

Kentucky Power Company  
KPSC Case No. Administrative Case No. 387 - 2021  
Annual Responses

**DATA REQUEST**

- 1** Actual and weather-normalized monthly coincident peak demands for the just completed calendar year. Demands should be disaggregated into (a) native load demand (firm and non-firm) and (b) off-system demand (firm and non-firm). Please provide the information for both Kentucky Power Company individually and the AEP-East Power Pool (pursuant to the Commission's December 13, 2004 Order in the Rockport UPSA extension, Case No. 2004-00420).

**RESPONSE**

Please refer to Page 1 of KPCO\_R\_KPSC\_1\_1\_Attachment1 for actual and weather normalized 2020 monthly peak native load demands for Kentucky Power Company. Kentucky Power Company had nine customers with interruptible provisions in their contracts in 2020 for PJM initiated events.

Combined, these customers had approximately 6.2 MW of interruptible load available for use in PJM capacity auctions. The interruptible load available for PJM auctions reflects the average load for these customers, less contractually firm load, at the time of the PJM five coincident peaks in the summer of 2019.

Please refer to Page 2 of KPCO\_R\_KPSC\_1\_1\_Attachment1 for actual 2020 monthly system demands for Kentucky. The system demands include internal load and off-system sales. Weather-normalized monthly peak system demands for Kentucky Power Company have not been developed and are not available.

The AEP Interconnection Agreement terminated on January 1, 2014 and the AEP-East Power Pool no longer exists. As a result, the requested information regarding the AEP East Power Pool is no longer available.

Witness: Brian K. West

**Kentucky Power Company  
Actual and Weather Normalized Peak Internal Demand (MW)  
2020**

<b>Kentucky Power Company</b>				
<b>Month</b>	<b>Peak</b>	<b>Peak Day</b>	<b>Peak Hour</b>	<b>Normalized Peak</b>
<b>January</b>	1,168	1/22/2020	8	1,279
<b>February</b>	1,067	2/15/2020	8	1,132
<b>March</b>	955	3/1/2020	8	1,073
<b>April</b>	723	4/11/2020	7	704
<b>May</b>	817	5/28/2020	16	763
<b>June</b>	926	6/10/2020	16	889
<b>July</b>	961	7/21/2020	16	953
<b>August</b>	908	8/13/2020	15	946
<b>September</b>	878	9/10/2020	15	867
<b>October</b>	650	10/31/2020	9	600
<b>November</b>	861	11/18/2020	8	974
<b>December</b>	1,036	12/26/2020	8	1,131

**Kentucky Power Company  
Actual Peak System Demand (MW)  
2020**

<b>Kentucky Power Company</b>			
<b>Month</b>	<b>Peak</b>	<b>Peak Day</b>	<b>Peak Hour</b>
<b>January</b>	916	1/27/2020	21
<b>February</b>	842	2/21/2020	9
<b>March</b>	750	3/16/2020	10
<b>April</b>	702	4/23/2020	10
<b>May</b>	1,177	5/27/2020	14
<b>June</b>	974	6/6/2020	18
<b>July</b>	1,284	7/6/2020	15
<b>August</b>	1,216	8/20/2020	18
<b>September</b>	519	9/30/2020	14
<b>October</b>	486	10/2/2020	8
<b>November</b>	828	11/11/2020	16
<b>December</b>	798	12/21/2020	20

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**DATA REQUEST**

- 2 Load shape curves that show actual peak demands and weather-normalized peak demands (native load demand and total demand) on a monthly basis for the just completed calendar year. Please provide the information for both Kentucky Power Company individually and the AEP-East Power Pool (pursuant to the Commission's December 13, 2004 Order in the Rockport UPSA extension, Case No. 2004-00420).

**RESPONSE**

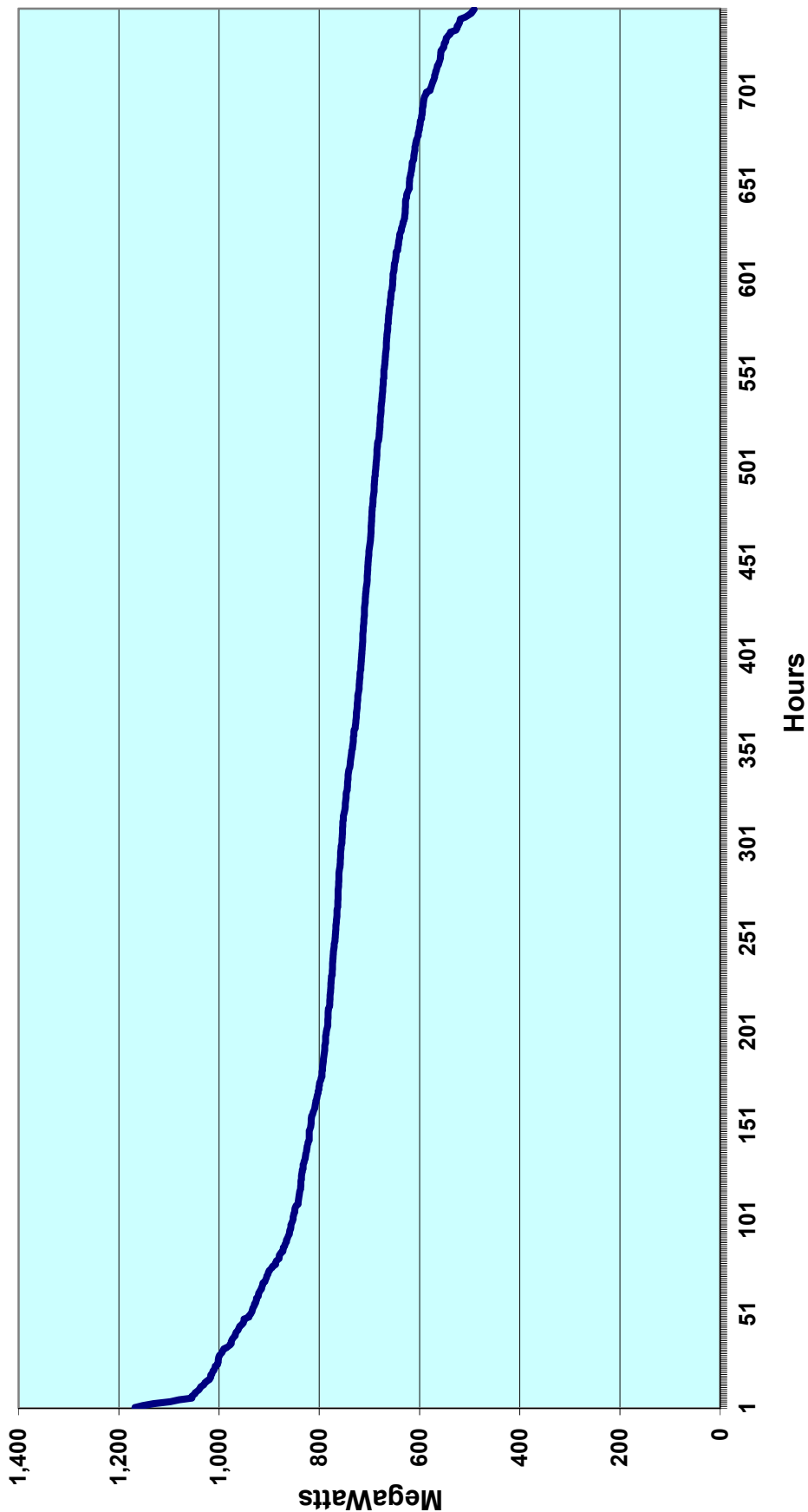
Please refer to Pages 1 through 12 of KPCO\_R\_KPSC\_1\_2\_Attachment1 for 2020 monthly load duration curves for Kentucky Power Company's internal native load. Please refer to Pages 13 through 24 of KPCO\_R\_KPSC\_1\_2\_Attachment1 for 2020 monthly load duration curves for Kentucky Power Company's system load. The system load, for Kentucky Power Company, includes internal load and off-system sales.

Weather-normalized monthly internal peaks for Kentucky Power Company are provided on Page 1 of KPCO\_R\_KPSC\_1\_1\_Attachment1. Weather normalized system peaks have not been developed and are not available.

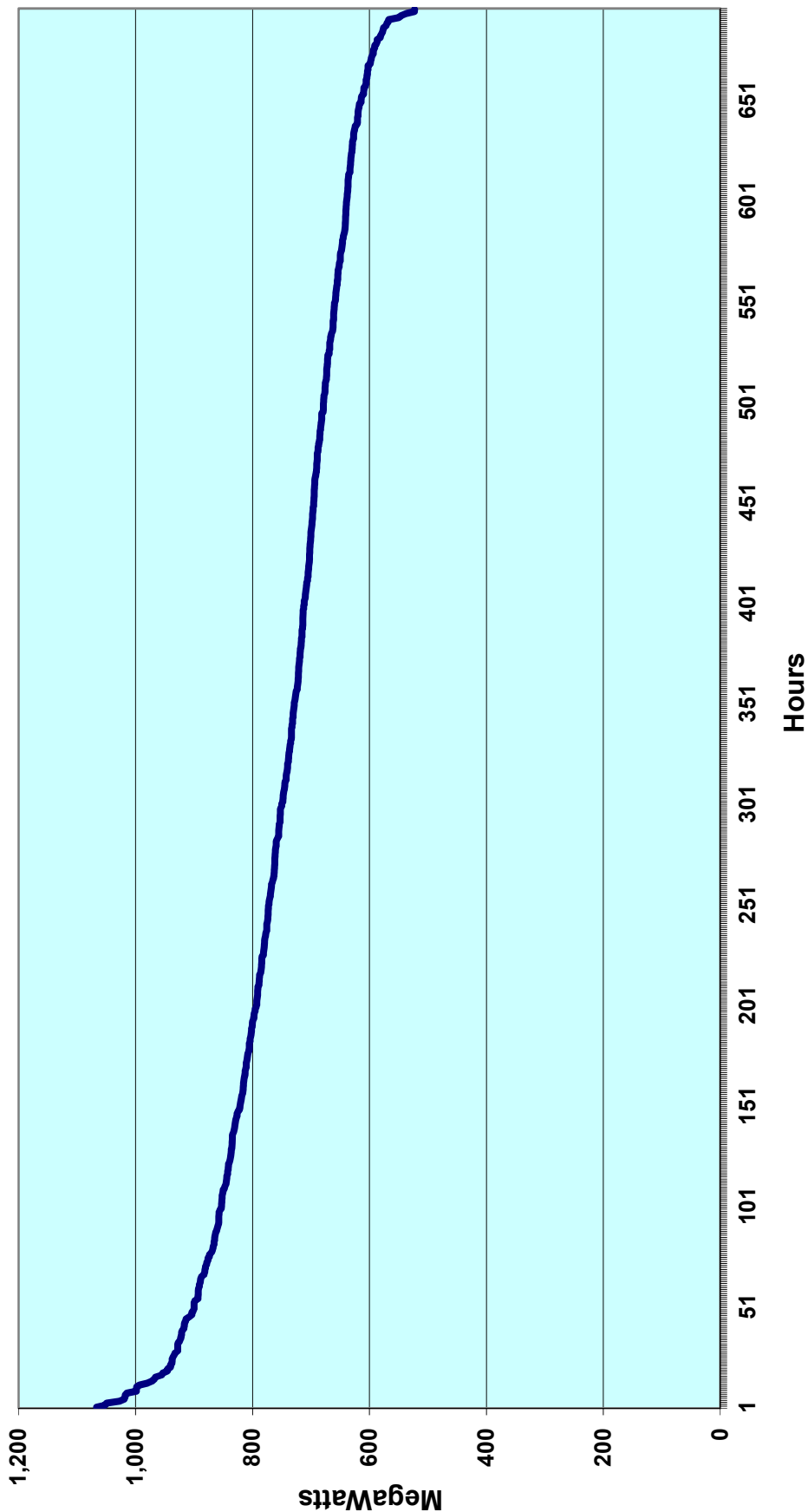
The AEP Interconnection Agreement terminated on January 1, 2014 and the AEP-East Power Pool no longer exists. As a result, the requested information regarding the AEP East Power Pool is no longer available.

Witness: Brian K. West

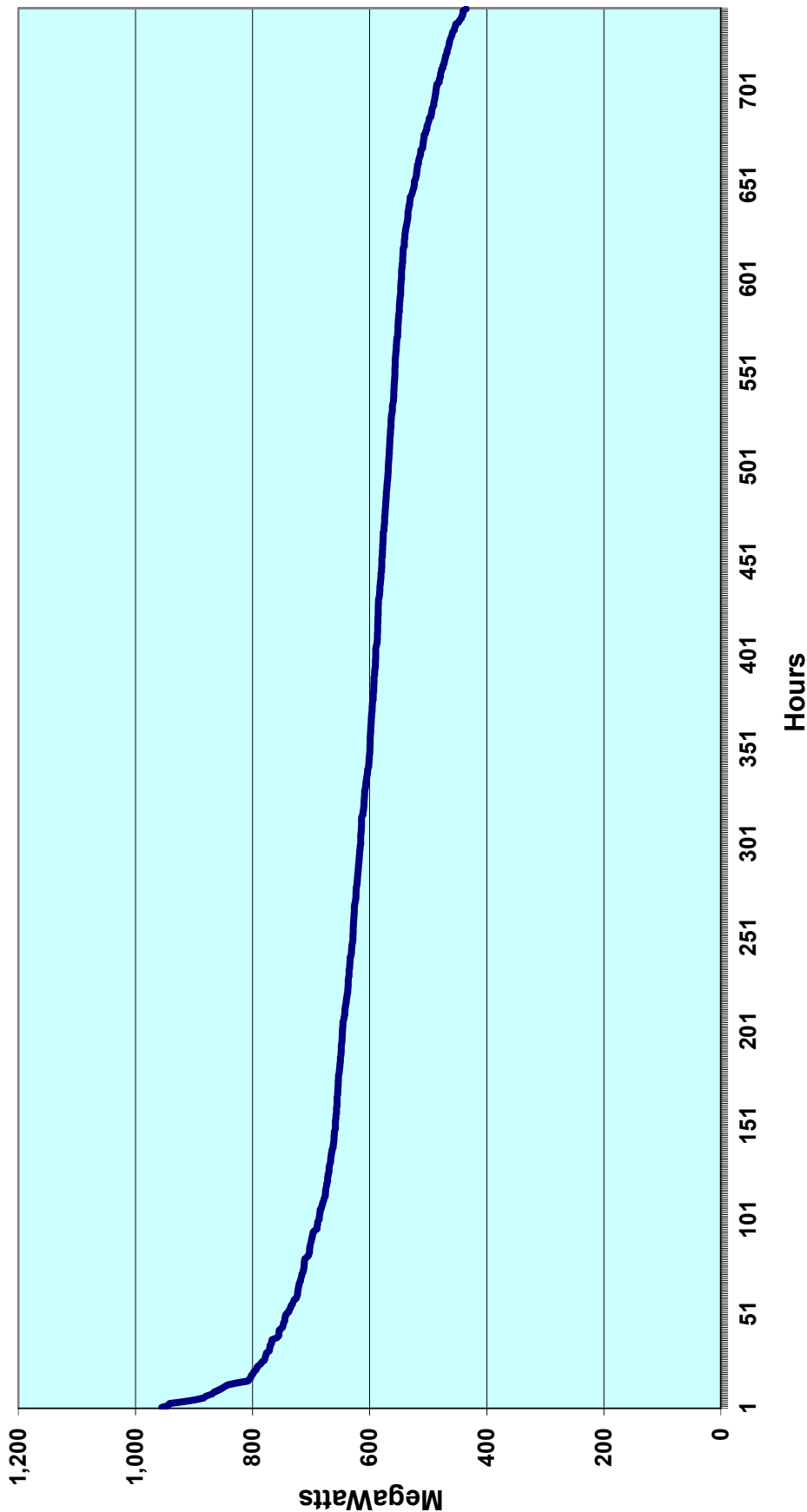
### Kentucky Power Company January 2020 Load Duration Curve (Internal Load)



