COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL ADJUSTMENT CLAUSE OF KENTUCKY POWER COMPANY FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022	**)**	**CASE NO. 2022-00263**

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 2022

COMMONWEALTH OF KENTUCKY
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AN ELECTRONIC EXAMINATION OF THE APPLICATION OF THE FUEL ADJUSTMENT CLAUSE OF KENTUCKY POWER COMPANY FROM NOVEMBER 1, 2021 THROUGH APRIL 30, 2022	**)**	**CASE NO. 2022-00263**

DIRECT TESTIMONY OF RANDY A. FUTRAL

I. QUALIFICATIONS AND SUMMARY

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.

A. I earned a Bachelor of Business and Science degree in Business Administration

with an emphasis in Accounting from Mississippi State University. I have held various positions in the field of accounting for a period of over 35 years, both as an employee and more recently as a consultant. My experience has been focused in the areas of accounting, auditing, tax, budgeting, forecasting, financial reporting, and management.

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

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

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

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

I have testified as an expert on ratemaking, accounting, finance, tax, and other issues in proceedings before regulatory commissions at the federal and state

levels on numerous occasions. I have also acted as the lead expert in numerous proceedings involving audits of Louisiana fuel adjustment clauses, environmental adjustment clauses, purchase gas adjustment clauses, energy efficiency rider filings, and formula rate plan filings resulting in written reports that were ultimately approved by the Louisiana Public Service Commission.

I recently appeared as a witness before the Kentucky Public Service Commission ("Commission") in a Water Service Corporation of Kentucky ("WSCK") base rate proceeding in Case No. 2022-00147. Although I had not previously appeared before the Commission as a witness, I have assisted counsel for the Office of the Attorney General of the Commonwealth of Kentucky and Kentucky Industrial Utilities Customers, as well as other Kennedy and Associates' experts, in numerous proceedings before the Commission, including base rate, fuel adjustment clause, and acquisition proceedings involving Kentucky Power Company ("Kentucky Power" or "Company"), Atmos Energy Corporation, Duke Energy Kentucky, Inc., Columbia Gas of Kentucky, Inc., Kentucky Utilities Company, Louisville Gas and Electric Company, Big Rivers Electric Corporation, Jackson Purchase Energy Corporation, and East Kentucky Power Cooperative, Kentucky-American Water Company, and WSCK.[1]

Q. On whose behalf are you testifying?

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

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

Q. Briefly describe this proceeding.

A. This proceeding involves a six-month review, initiated by the Commission on September 13, 2022, to examine Kentucky Power's application of its Fuel Adjustment Clause (FAC) from November 1, 2021 through April 30, 2022.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to: 1) describe the Company's implementation of the hypothetical Peaking Unit Equivalent ("PUE") methodology to calculate the purchased power expense limitation for recovery purposes in the FAC for the six-month period under review, 2) describe the source of the Company's $30/mWh startup cost per hour used as a proxy in its hypothetical PUE, 3) recommend a reduction in the $/mWh cost to reflect an allocation of the per startup costs to each hour of generation from startup to shut down of the hypothetical PUE consistent with the actual operation of a peaking unit, 4) describe and provide the calculation of a reduced start-up cost for the PUE, 5) describe and provide the calculations of the FAC purchased power limitations and disallowances in the FAC using the reduced start-up cost for the PUE, and 6) describe and provide the calculations of the FAC purchased power limitations and disallowances in the FAC using the PUE methodology for the first 100 mW in each hour and the Base

Unit Equivalent ("BUE") methodology for each additional hour of non-forced outage purchases based on the parameters described in the Direct Testimony of Mr. Kollen.

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

A. Yes. As described more in detail below, Kentucky Power uses a hypothetical ratemaking methodology known as the PUE to determine whether its energy purchases are economic and therefore recoverable through its FAC. The PUE calculation starts with the determination of the cost of gas that would have been burned by a hypothetical gas-fired combustion turbine ("CT") in a single hour. Kentucky Power multiplies the daily market price for natural gas by a heat rate of 10,400 Btu/kWh for nine months out of the year and 10,800 Btu/kWh during the summer months of June through August. All of the PUE calculations during the review period were subject to the 10,400 Btu/kWh calculation. The Company adds hypothetical fixed startup costs of $30/mWh and variable operations and maintenance ("O&M") costs of $3.48/mWh to the determined cost of gas to complete its PUE calculation. The following calculation was performed by the Company to determine the PUE for the first hour in the review period, hour 1 on November 1, 2021, based on a daily market price of gas that day of $5.05/mWh:

