RANDY A. FUTRAL, being duly sworn, deposes and states: that the attached is his sworn testimony and that the statements contained are true and correct to the best of his knowledge, information and belief.



Randy A. Futral

Sworn to and subscribed before me on this
22nd day of December 2023.



Notary Public

Jessica K Inman
NOTARY PUBLIC
Cherokee County, GEORGIA
My Commission Expires 07/31/2027