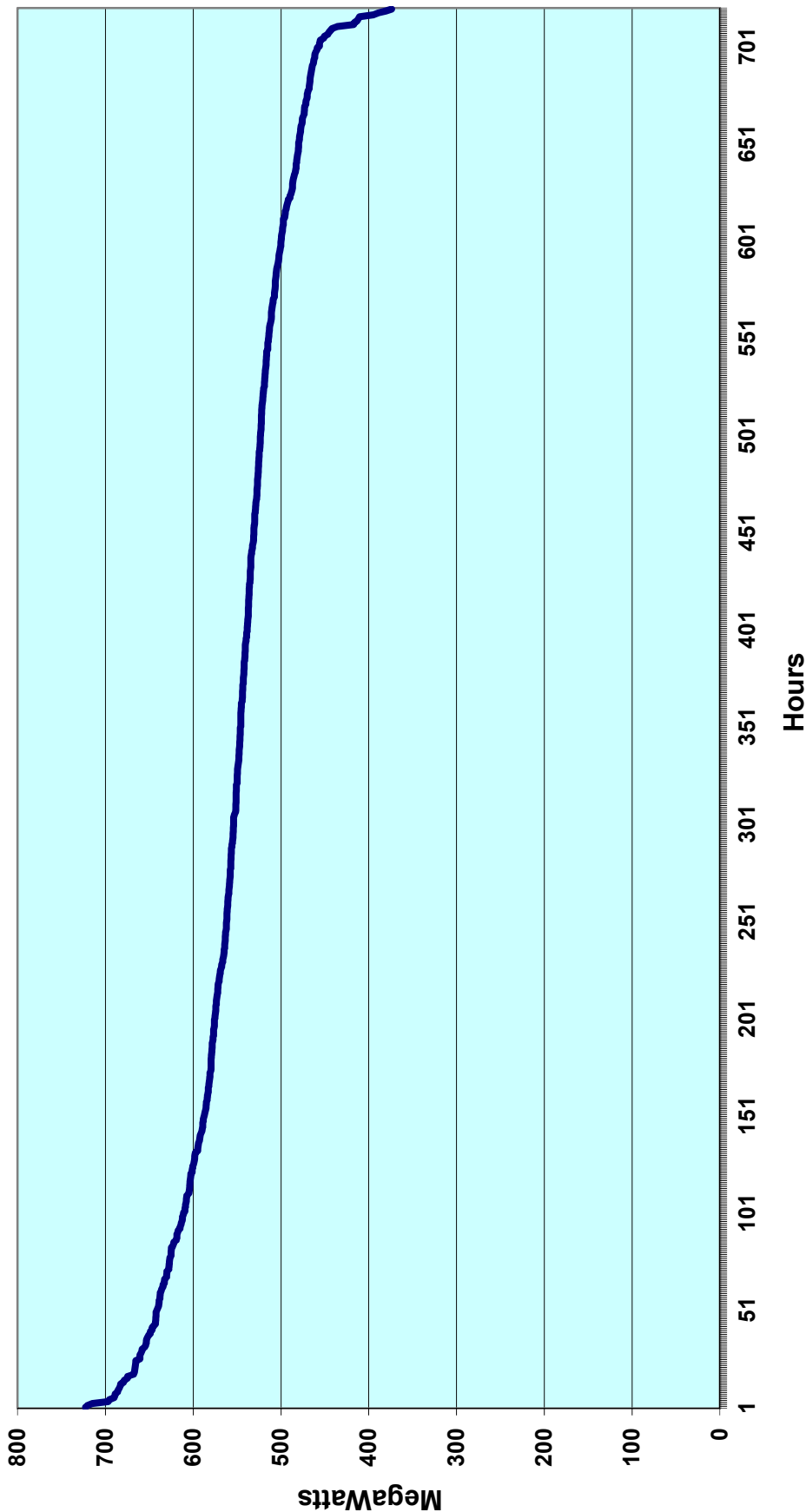
### Kentucky Power Company February 2020 Load Duration Curve (Internal Load)



### Kentucky Power Company March 2020 Load Duration Curve (Internal Load)

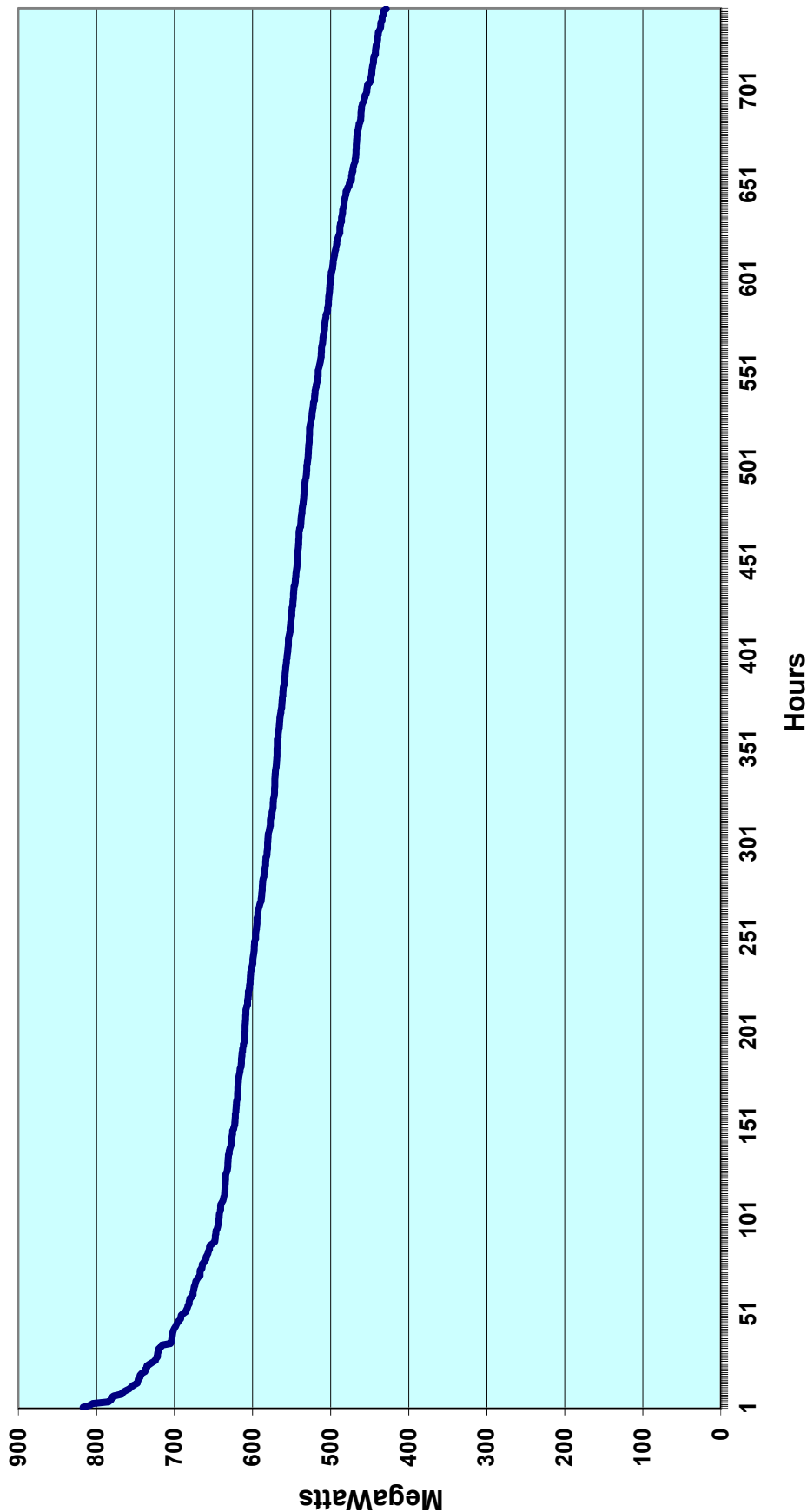


### Kentucky Power Company April 2020 Load Duration Curve (Internal Load)

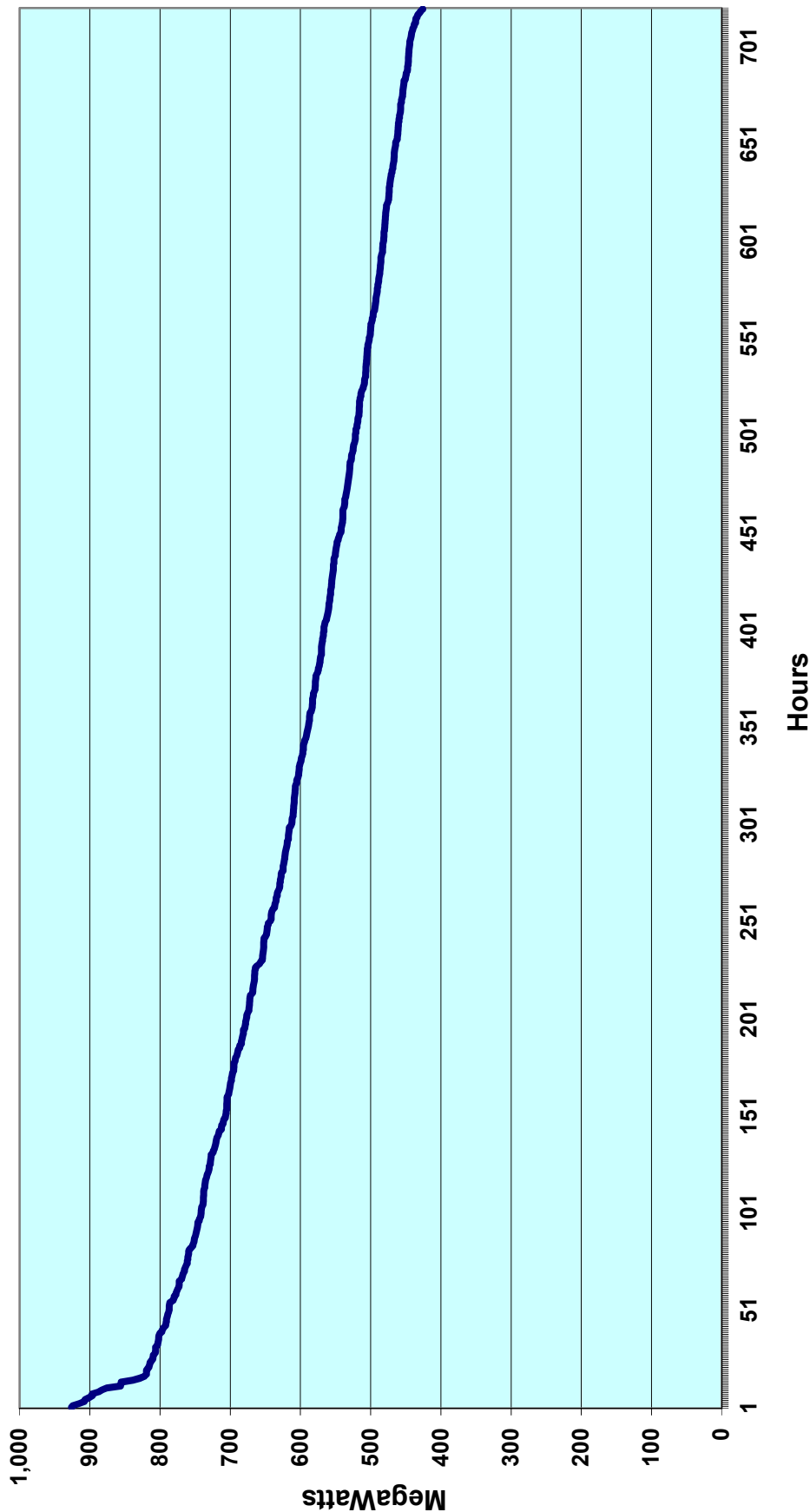




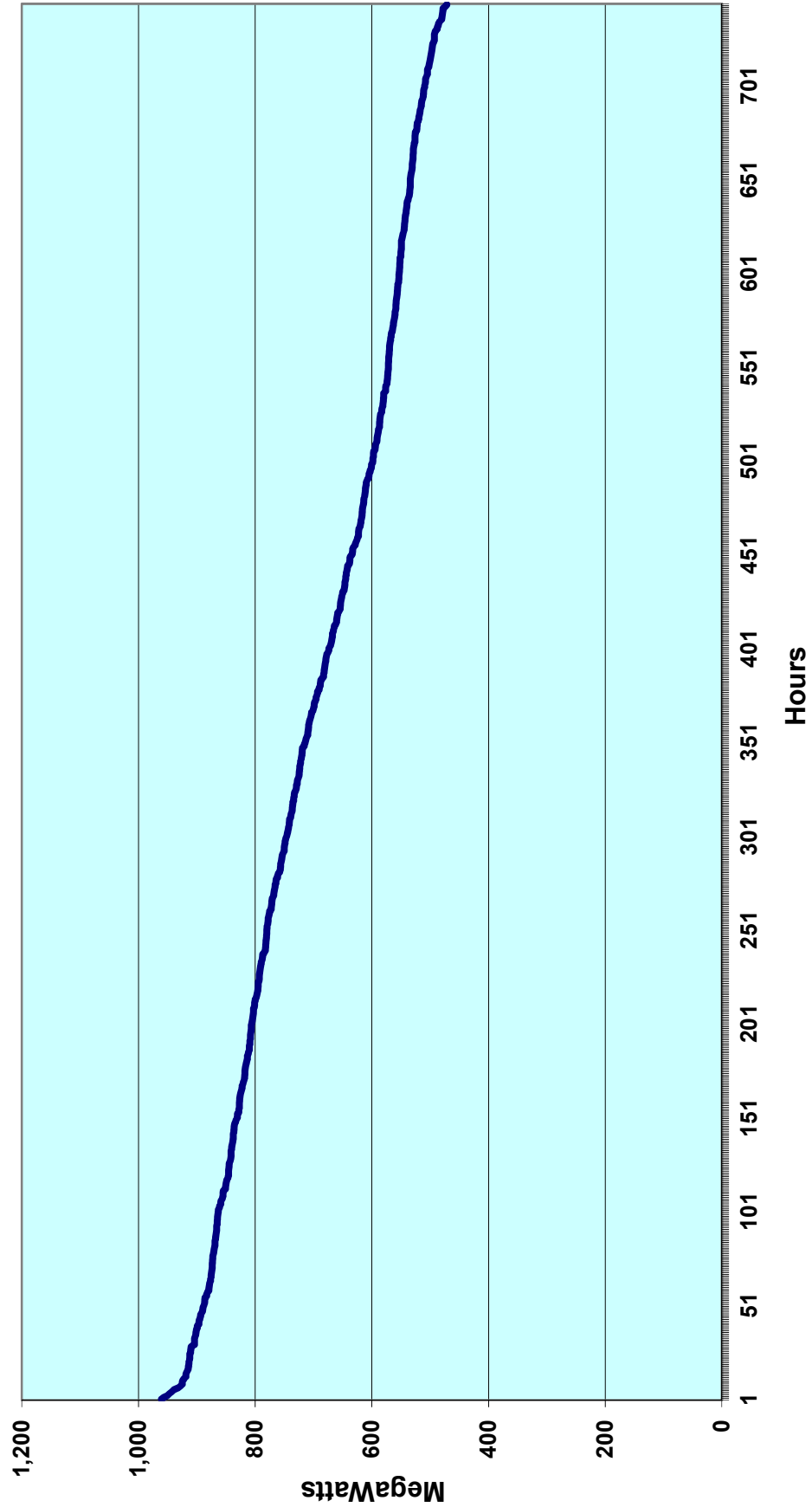
### Kentucky Power Company May 2020 Load Duration Curve (Internal Load)