Gas Costs ($5.05/mWh x (10,400/1,000)) Btu/mWh	$52.50/mWh
Fixed Startup Costs	$30.00/mWh
Variable O&M Costs	$3.48/mWh
PUE – November 1, 2021 Hour 1	$86.00/mWh

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

A. Yes. The table below reflects the PUE disallowances of $1,284,883 calculated by the Company and removed from recoverable FAC costs by month during the review period.[2]

KPCo - PUE Disallowances
For The Six Months November 2021 through April 2022
Case No. 2022-00263

Based on Attachment Responses to Staff 1-16
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	PUE Disallowance with $30/mWh Startup Costs
Nov 21	443,748
Dec 21	79,578
Jan 22	665,115
Feb 22	51,226
Mar 22	-
Apr 22	45,216
Total	1,284,883

Q. Describe the Company's source for the $30/mWh startup cost per hour used

[2] The Company removed these amounts in each of its monthly FAC filings based on results from its FAC workpapers filed in response to Staff discovery. See response to Staff 1-16, Attachment1 for November 2021, Attachment2 for December 2021, Attachment3 for January 2022, Attachment4 for February 2022, Attachment5 for March 2022, and Attachment6 for April 2022.

for the hypothetical PUE.

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

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

Further, Mr. Vaughan stated that "[b]ased on the Company's experience and information available regarding costs associated with combustion turbines, the startup costs, variable O&M, and firm gas components combine to add between $38-$39/MWh to the peaking unit equivalent cost calculation depending on the month of the year. The details behind this calculation can be found in

[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.*

Exhibit AEV 8."[6]

In short, Mr. Vaughan testified that the proposed PUE was based on "real costs" that "would be incurred to operate an *actual* natural gas combustion turbine generating unit" and that startup costs only would be incurred once per startup prior to the PUE generating power. (emphasis added). In contrast to Mr. Vaughan's testimony on these issues, the Company's calculation of the $/mWh costs of the PUE and its assumption that the PUE capacity can be scaled upward beyond its physical limitation to any capacity deficiency in an hour do not reflect "real costs" and are not the costs that "would be incurred to operate an *actual* combustion turbine generating unit," such as Ceredo 1.

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Q. Did Mr. Vaughan or any other Company witness in Case 2017-00179 disclose that the Company planned to include and apply the $30/mWh in the $/mWh costs for the PUE in every hour for the purpose of calculating the FAC purchased power limitation, even though the startup cost would be incurred only in the first hour that the PUE was started and not every hour that it operated?

A. No. The Company failed to disclose this important fact in Case 2017-00179. Nor did Mr. Vaughan provide the source for the $30/mWh startup costs that the Company included in the $/mWh costs for the PUE. The Company finally disclosed this important fact and that Appalachian Power Company's Ceredo 1 CT

[6] *Id.*, 35.

was the actual unit relied on for the hypothetical PUE in response to discovery in Case 2022-00036. [7]

Q. Does the Ceredo 1 CT incur startup costs only in the hour that it is started or in every hour that it operates?

A. The Ceredo 1 CT incurs startup costs only in the hour that it is started. The Company confirmed that the Ceredo 1 "[s]tartup costs are incurred on a per-start basis" in response to AG-KIUC discovery in this proceeding.[8]

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

A. The Company provides a dollar cost for each startup for each of its generating units in accordance with the information and form defined by PJM.[9] The Company admits that the startup costs "are calculated and submitted on a per-start basis in accordance with PJM protocols and are not calculated on a dollar-per-MWh basis."[10] Finally, the Company admits that the startup costs for Ceredo 1 "are incurred on a per-start basis."[11]

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[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 100mW unit.

[8] Response to AG-KIUC 1-5. I have attached a copy of this response as my Exhibit___(RAF-2).

[9] Response to AG-KIUC 1-3(c). I have attached a copy of this response as my Exhibit___(RAF-3).

[10] Response to AG-KIUC 1-3(e). See Exhibit___(RAF-3).

[11] Response to AG-KIUC 1-5. See Exhibit___(RAF-2).

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

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

Q. Why is the issue of the startup costs for the PUE important for purposes of the FAC purchased power limitation?

A. It is important because it affects the purchased power expense included in the FAC and likely is reflected behaviorally in the Company's operation and maintenance of its base load generating units, which, in turn, affects the power purchased in lieu of operating its lower cost base load generating units. In other words, it provides the Company an incentive not to operate its base load generating units or to operate them at a lower capacity factor, especially because it reduces any disallowance penalty.