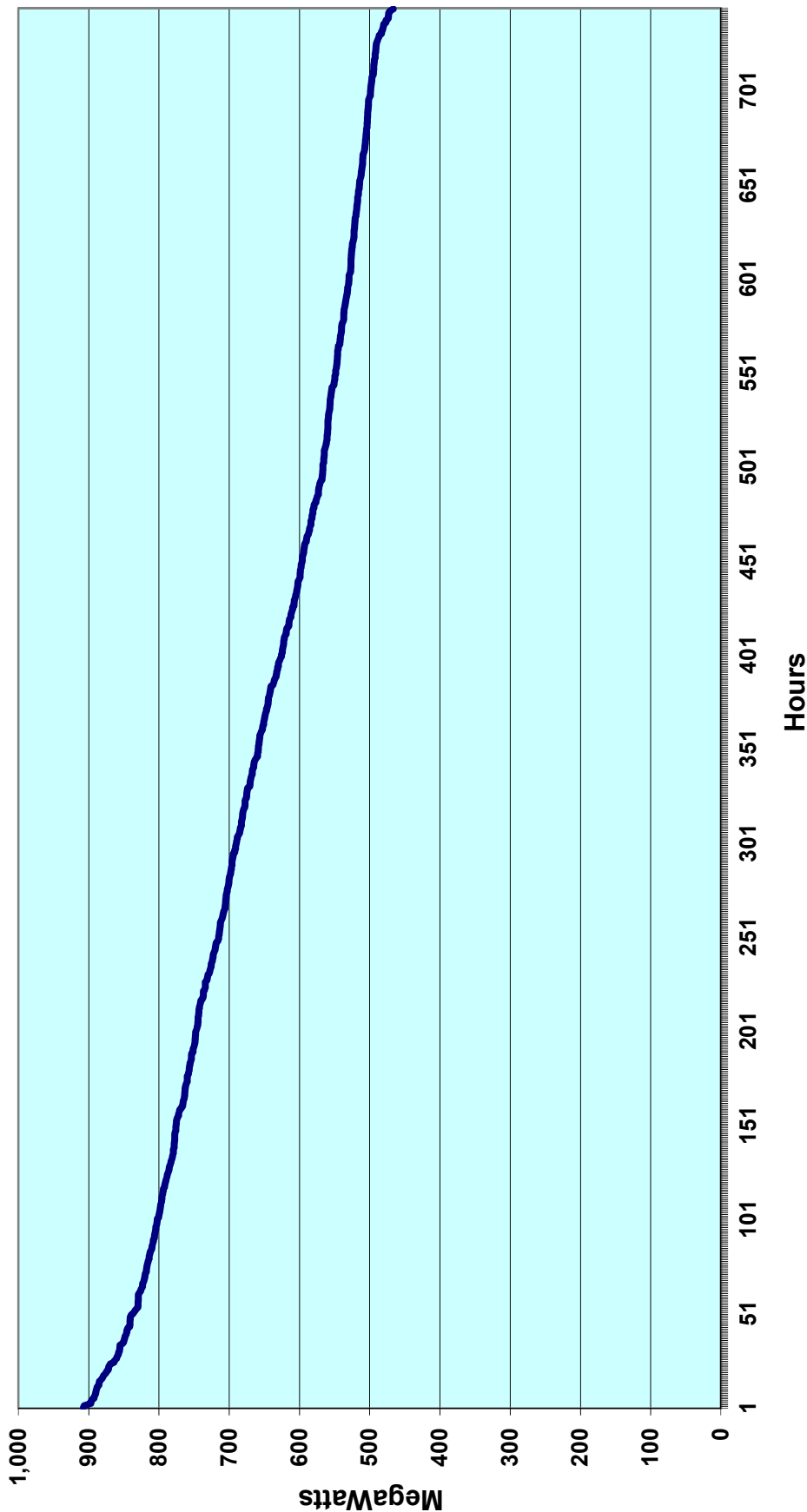
### Kentucky Power Company June 2020 Load Duration Curve (Internal Load)



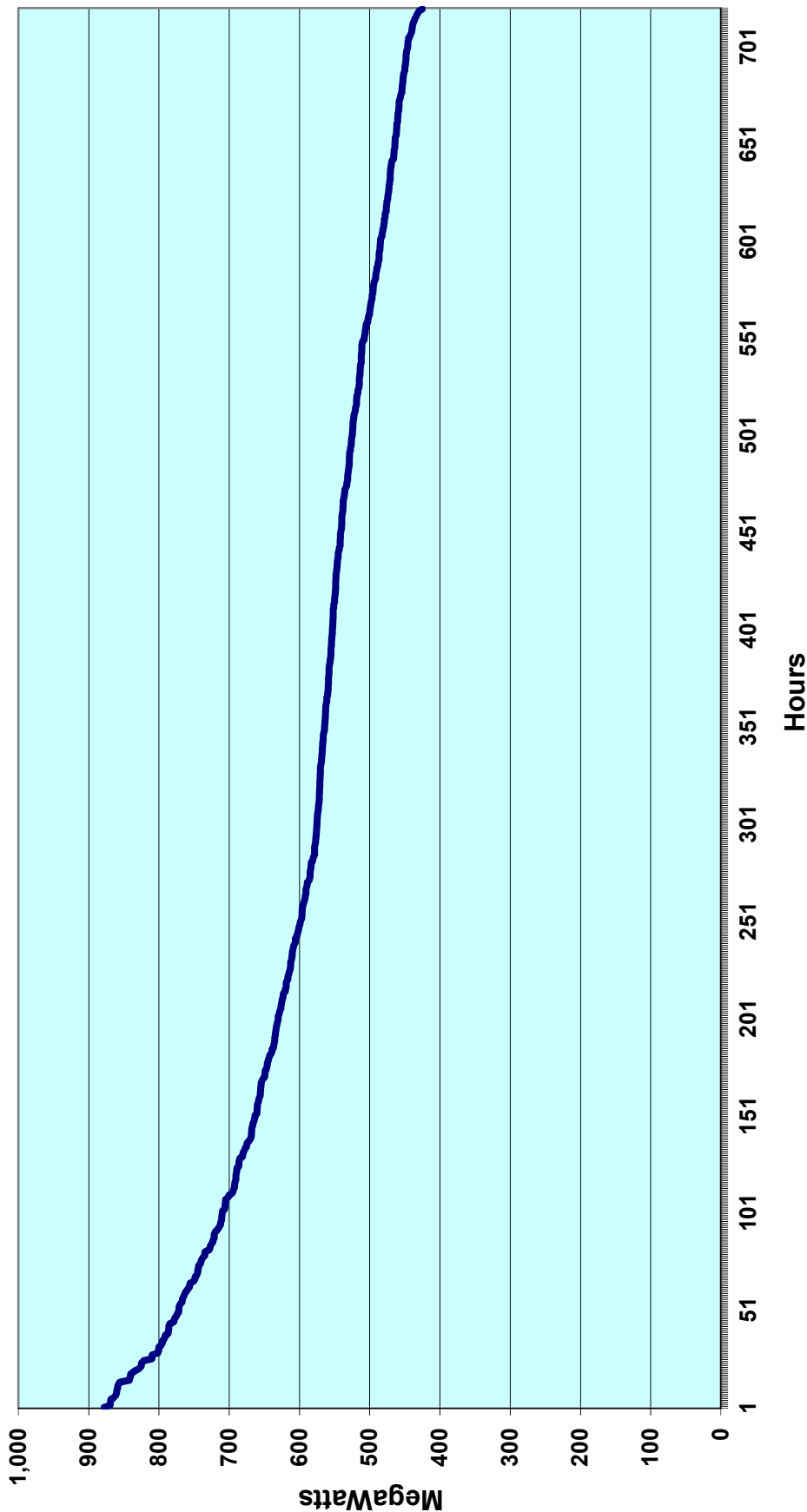
### Kentucky Power Company July 2020 Load Duration Curve (Internal Load)



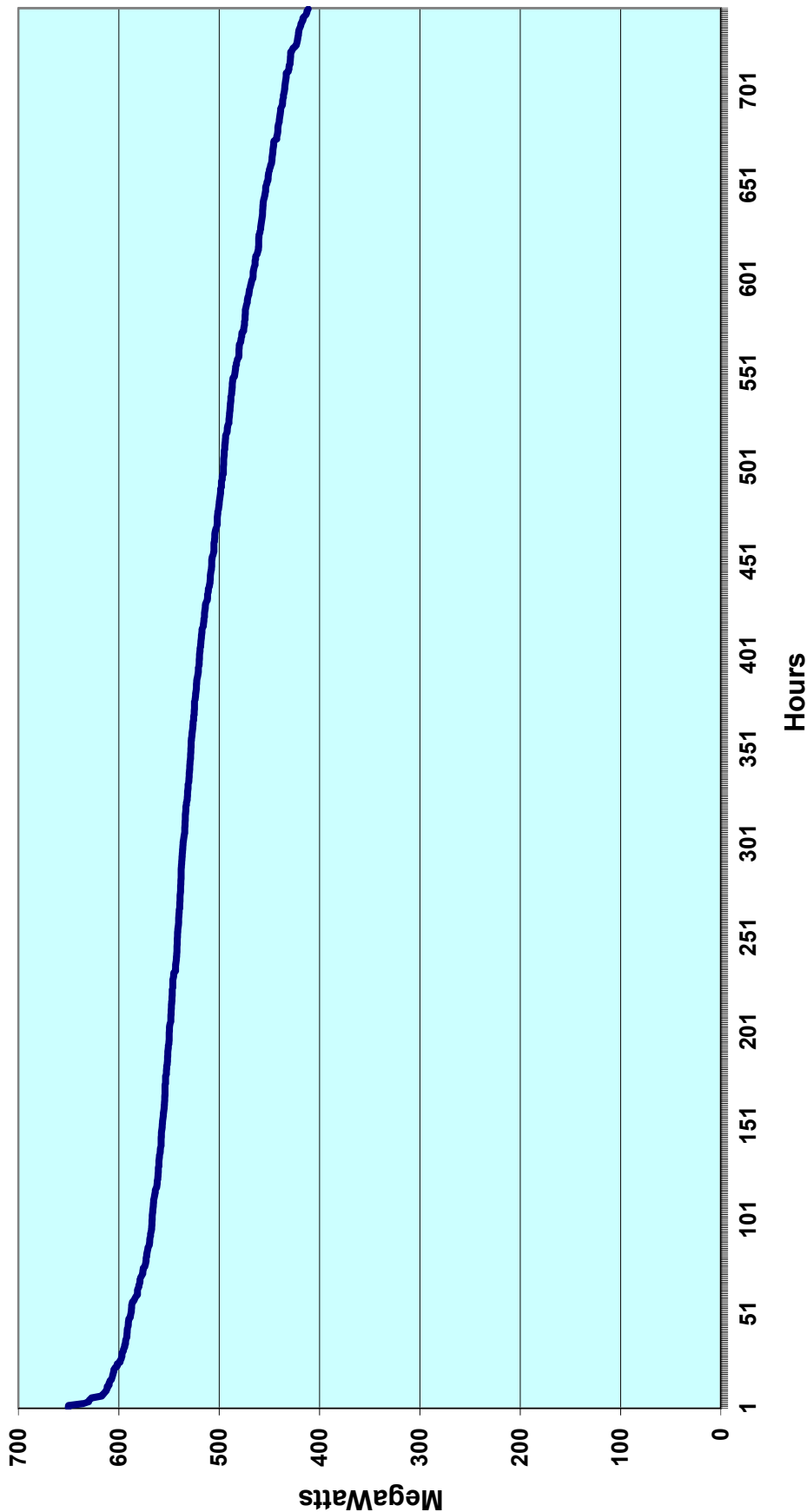
### Kentucky Power Company August 2020 Load Duration Curve (Internal Load)



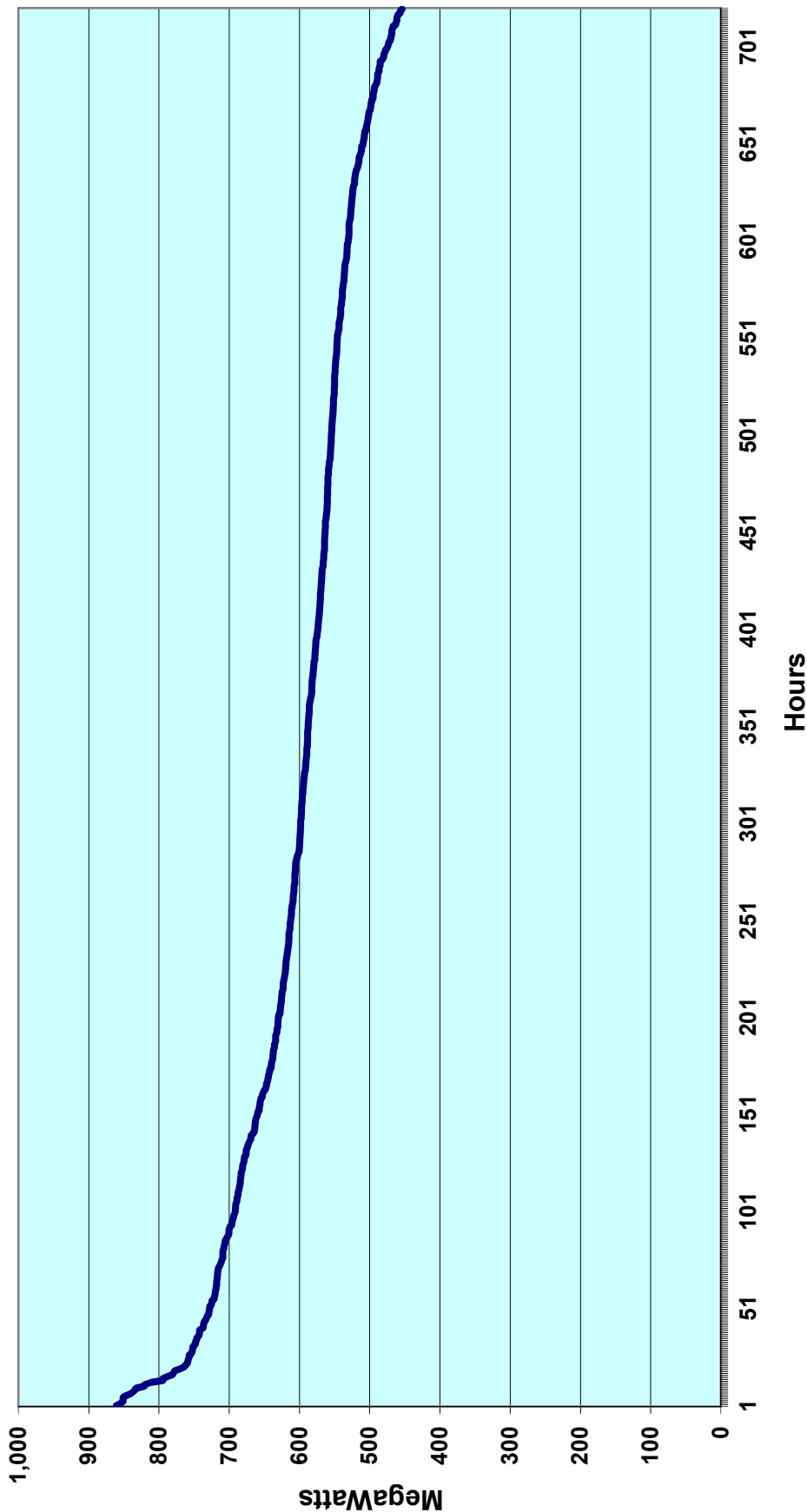
### Kentucky Power Company September 2020 Load Duration Curve (Internal Load)



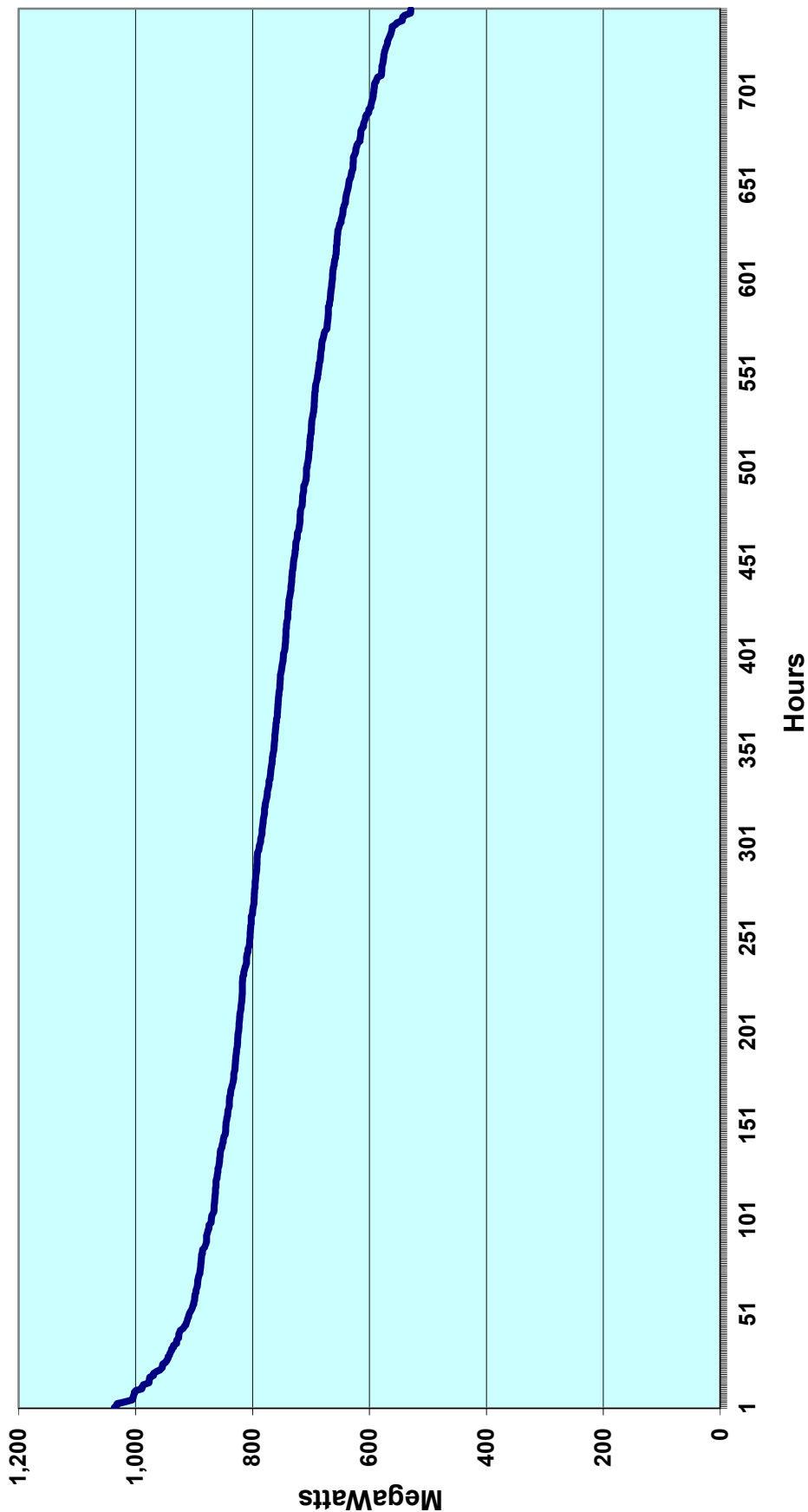
### Kentucky Power Company October 2020 Load Duration Curve (Internal Load)