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

A. Yes. I recommend that the Commission set the hypothetical fixed startup cost amount in the PUE calculation to $4.62/mWh based on the actual run-time experience of Ceredo 1. If the start-up costs are included in the cost of the PUE, then they should be no greater than the hypothetical PUE would occur for each startup over all hours that it operates after that startup based on actual experience.

The one-time $3,000 start-up costs for Ceredo 1 averaged over the 6.49 hours of generation for each start-up occurring during 2021 is equivalent to $4.62/mWh.

Q. Is your PUE calculation recommendation the same as the recommendation made by KIUC counsel during the last six-month period review in Case No. 2022-00036?

A. Yes.

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

A. Yes. I performed the calculation of Ceredo Unit 1's 6.49 hour average runtime based on actual hourly generation results published for 2021.[12] To perform the calculation, I first determined the hours of duration that electricity was generated for each of the 140 separate Ceredo Unit 1 startups that occurred during 2021. I summed those hours and divided them by the 140 separate startups to determine that the average hourly runtime of each was 6.49 hours. I have attached a summary of my calculation as my Exhibit___(RAF-4) that shows each of the hours during 2021 in which generation occurred as well as the average runtime.

[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).

For purposes of this exhibit, I hid all of the rows of data for hours that the unit did not operate.[13]

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

A. Yes. This change in the calculation for each hour was a simple one and took only minutes to modify the calculations in each month applicable to the review period. The calculation of the PUE utilized for the FAC purchased power limitation and PUE disallowance calculation is found in cell column L in each monthly "Hourly Purchase Alloc" worksheet tab in the monthly Excel workpaper file attachments supplied by the Company in response to Staff 1-16.[14] For each hour, the PUE calculation computes the cost of gas and adds $33.48/mWh at the end of the formula for the costs of Kentucky Power's hypothetical fixed startup and variable O&M costs. I simply changed the formula in the first hour each month to add only $8.10/mWh, made up of the modified $4.62/mWh hypothetical fixed startup costs and the same variable O&M costs of $3.48/mWh. I copied this formula change to each hour for each of the review period months. This change applies to all PJM market-based purchases not associated with forced outages in order to serve native load occurring in each hour without limitation. The table below

[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.

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

reflects the PUE disallowances summing to $1,284,883 as calculated by the Company and the PUE disallowances that I recalculated for each month summing to $4,438,793, an increase in the PUE disallowances for the review period of $3,153,910.[15] Just like the Company's calculation of PUE disallowances, these disallowances are based on the application of the PUE methodology to all native load PJM purchases made excluding those associated with forced outages.

KPCo - PUE Disallowances
AG and KIUC Recommended Modified PUE Disallowances
For The Six Months November 2021 through April 2022
Case No. 2022-00263

Based on Attachment Responses to Staff 1-16
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	PUE Disallowance with $30/mWh Startup Costs for All Purchases	PUE Disallownace with $4.62/mWh Startup Costs for All Purchases	Variance
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
Total	1,284,883	4,438,793	3,153,910

[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 by the Company in response to Staff 1-16 modified for the change in the PUE. The Excel workbooks are in live format and with all formulas intact.

Q. Mr. Kollen recommended that the FAC purchased power limitation be modified to limit the PUE to the first 100 mW each hour, with the additional capacity required each hour priced using the BUE methodology. Did you rerun the Company's FAC purchased power limitation and disallowance calculations once again to calculate the effects of this second recommendation to incorporate Mr. Kollen's BUE recommendation?

A. Yes. This change in the FAC purchased power limitation and disallowance calculation for each hour during the review period was a little more involved. The changes were reflected in the same monthly "Hourly Purchase Alloc" worksheet tabs in the monthly Excel workpaper file attachments supplied by the Company in response to Staff 1-16. I retained the same recalculation of the PUE each hour based of the modified startup costs of $4.62/mWh in column L. However, instead of applying this modified PUE to all purchases for native load not associated with forced outages, I added five additional calculation columns, cell columns U through Y, to measure the results of Mr. Kollen's second recommendation to limit the PUE and add the BUE. These new calculation columns were created to ensure that the PUE would apply to only the first 100 mW of purchases each hour and that the remainder of such purchases would be measured against the cost of the highest cost baseload unit each month.[16] The