### Kentucky Power Company November 2020 Load Duration Curve (Internal Load)

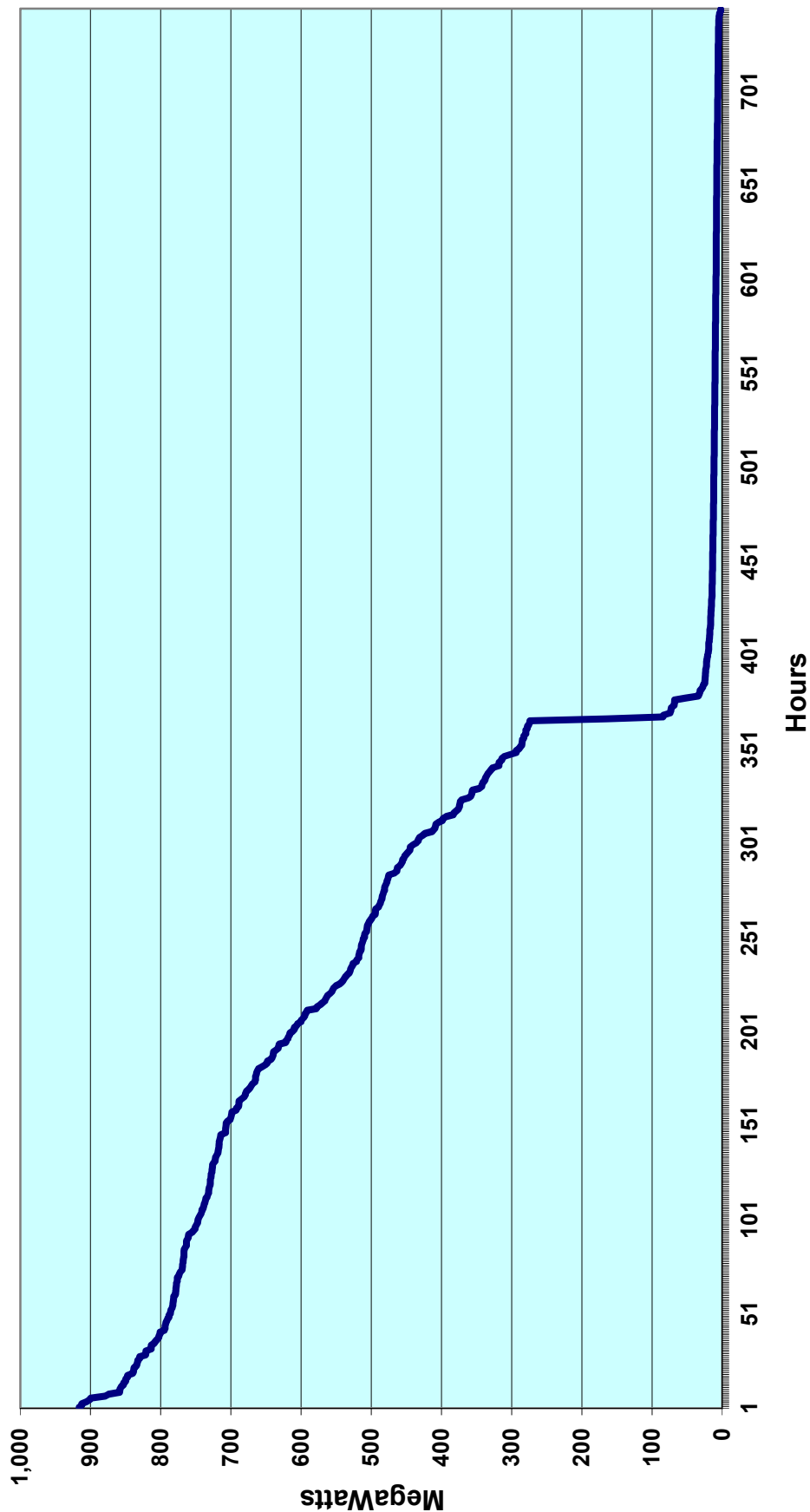


### Kentucky Power Company December 2020 Load Duration Curve (Internal Load)

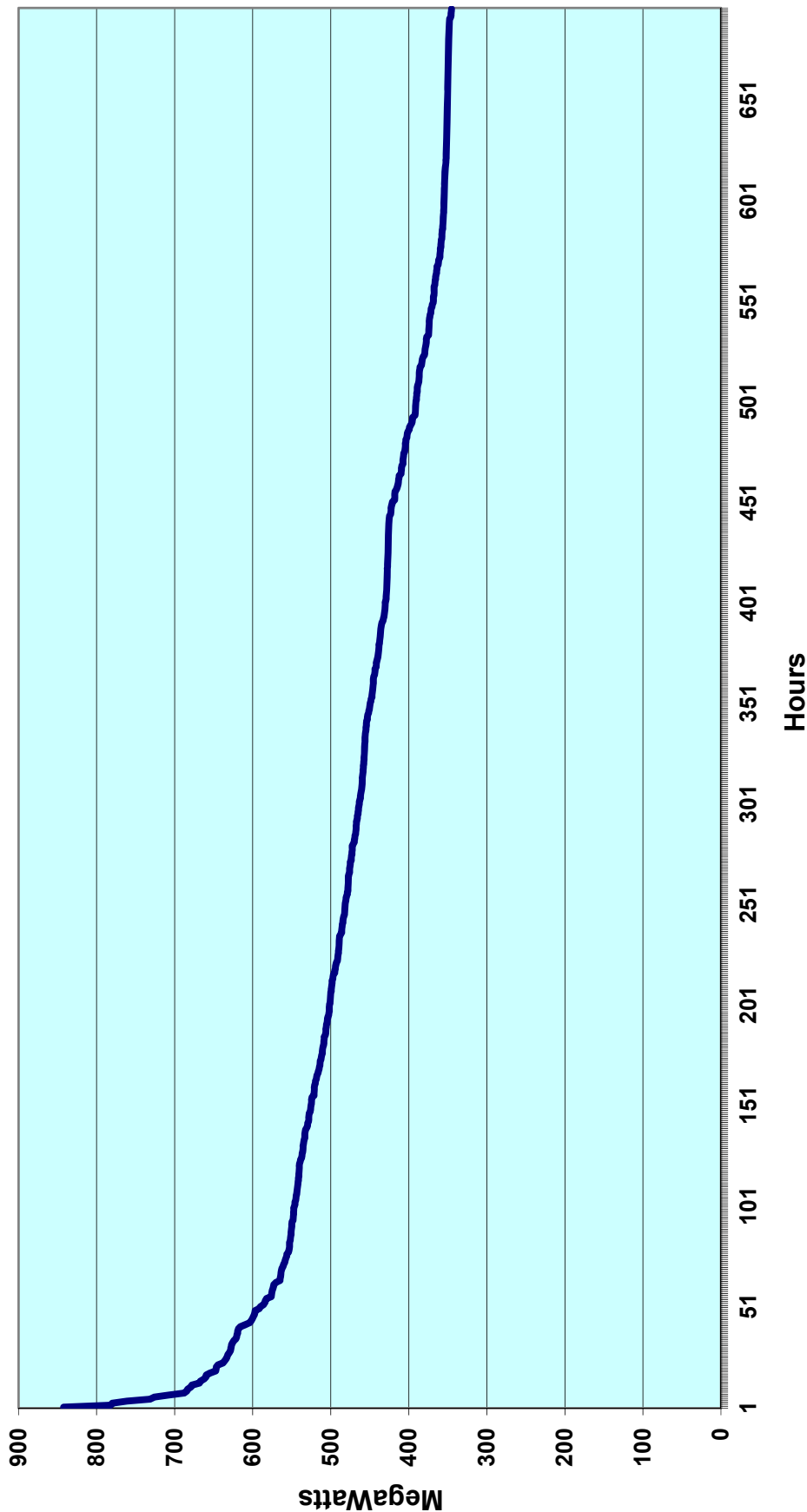




### Kentucky Power Company January 2020 Load Duration Curve (System Load)



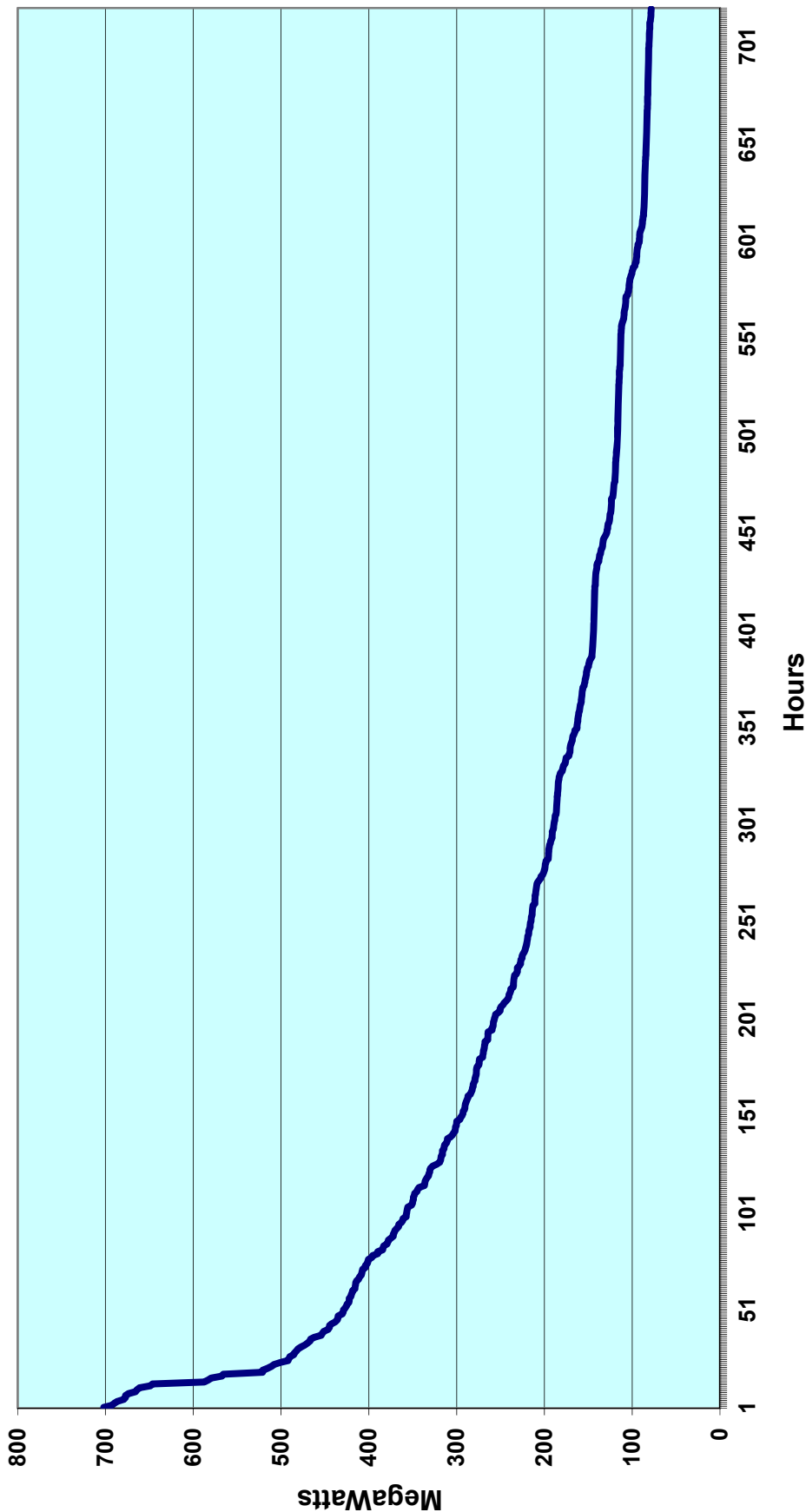
### Kentucky Power Company February 2020 Load Duration Curve (System Load)



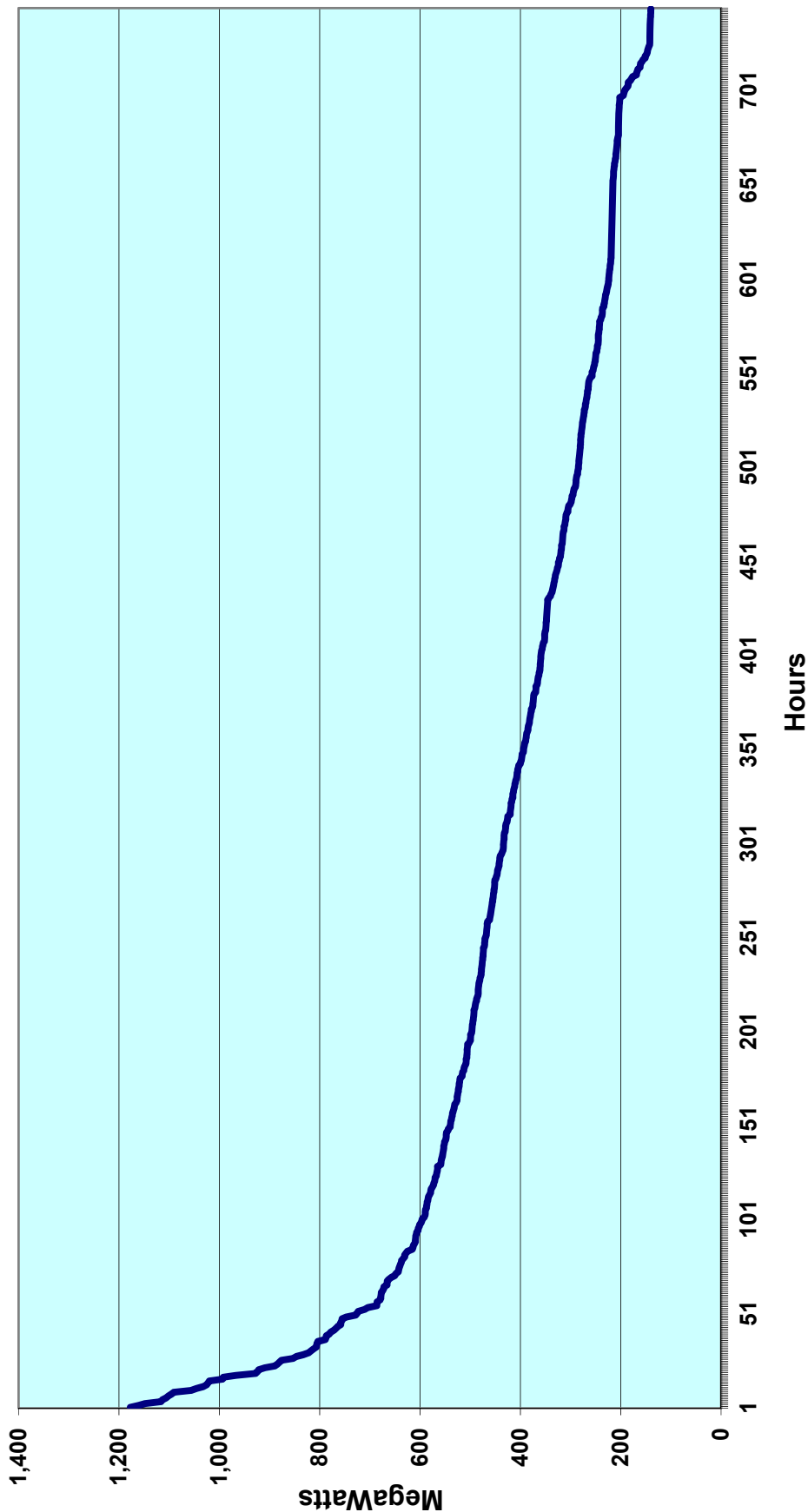
### Kentucky Power Company March 2020 Load Duration Curve (System Load)



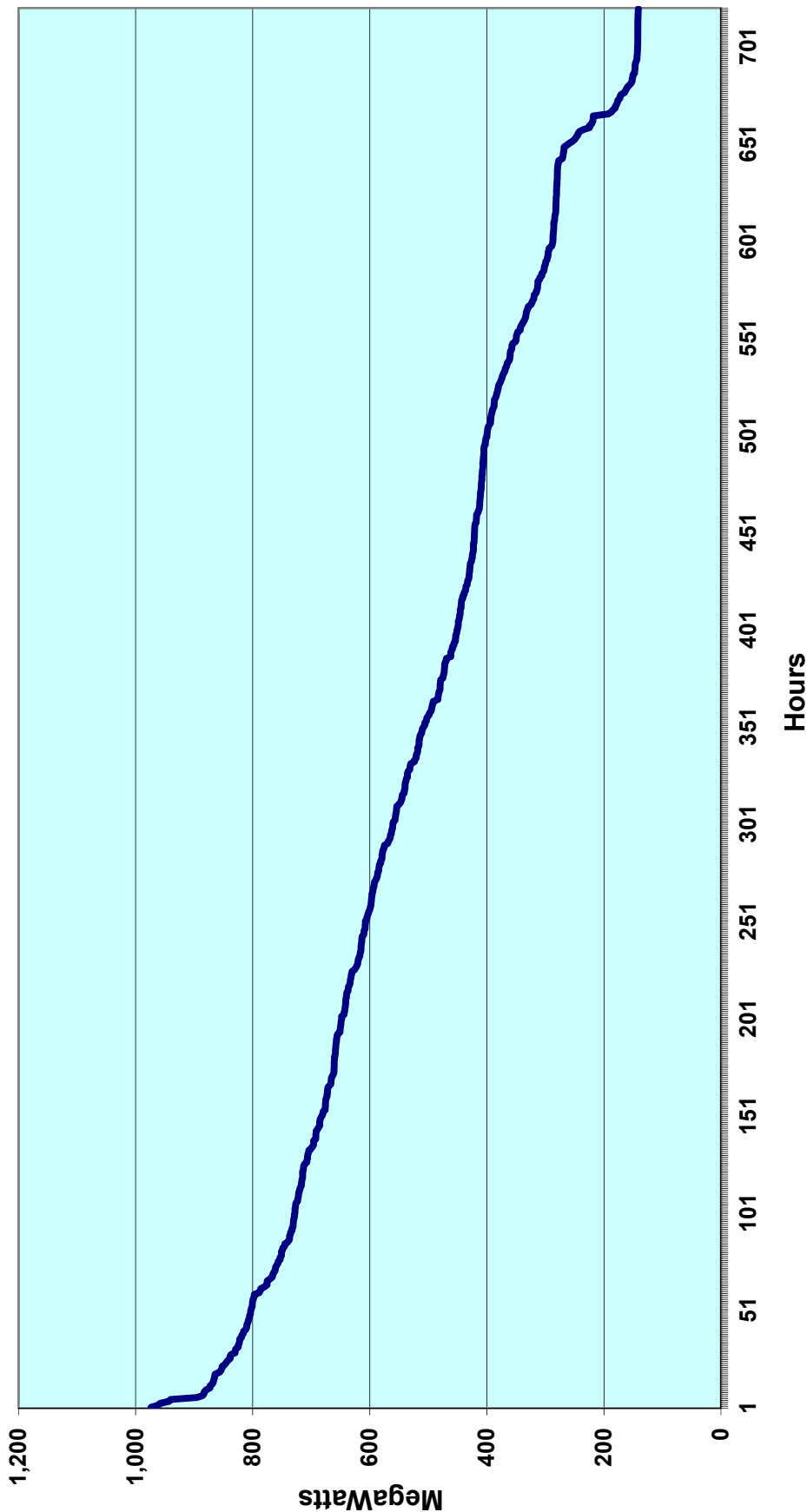
### Kentucky Power Company April 2020 Load Duration Curve (System Load)



### Kentucky Power Company May 2020 Load Duration Curve (System Load)



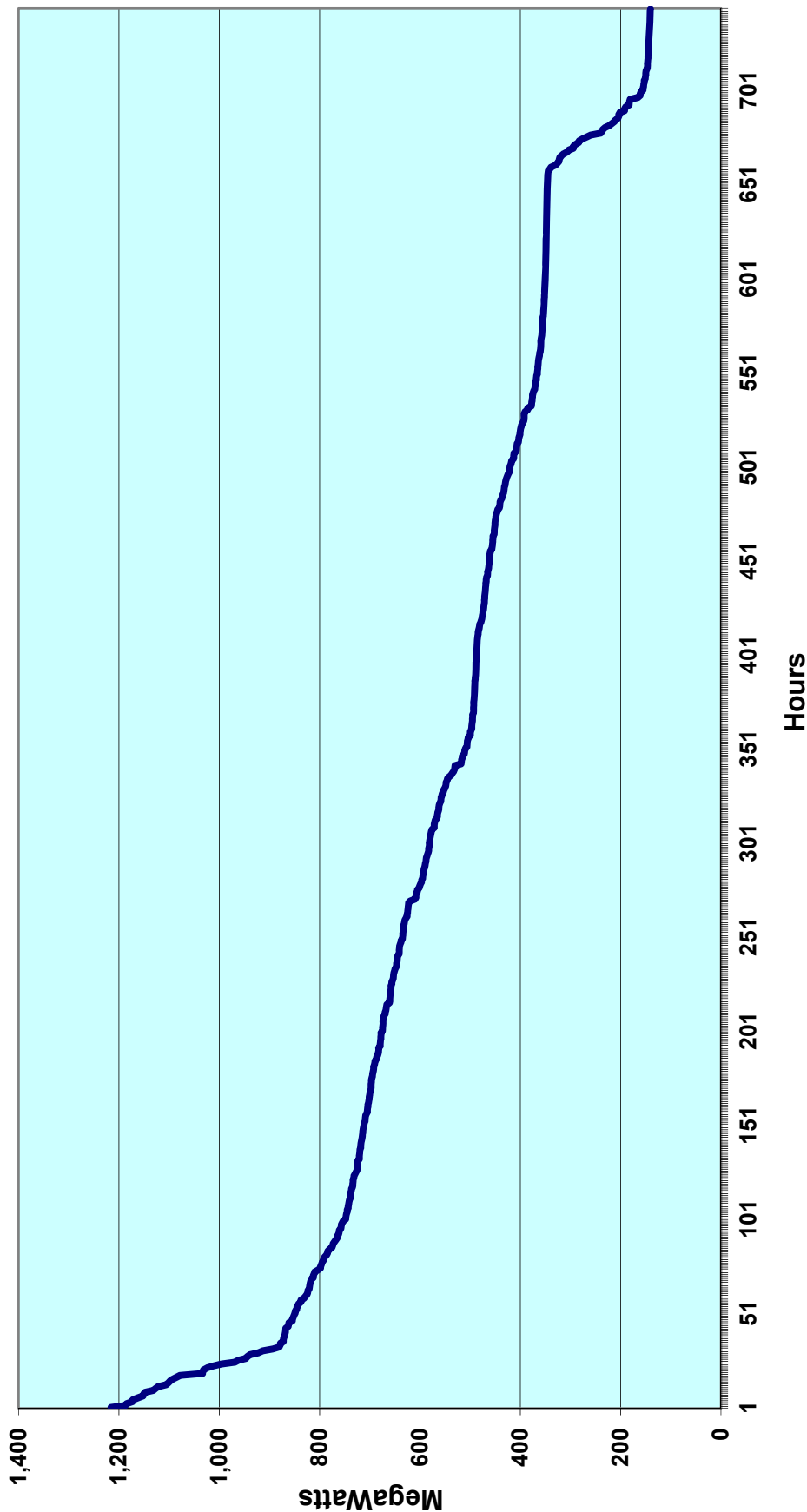
### Kentucky Power Company June 2020 Load Duration Curve (System Load)



### Kentucky Power Company July 2020 Load Duration Curve (System Load)

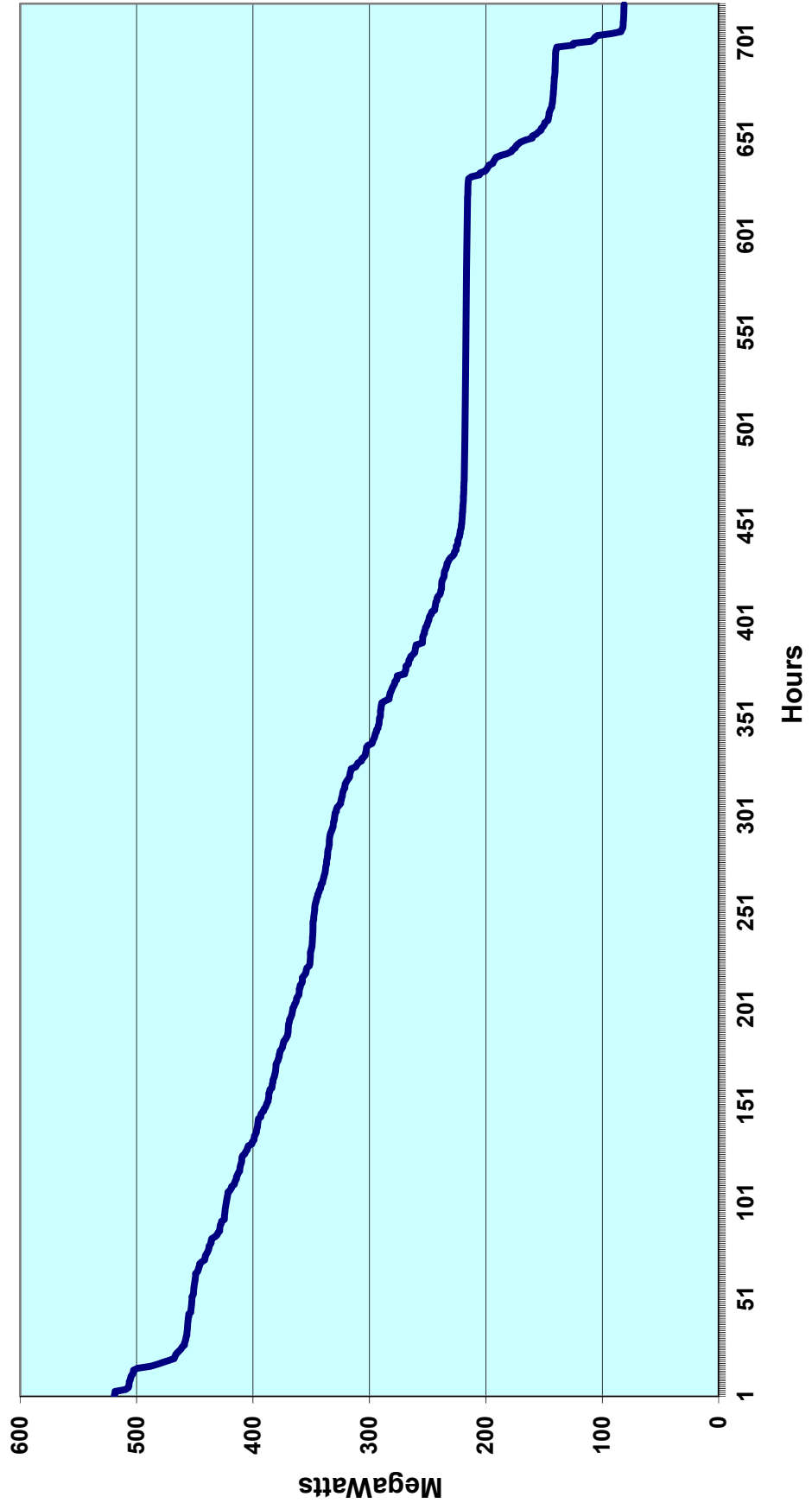


### Kentucky Power Company August 2020 Load Duration Curve (System Load)

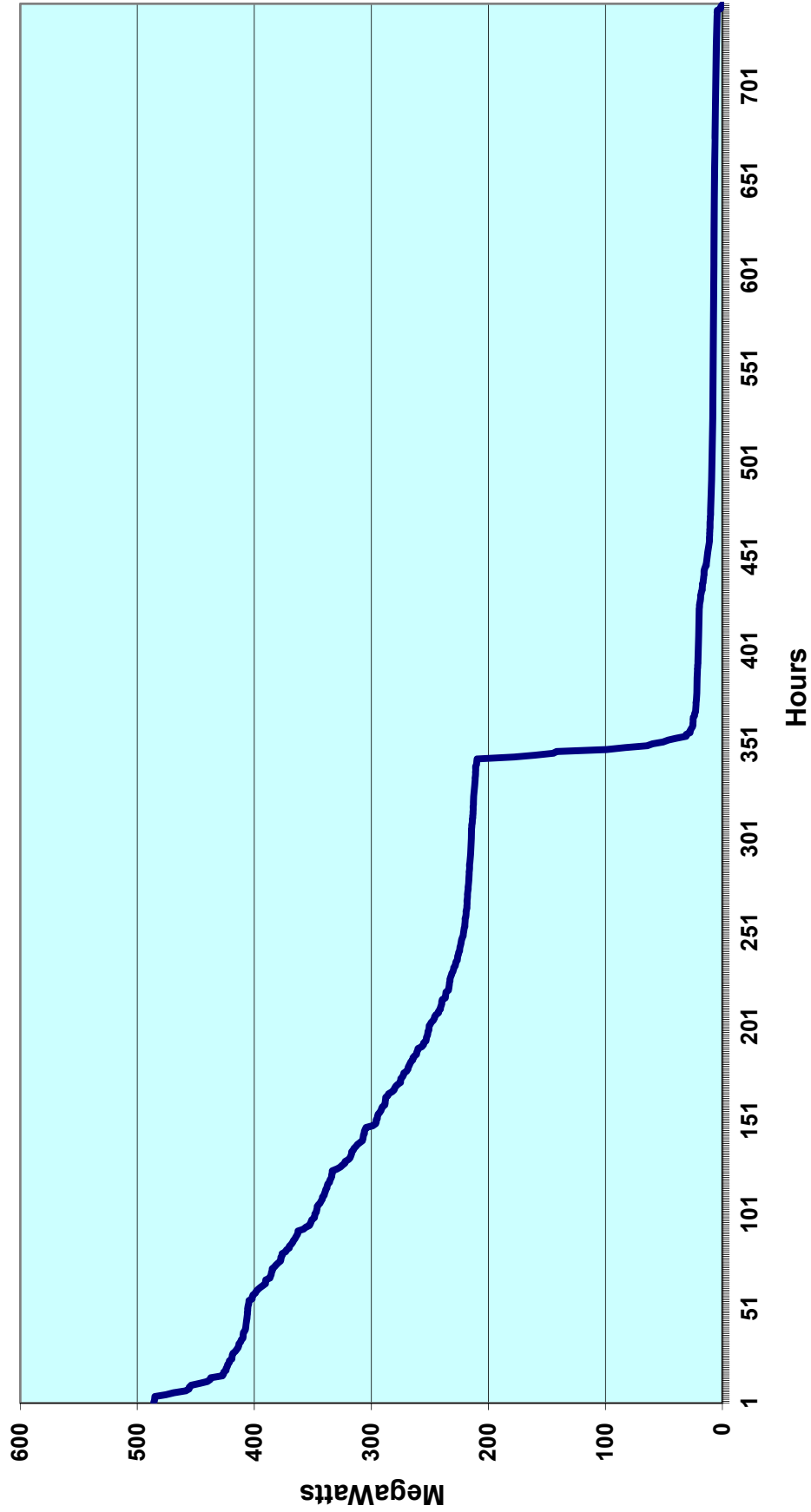




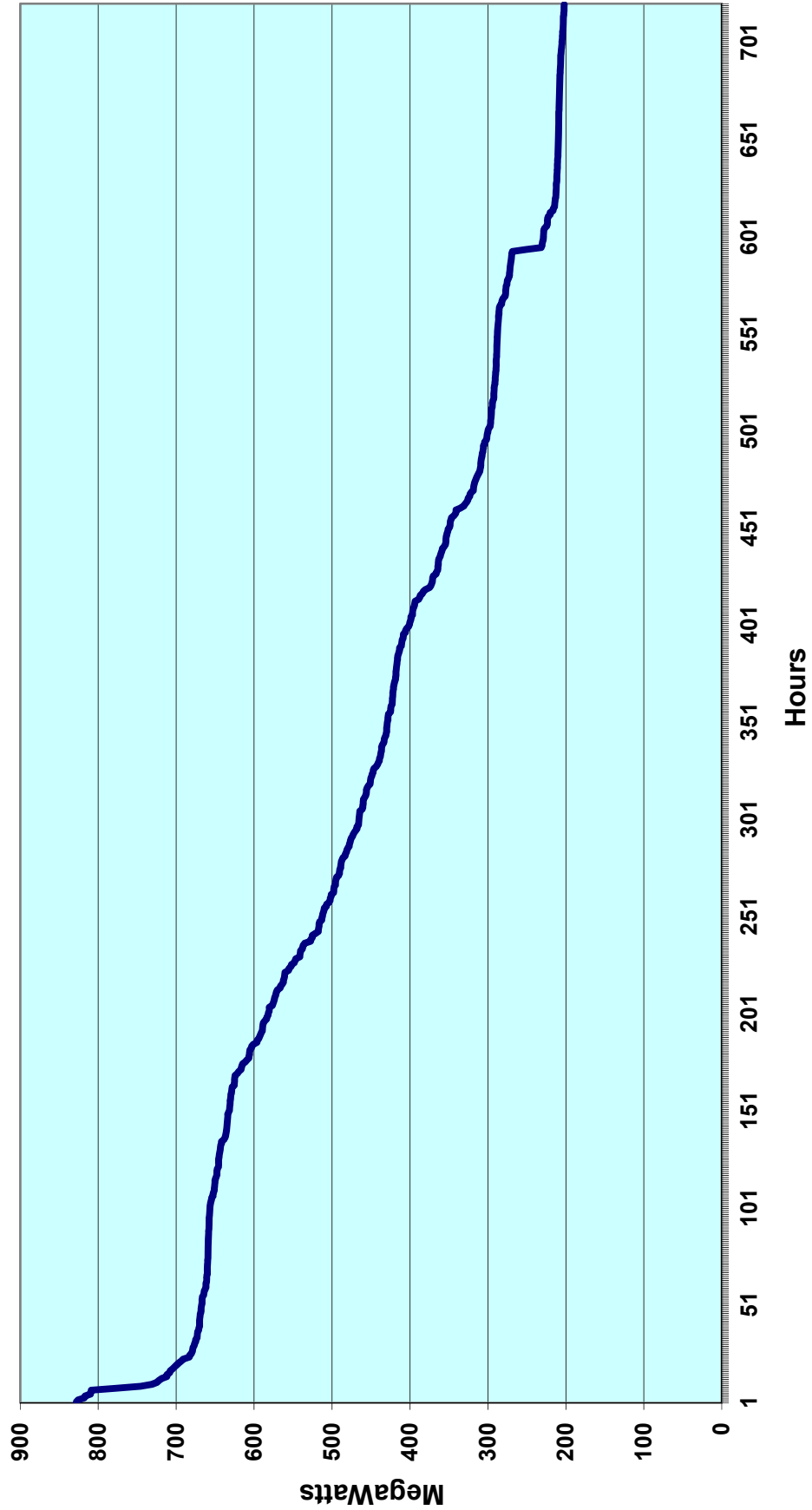
### Kentucky Power Company September 2020 Load Duration Curve (System Load)



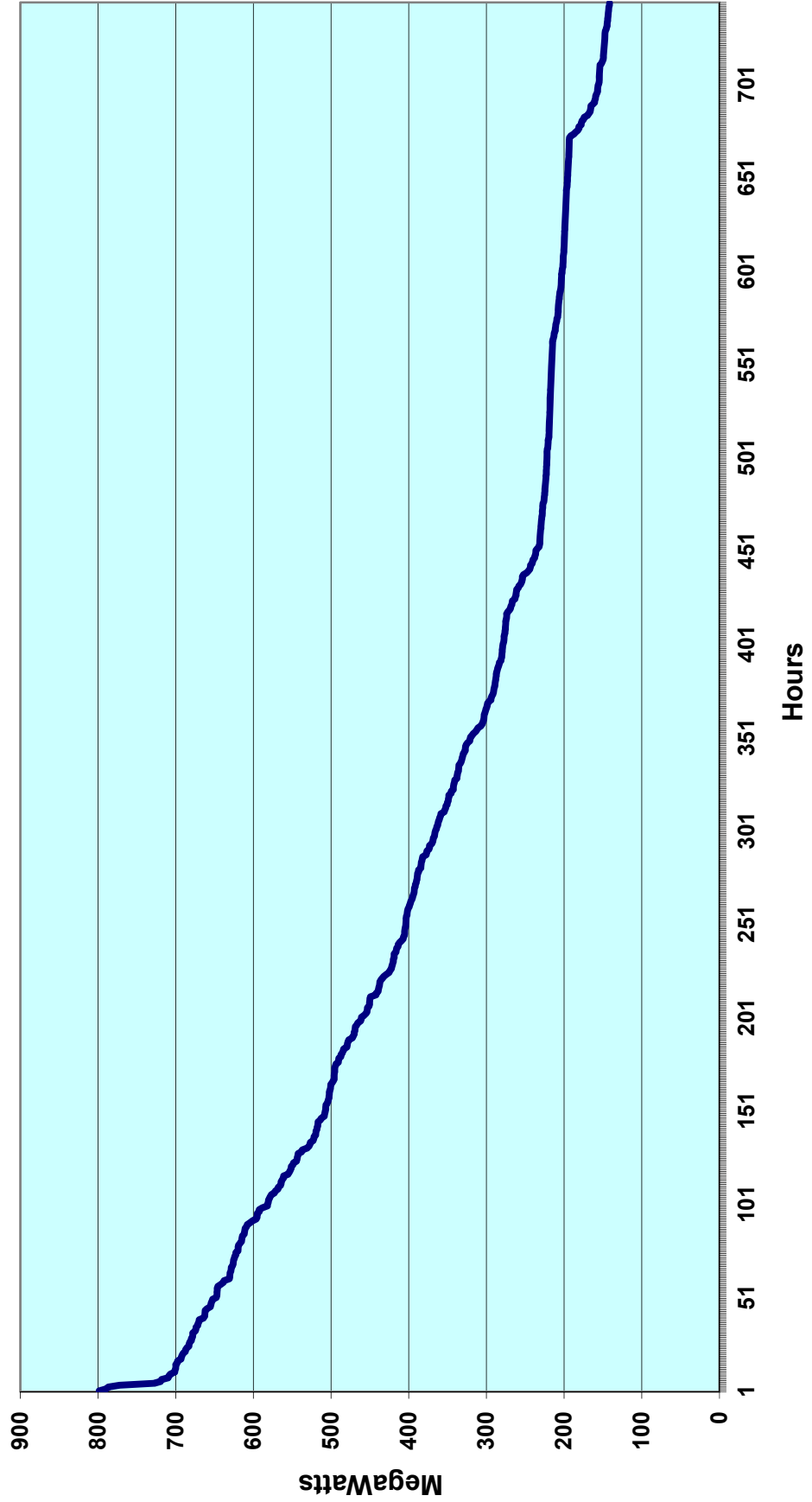
### Kentucky Power Company October 2020 Load Duration Curve (System Load)



### Kentucky Power Company November 2020 Load Duration Curve (System Load)



### Kentucky Power Company December 2020 Load Duration Curve (System Load)



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**DATA REQUEST**

- 3 Based on the most recent demand forecast, the base case demand and energy forecasts and high case demand and energy forecasts for the current year and the following four years. The information should be disaggregated into (a) native load (firm and non-firm demand) and (b) off-system load (both firm and non-firm demand). Please provide the information for both Kentucky Power Company individually and the AEP-East Power Pool (pursuant to the Commission's December 13, 2004 Order in the Rockport UPSA extension, Case No. 2004-00420).