[16] The highest cost baseload coal 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 baseload unit from February 2022 of $31.273/mWh as a reasonable proxy to calculate the effects of Mr. Kollen's BUE recommendation.

table below reflects the results of these calculation changes. The combination of the PUE and BUE methodologies recommended by Mr. Kollen results in a disallowance of $22,921,262 for the review period. This is $21,636,379 higher than the PUE disallowances calculated by the Company.[17]

Kentucky Power Company
AG and KIUC Recommended PUE and BUE Disallowances
For The Six Months November 2021 through April 2022
Case No. 2022-00263

Based on Attachment Responses to Staff 1-16
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	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 BUE Disallowance for All Purchases Above 100 mW	Combined Modified PUE and Additional BUE Disallowances	Increase in Disallowance As Filed PUE Disallowance vs Combined PUE/BUE Disallowance
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	-	-	4,207,937	4,207,937	4,207,937
Apr 22	45,216	97,320	1,781,345	1,878,665	1,833,449
Total	1,284,883	1,394,331	21,526,931	22,921,262	21,636,379

Q. Does this complete your testimony?

A. Yes.

[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 1-16 modified for the change in the PUE and BUE. The Excel workbooks are in live format and with all formulas intact.

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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 2022

AFFIDAVIT

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
5th day of December 2022.

Notary Public

JESSICA K INMAN
NOTARY PUBLIC
CHEROKEE COUNTY, GEORGIA
MY COMMISSION EXPIRES
JULY 31, 2023

EXHIBIT ____ (RAF-1)

RESUME OF RANDY A. FUTRAL – DIRECTOR OF CONSULTING

EDUCATION

Mississippi State University, BBS in Business Administration
Accounting

EXPERIENCE

J. Kennedy and Associates, Inc. **2003 - Present**
Director of Consulting

Responsible for utility revenue requirements analysis, affiliate transaction auditing and analysis, fuel adjustment clause auditing and research involving tax and public reporting matters. Clients served include the Georgia Public Service Commission Staff, the Louisiana Public Service Commission ("LPSC") and its Staff, the Florida Office of Public Counsel ("OPC"), the Office of the Attorney General of the Commonwealth of Kentucky ("KY AG"), the South Carolina Office of Regulatory Staff ("ORS"), the Houston Council for Health and Education, the Gulf Coast Coalition of Cities, the Alliance for Valley Healthcare, the Ohio Energy Group, Inc., the Kentucky Industrial Utility Customers ("KIUC"), the Municipalities of Alda, Grand Island, Kearney and North Platte, Nebraska, the City of Clinton, and the Wisconsin Industrial Energy Group, Inc.

Direct and Responsive Testimonies filed on behalf of Louisiana Public Service Commission or it's Staff:
LPSC Docket No. U-23327 Southwestern Electric Power Company, Revenue Requirement Review, October 2004.
LPSC Docket No. U-21453, U-20925, U-22092 Entergy Gulf States, Inc., Jurisdictional Separation Plan, March 2006.
LPSC Docket No. U-25116 Entergy Louisiana, Inc., 2002-2004 Audit of Fuel Adjustment Clause, April 2006.
LPSC Docket No. U-23327 Southwestern Electric Power Company, Revenue Requirement Review, July 2006.
LPSC Docket No. U-21453, U-20925, U-22092 Entergy Gulf States, Inc., Jurisdictional Separation Plan, August 2006.
FERC Docket No. ER07-682 Entergy Services, Inc., Company's Section 205 Changes to Rough Production Cost Equalization Computation, November 2007.
FERC Docket No. ER07-956 Entergy Services, Inc., Company's 2007 Filing to be in Compliance with FERC Opinions' 480and 480-A, March 2008.

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' 480and 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 Fling 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.

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.

Telscape International, Inc.	**1997 - 2003**
Corporate Controller	**1999 - 2003**
Assistant Controller	**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.

- 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 **1987 - 1988**
Senior Accountant for Operations

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. **1986 - 1987**
Senior Accountant

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 **1984 - 1986**
Staff Accountant

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)

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

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)

S&P Capital IQ PRO

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

S&P Capital IQ PRO

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

S&P Capital IQ PRO

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
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

S&P Capital IQ PRO

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
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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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
6/11/2021 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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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

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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
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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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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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

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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
11/12/2021 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

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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

S&P Capital IQ PRO

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
						140 Count	6.49 Avg. # of	