**RESPONSE**

Please refer to Page 1 of KPCO\_R\_KPSC\_1\_3\_Attachment1 for Kentucky Power Company's forecasts of seasonal peak internal demands and annual internal energy requirements. In addition, the associated high forecast for seasonal peak internal demands and internal energy requirements are provided on Page 1.

The off-system energy sales forecasts for Kentucky Power Company are provided on Page 2 of KPCO\_R\_KPSC\_1\_3\_Attachment1. Forecasts of off-system peak demand for Kentucky Power Company have not been developed and are not available. In addition, high case forecasts for off-system energy sales and peak demand have not been developed and are not available.

The AEP Interconnection Agreement terminated on January 1, 2014 and the AEP-East Power Pool no longer exists. As a result, the requested information regarding the AEP East Power Pool is no longer available.

Witness: Brian K. West

**Kentucky Power Company  
 Base and High Forecast  
 Energy Sales (GWH) and Seasonal Peak Demand (MW)  
 2021 - 2025**

Year	Energy Sales		Summer Peak Demand		Preceding Winter Peak Demand	
	Base	High	Base	High	Base	High
2021	5,588	5,659	937	949	1,215	1,230
2022	5,554	5,652	932	948	1,218	1,240
2023	5,522	5,651	926	947	1,207	1,236
2024	5,489	5,631	918	942	1,192	1,223
2025	5,457	5,611	915	941	1,186	1,219

**Kentucky Power Company  
Forecast Off-System Energy Sales (GWh)  
2021 - 2025**

<u>Year</u>	<b>KPCo Off-System Sales</b>
2021	664
2022	675
2023	273
2024	891
2025	882

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**DATA REQUEST**

- 4           The target reserve margin currently used for planning purposes, stated as a percentage of demand. If changed from what was in use in 2001, include a detailed explanation for the change. Please provide the information for both Kentucky Power Company individually and the AEP-East Power Pool (pursuant to the Commission's December 13, 2004 Order in the Rockport UPSA extension, Case No. 2004-00420).

**RESPONSE**

The AEP-East operating companies are required to comply with the PJM mandated reserve margin following its October 1, 2004 integration of AEP's Eastern System into the PJM Interconnection.

The installed reserve margin requirement (IRM) is recalculated each year based on a five-year average of PJM generating units reliability, PJM load shape, and assistance available from neighboring regions. In addition, Kentucky Power's responsibility to PJM depends on its twelve-month history of generator reliability or Unforced Capacity value and its peak demand diversity in relation to the PJM total load.

As shown on KPCO\_R\_KPSC\_1\_5\_Attachment1, for the delivery periods 2021/22 through 2025/26, PJM set the IRM at 14.7%, 14.5%, 14.4%, 14.4%, and 14.4%, respectively. Kentucky Power assumed the same IRM levels for PJM and other planning purposes.

The AEP Interconnection Agreement terminated on January 1, 2014, and the AEP-East Power Pool no longer exists. The requested information regarding the AEP-East Power Pool no longer exists.

Witness: Brian K. West



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**DATA REQUEST**

- 5           Projected reserve margins stated in megawatts and as a percentage of demand for the current year and the following 4 years. Identify projected deficits and current plans for addressing these. For each year identify the level of firm capacity purchases projected to meet native load demand. Please provide the information for both Kentucky Power Company individually and the AEP-East Power Pool (pursuant to the Commission's December 13, 2004 Order in the Rockport UPSA extension, Case No. 2004-00420)

**RESPONSE**

KPCO\_R\_KPSC\_1\_5\_Attachment1 provides projected PJM peak demands, capabilities, and margins for Kentucky Power for PJM Planning Years 2021/22 through 2025/26.

The AEP Interconnection Agreement terminated on January 1, 2014, and the AEP-East Power Pool no longer exists. The requested information regarding the AEP-East Power Pool no longer exists.

Witness: Brian K. West

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**DATA REQUEST**

- 6 A list that identifies scheduled outages or retirements of generating capacity during the current year and the following four years.

**RESPONSE**

For a list of scheduled outages for the years 2021 - 2025, please see attachments KPCO\_R\_KPSC\_1\_6\_Attachment1 and KPCO\_R\_KPSC\_1\_6\_ConfidentialAttachment2.

The Rockport Unit Power Agreement with AEP Generating Company (AEG), under which the Company purchases 30% of AEG's 50% share of the output of the Rockport Plant (393 MW), expires in December 2022.

Witness: Brian K. West

Kentucky Power Generating Unit Scheduled Outages for the Period January - March 2021			
Unit Name	Event Start	Event End	Event Description
Big Sandy 1	1/13/21 12:45 AM	1/22/21 2:16 PM	Inspect and repair Boiler and Feedpump.
Big Sandy 1	2/20/21 12:44 AM	2/26/21 3:33 PM	Inspect and repair Boiler, repair Nitrogen Supply leak on the West GSU, clean Cooling Tower Inlet Screens, repack Drum Blowdown Valve, replace Hydrogen Supply Regulator, Left BFP Governor Inspect and repair Valve Steam leak, repair Hand shutoff on HP Heater Vents and River Makeup Inspect and repair Building Switchgear.
Big Sandy 1	3/2/21 12:00 AM	3/4/21 2:00 PM	Inspect and repair Boiler Outlet Duct
Mitchell 1	1/23/21 12:00 AM	2/4/21 11:55 PM	Inspect and repair #11 turbine bearing and 16 pulv, inspect boiler for slag due to HS burn, and repair condenser leak, boiler hydro and air test.
Mitchell 1	3/1/21 12:00 AM	3/7/21 5:00 PM	Sidewall Tube Leak.
Mitchell 2	1/12/21 7:00 AM	1/19/21 12:00 AM	to inspect ID Fan Hubs, inspect and repair FMO-202, and replace #21 Clinker Grinder



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**DATA REQUEST**

- 7 Identify all planned base load or peaking capacity additions to meet native load requirements over the next 10 years. Show the expected in service date, size and site for all planned additions. Include additions planned by the utility, as well as those by affiliates, if constructed in Kentucky or intended to meet load in Kentucky. Please provide the information for both Kentucky Power Company individually and the AEP-East Power Pool (pursuant to the Commission's December 13, 2004 Order in the Rockport UPSA extension, Case No. 2004-00420).

**RESPONSE**

Kentucky Power does not plan to add base load or peaking capacity to meet native load requirements over the next 10 years.

Kentucky Power's 2019 Integrated Resource Plan projected as part of its Preferred Plan the addition of 473 MW of solar and wind resources (including 20 MW of solar assumed to be installed in 2022) during the 2021 through 2030 time period. The Preferred Plan is not a commitment by Kentucky Power to the identified specific resource additions. Kentucky Power has not yet identified specific resources to be added.

The AEP Interconnection Agreement terminated on January 1, 2014, and the AEP-East Power Pool no longer exists. The requested information regarding the AEP-East Power Pool no longer exists.

Witness: Brian K. West

Kentucky Power Company  
KPSC Case No. Administrative Case No. 387 - 2021  
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**DATA REQUEST**

- 8 a&b**        The following transmission energy data for the just completed calendar year and the forecast for the current year and the following four years:
- a. Total energy received from all interconnections and generation sources connected to the transmission system.
  - b. Total energy delivered to all interconnections on the transmission system.

**RESPONSE**

a. and b. Please see KPCO\_R\_KPSC\_1\_8\_Attachment1 for 2020 actual energy receipt and delivery data. The Company does not maintain forecast data by interconnection or generation source. Total-system energy forecasts were provided in KPCO\_R\_KPSC\_1\_3\_Attachment1.

Witness: Brian K. West

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**DATA REQUEST**

**8 c&d**           The following transmission energy data for the just completed calendar year and the forecast for the current year and the following four years:

c. Peak load capacity of the transmission system.

d. Peak demand for summer and winter seasons on the transmission system.

**RESPONSE**

c. The maximum amount of electric energy that can be transmitted through a transmission network is a function of the level of the load and generation connected to the transmission system as well as the level and direction of transmission service into, out of, and through the network. Therefore, the ‘Peak Load Capacity’ of the transmission system cannot be quantified as a single value.

The Kentucky Power transmission system capacity is designed to serve the existing and projected load. It is also designed to reliably serve the load for any single contingency outage of a line, transformer or generator. Based on information currently available, the existing transmission system, together with the transmission capacity additions described in KPCO\_R\_KPSC\_1\_9\_Attachment1, will provide adequate capacity to serve the existing and projected loads provided in response to part d of this request.

d. Please refer to KPCO\_R\_KPSC\_1\_8\_Attachment2 for the requested information.

Witness: Brian K. West

**Kentucky Power Company**  
**Seasonal Peak Demand**  
**Actual 2020 and Forecast 2021-2025**

<b>Year</b>	<b>Summer Peak Demand (MW)</b>	<b>Preceding Winter Peak Demand (MW)</b>
2020	961*	1,168*
2021	937	1,215
2022	932	1,218
2023	926	1,207
2024	918	1,192
2025	915	1,186

**\*Based on Actual Data**



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**DATA REQUEST**

- 9 Identify all planned transmission capacity additions for the next 10 years. Include the expected in-service date, size and site for all planned additions and identify the transmission need each addition is intended to address.

**RESPONSE**

Please see KPCO\_R\_KPSC\_1\_9\_Attachment1 for the requested information.

Witness: Brian K. West

**\*ALL CAPACITIES AND IN SERVICE DATES APPROXIMATE/SUBJECT TO CHANGE**

**Hazard – Wooton 161 kV Project**

This project addresses thermal violations, equipment material condition, performance, and risk concerns identified with the Hazard-Wooton 161 kV line and 161/138 kV transformer.

Specifically, this project will rebuild approximately 6.6 miles of the Hazard - Wooton 161 kV line and replace three, single phase 161/138 kV transformers at Hazard with a single higher capacity three-phase transformer. Additionally, this project will replace the existing 138/69 kV transformers with new 138/69 kV 130 MVA transformers due to identified equipment material condition, performance, and risk concerns. The revised in-service date for this project is June 2021.

- **Hazard – Wooton 161 kV Line**  
Existing Summer Emergency Conductor Capacity: 215 MVA  
Proposed Summer Emergency Conductor Capacity: 390 MVA
- **Hazard 161/138 kV Transformer**  
Existing Nameplate Capacity: 135 MVA  
Proposed Nameplate Capacity: 350 MVA
- **Hazard 138/69 kV Transformer #1**  
Existing Nameplate Capacity: 50 MVA  
Proposed Nameplate Capacity: 130 MVA
- **PJM Baseline (B2761):** Please see pages 3-4  
<https://www.pjm.com/-/media/committees-groups/committees/srtepw/20190423/20190423-reliability-analysis-update.ashx>
- **PJM Supplemental (S1412):** Please see pages 13-15  
<https://www.pjm.com/-/media/committees-groups/committees/srtepw/20171218/20171218-reliability-analysis-update.ashx>

**Wooton - Stinnett 161 kV Project**

The proposed project would rebuild the approximately 11 mile Wooton - Stinnett 161 kV line. The project would address equipment material conditions, performance, and risk concerns associated with the 1940's wood structure line. Current projected in service date for the project November 2024.

- **Wooton – Stinnett 161 kV Line**  
Existing Summer Emergency Conductor Capacity: 215 MVA  
Proposed Summer Emergency Conductor Capacity: 390 MVA
- **PJM Supplemental (S2428):** Please see pages 81-83  
<https://pjm.com/-/media/committees-groups/committees/srtepw/postings/aep-local-plan-submission-of-the-supplemental-projects-for-2021-rtep.ashx>

### **Stinnett - Pineville 161 kV Project**

The proposed project would rebuild the approximately 30 mile Wooton - Stinnett 161 kV line. The project would address equipment material conditions, performance, and risk concerns associated with the 1940's wood structure line. Current projected in service date for the project December 2027.

- **Stinnett - Pineville 161 kV Line**  
Existing Summer Emergency Conductor Capacity: 215 MVA  
Proposed Summer Emergency Conductor Capacity: 390 MVA
- **PJM Supplemental (S2428):** Please see pages 81-83  
<https://pjm.com/-/media/committees-groups/committees/srtepw/postings/aep-local-plan-submission-of-the-supplemental-projects-for-2021-rtep.ashx>

### **Leslie Transformer Replacement**

This project will replace the 161/69 kV transformer at Leslie station. The transformer is being replaced due to insulation and short circuit strength breakdown. Current projected in-service date for the transformer replacement is December 2021.

- **Leslie Transformer**  
Existing Nameplate Capacity: 90 MVA  
Proposed Nameplate Capacity: 130 MVA
- **PJM Supplemental (S1547):** Please see page 96  
<https://www.pjm.com/-/media/committees-groups/committees/srtepw/20180327/20180327-reliability-analysis-update.ashx>

### **East Park 138 kV Transmission Line**

This project will construct approximately 3 miles of 138 kV line to connect the existing Chadwick – Kentucky Electric Steel 138 kV line to the proposed Moore Hollow 138 kV substation located in the East Park Industrial Center. The project will serve as a transmission service delivery point to industrial customers at the East Park Industrial Center. This project is on hold and the current in service date is dependent on the customer.

- **East Park 138 kV transmission line**  
Proposed Summer Emergency Conductor Capacity: 413 MVA
- **PJM Supplemental (S1687):** Please see pages 62-64  
<https://www.pjm.com/-/media/committees-groups/committees/srtepw/20180831/20180831-reliability-analysis-update.ashx>

### **Boyd County Area Improvements**

This project will construct approximately 3 miles of 138 kV line to connect the proposed Moore Hollow 138 kV substation located in the East Park Industrial Center to the proposed Ramey substation off the existing Bellefonte – Grangston 138 kV circuit. The project will serve as the second transmission source to industrial customers at the East Park Industrial Center. The project also addresses equipment material condition performance, and risk concerns associated with the Hoods Creek Station, while establishing a new distribution source to the area at Ramey. This project is on hold and the current in service date is dependent on the customer.

- **Moore Hollow - Ramey 138 kV transmission line**  
Proposed Summer Emergency Conductor Capacity: 413 MVA
- **PJM Supplemental (S1687):** Please see pages 62-64  
<https://www.pjm.com/-/media/committees-groups/committees/srrtep-w/20180831/20180831-reliability-analysis-update.ashx>

### **Chadwick Station Improvements and Leach Area Improvements**

This project will Expand existing Chadwick station and install a second 138/69 kV transformer at a new 138 kV bus tied into the Bellefonte – Grangston 138 kV circuit. The 69 kV bus will be reconfigured into a ring bus arrangement to tie the new transformer into the existing 69 kV via installation of four 3000A 63 kA 69 kV circuit breakers. Remote end will be required at Grangston station. Remote end will be required at Bellefonte station. Relocate the Chadwick – Leach 69 kV circuit within Chadwick station. The Bellefonte – Grangston 138 kV circuit currently spans over top of Chadwick station, but does not terminate. Work will be AEP completed to bring the circuit into Chadwick station at the newly established 138 kV bus. The existing Chadwick – Tri-State #2 138 kV circuit will be reconfigured within the station to terminate into the newly established 138 kV bus #2 at Chadwick due to constructability aspects. Chadwick – Leach and Chadwick England Hill 69 kV circuits (share same structures for majority of circuits). Reconductor circuits with 795 ACSS conductor. A LiDAR survey and a sag study will need to be performed to confirm that the reconducted circuits would maintain acceptable clearances. Replace line risers towards Leach station. Replace 20 kA 69 kV circuit breaker ‘F’ with a new 3000A 40 kA 69 kV circuit breaker. Rebuild 336 ACSR portion of Leach - Miller S.S 69 kV line section (~0.3 miles). Replace line risers towards Chadwick station. The proposed project in-service date is November 2021

- **Chadwick Transformer #2**  
Proposed Nameplate Capacity: 200 MVA
- **Chadwick – England Hill 69 kV transmission line**  
Proposed Summer Emergency Conductor Capacity: 413 MVA
- **Chadwick – Leach 69kV transmission line**  
Proposed Summer Emergency Conductor Capacity: 413 MVA
- **PJM Baseline (B3118):** Please see pages 8-10  
<https://www.pjm.com/-/media/committees-groups/committees/srrtep-w/20190520/20190520-reliability-analysis-update.ashx>

### **Kenwood Looped Service**

A green field line is to be constructed (Kenwood 69kV Extension) and to be operated at 46kV. The new extension will provide looped service into Kenwood substation. It will be approximately 2.25 miles of single circuit construction through mountainous terrain in Floyd and Johnson Counties in Kentucky. The extension will tap the existing Prestonsburg-Thelma 46kV Line around structure K346- 50. Rebuild the existing ~1.77 mi Kenwood Tap line from Kenwood to Van Lear Tap Structure on the existing center line. The current projected in-service date for this project is November 2023.

- **Kenwood 69 kV transmission line**  
Proposed Summer Emergency Conductor Capacity: 61 MVA
- **PJM Supplemental (S# TBD):** Please see pages 33-35  
<https://pjm.com/-/media/committees-groups/committees/srretp-w/2021/20210319/20210319-aep-supplemental-projects.ashx>

### **Kewanee-Enterprise Park 138 kV Transmission Line Project**

This project will address thermal and voltage violations identified on the Pikeville 46kV network by establishing a new substation (Kewanee) to the west (~1.5 mi.) of the existing Fords Branch Station, potentially in/near the new Kentucky Enterprise Industrial Park. This new station will consist of 4 -138 kV breaker ring bus and 2 step-down distribution voltage transformers and a 28.8 MVAR Cap Bank. The project will construct approximately 5 miles of new double circuit 138 kV line in order to loop the new substation into the existing Beaver Creek – Cedar Creek 138 kV circuit. Current projected in-service date is September 2023.

- **Beaver Creek – Kewanee 138kV transmission line**  
Proposed Summer Emergency Conductor Capacity 378 MVA
- **Kewanee – Cedar Creek 138kV transmission line**  
Proposed Summer Emergency Conductor Capacity 378 MVA
- **PJM Baseline (B3087):** Please see page 3  
<https://www.pjm.com/-/media/committees-groups/committees/srretp-w/2020/20200420/20200420-reliability-analysis-update.ashx>

### **Middle Creek BESS and Middle Creek – Prestonsburg 46kV Rebuild**

This project will address needs on ~23 miles of the Falcon – Prestonsburg 46kV circuit. Falcon – Prestonsburg 46kV line consists of 1940s wood structures. As part of the solution, A BESS (Battery Energy Storage Solution) will be installed sat Middle Creek substation. The project will retire ~14.5 miles of 46kV lines between Falcon and Middle Creek substations. The project will rebuild ~8.5 miles of 46kV line between Prestonsburg and Middle Creek station. The current projected in-service date is Dec 2024.

- **Middle Creek BESS**

Proposed Nameplate Capacity: 2 MW

- **Middle Creek – Prestonsburg 46kV transmission line**  
Existing Summer Emergency Conductor Capacity: 23 MVA  
Proposed Summer Emergency Conductor Capacity 70 MVA
- **PJM Supplemental (S2200):** Please see pages 138-139  
<https://www.pjm.com/-/media/committees-groups/committees/srrtep-w/postings/aep-local-plan-submission-of-the-supplemental-projects-for-2020-rtep.ashx>

### **Garrett Area Improvements**

This project will construct ~9.3 miles of single circuit 138kV from Soft Shell to Garrett picking up Salt Lick Co-op via Snag Fork along the way. The Project will also construct ~3.5 miles of single circuit 138kV from the Eastern station to Garrett station, a short extension from the new Eastern station to the existing Hays Branch metering point, a short extension to existing Morgan Fork – Hays Branch 138 kV circuit from Eastern station, and a double circuit cut into existing Hays Branch - Morgan Fork line to tie into new Hays Branch S.S PoP switch. The Project will also require installation of a new heavy double circuit dead-end tap structure on the existing Hays Branch – Morgan Fork 138kV Line (Due to unequal loading on the transmission line). In addition, the Garrett station will be expanded to install a 138kV three breaker ring bus (If space becomes a constraint, a straight bus arrangement with two 138 kV breakers and a circuit switcher on the high side of the transformer may be installed), and a 138/12kV 30 MVA transformer. A new 138 kV substation (Eastern) will be constructed south of the existing Hays Branch station and will include two 138kV breakers (3000A 40kA) on exits toward Morgan Fork and Garrett station. Finally, the Project will construct a new Snag Fork Switch Station and install a 3-way phase over phase motorized (automated) switching structure near Saltlick to serve the EKPC co-op. The current projected in-service date is October 2024.

- **Eastern - Garrett 138kV transmission line**  
Existing Summer Emergency Conductor Capacity: 29-50 MVA  
Proposed Summer Emergency Conductor Capacity 253 MVA
- **Garrett – Soft Shell 138kV transmission line**  
Existing Summer Emergency Conductor Capacity: 29-50 MVA  
Proposed Summer Emergency Conductor Capacity 253 MVA
- **PJM Supplemental (S2188):** Please see pages 115-118  
<https://www.pjm.com/-/media/committees-groups/committees/srrtep-w/postings/aep-local-plan-submission-of-the-supplemental-projects-for-2020-rtep.ashx>

### **Inez Station Improvements**

At Inez station, replace Breakers B, B2, C and C1. Install three new 138kV breakers and create third string in the existing breaker and half configuration. Replace 138/69kV Inez Transformer #1 with a 138/69kV/12kV 90 MVA autotransformer. Move the new Inez 139/69/12kV

Transformer #1 and Martiki 138kV feed to the new string. Install Breaker B1 towards Johns Creek to complete the string. Installation of Breaker B1 and the third string addresses dissimilar zones of protection between the #1 bus and 20+ mile Inez to Johns Creek 138 kV circuit and dissimilar zones of protection between the 138 kV bus #2, 138/69 kV transformer #1, and the 138 kV circuit to the Martiki coal service point. Replace Cap bank switchers CS-BB and CS-CC with 138kV circuit breakers. Replace obsolete relays at Inez substation. Retire 69kV Capacitor Bank and the circuit switcher AA. Projected in-service date for this project is November 2022.

- **Inez Transformer**

- Existing 138/69kV Nameplate Capacity: 50 MVA

- Proposed 138/69kV Nameplate Capacity: 90 MVA

- **PJM Baseline (B3283):** Please see pages 28-29

- <https://www.pjm.com/-/media/committees-groups/committees/srstep-w/2021/20210217/20210217-reliability-analysis-update.ashx>

- **PJM Supplemental (S2281):** Please see pages 218-220

- <https://www.pjm.com/-/media/committees-groups/committees/srstep-w/postings/aep-local-plan-submission-of-the-supplemental-projects-for-2020-rtep.ashx>

## **Fleming station rebuild**

Rebuild Fleming station in the clear; Replace 138/69kV Fleming Transformer #1 with 138/69 kV 130 MVA transformer with high side 138 kV CB; Install a 5 breaker 69 kV ring bus on the low side of the transformer, replace 69 kV circuit switcher AA, replace 69/12kV transformer #3 with 69/12 kV 30 MVA transformer, replace 12 kV CB A and D. Retire existing Fleming substation. The current project in-service date for this project is November 2022.

- **Fleming 138/69kV Transformer**

- Existing 138/69kV Nameplate Capacity: 130 MVA

- Proposed 138/69kV Nameplate Capacity: 130 MVA

- **PJM Baseline (B3307):** Pages 45-46

- <https://www.pjm.com/-/media/committees-groups/committees/srstep-w/2021/20210115/20210115-reliability-analysis-update.ashx>

- **PJM Supplemental (S2219):** Please see pages 145-147

- <https://www.pjm.com/-/media/committees-groups/committees/srstep-w/postings/aep-local-plan-submission-of-the-supplemental-projects-for-2020-rtep.ashx>

## **Allen station Improvement**

Rebuild Allen Station in the clear. A 0.2 mile segment of the Allen-East Prestonburg 46 kV line will be relocated to the new station. The McKinney-Allen line extension will walk around the south and east sides of the existing Allen station to the new Allen Station being built in the clear. A short segment of new single circuit 69 kV line and a short segment of new double circuit 69 kV line (both operated at 46 kV) will be added to the line to tie into the new Allen Station bays. A segment of the Stanville-Allen line will have to be relocated to the new station. A 0.25 mile

segment of the existing Allen-Prestonburg single circuit will be relocated. Remote end work will be required at Prestonburg, Stanville, and McKinney stations. The current projected in-service date for this project is November 2023.

- **Stanville - Allen 46kV transmission line**  
Existing Summer Emergency Conductor Capacity: 47 MVA  
Proposed Summer Emergency Conductor Capacity 50 MVA
- **Allen – East Prestonsburg transmission line**  
Existing Summer Emergency Conductor Capacity: 45 MVA  
Proposed Summer Emergency Conductor Capacity: 53 MVA
- **PJM Supplemental (S2405):** Please see pages 23-24  
<https://www.pjm.com/-/media/committees-groups/committees/srrtep-w/postings/aep-local-plan-submission-of-the-supplemental-projects-for-2021-rtep.ashx>

### **New Camp Loop**

In conjunction with the baseline work identified under B3288 which would install new 69kV line between Stone and New Camp via Orinoco substation, the following is proposed under this solution to address the identified needs on the Sprigg – Stone 46kV line. Replace Belfry substation with Orinoco substation by installing a 69KV box bay and 12KV rural bay to be built in the clear southwest of existing Belfry station. Install 69/12kV 20 MVA transformer and two 12kV breakers. Retire Belfry 46kV substation. Retire 46kV equipment from Stone substation. At Hatfield substation, replace MOAB Y with a 69KV Circuit Breaker towards Stone 69kV line via New Camp and Orinoco. Retire the 46kV equipment at Sprigg station towards Stone (via Belfry). Retire Turkey Creek Tap. Retire the ~8.23 miles of the 46kV Sprigg – Stone 46 KV circuit. The current projected in-service date for this project is December 2024.

- **New Camp - Orinoco 69kV transmission line**  
Proposed Summer Emergency Conductor Capacity: 142 MVA
- **Orinoco – Stone 69kV transmission line**  
Proposed Summer Emergency Conductor Capacity: 142 MVA
- **PJM Baseline (B3288):** Please see pages 23-25  
<https://www.pjm.com/-/media/committees-groups/committees/srrtep-w/2021/20210115/20210115-reliability-analysis-update.ashx>
- **PJM Supplemental (S2446):** Please see pages 84-86  
<https://www.pjm.com/-/media/committees-groups/committees/srrtep-w/postings/aep-local-plan-submission-of-the-supplemental-projects-for-2021-rtep.ashx>

### **Elwood station replacement**

Construct a greenfield 138KV Myra Station to replace Elwood Station. Install 138KV double



box bay with two 138kV circuit breakers and line exits to Fremont & Beaver Creek. Install 138/34.5 kV transformer with high-side circuit switcher and associated 34.5kV breakers. Install fiber connectivity for upgraded relaying. Construct a new ~2 mi double circuit 138 kV line to the proposed Myra substation. Reconfigure the existing Beaver Creek - Fremont 138kV circuit to facilitate the construction of the new double circuit Myra Extension 138kV Line to feed the proposed Myra Substation. Install two replacement structures in order to bypass Elwood station. Transfer wires from old structure to new structure. Tie new structure to Cedar Creek-Henry Clay 46kV Line. The current projected in-service date for this project is December 2024.

- **Beaver Creek - Myra 138kV transmission line**  
Proposed Summer Emergency Conductor Capacity: 310 MVA
- **Myra – Fremont 138kV transmission line**  
Proposed Summer Emergency Conductor Capacity: 310 MVA
- **PJM Supplemental (S2436):** Please see pages 66-69  
<https://www.pjm.com/-/media/committees-groups/committees/srrtep-w/postings/aep-local-plan-submission-of-the-supplemental-projects-for-2021-rtep.ashx>

### **Burton station replacement**

Construct a greenfield 69/12 KV Osborne Station to replace Burton Station, including a high-side 69KV Phase Over Phase switch, fiber connectivity, a circuit switcher, and one 69/12kV 12/16/20MVA transformer and associated distribution feeders. Construct a greenfield 69/12 KV Osborne Station to replace Burton Station, including a high-side 69KV Phase Over Phase switch, fiber connectivity, a circuit switcher, and one 69/12kV 12/16/20MVA transformer and associated distribution feeders. Construct a new ~0.5 mi double circuit 69 kV line to the proposed Osborne substation. Reconfigure the existing Beaver Creek - Fleming 69kV line to facilitate the construction of the new double circuit Osborne 69kV line to feed the proposed Osborne Substation. The current projected in-service date for this project is November 2023.

- **Beaver Creek - Osborne 69kV transmission line**  
Proposed Summer Emergency Conductor Capacity: 75 MVA
- **Osborne – Weeksbury 69kB transmission line**  
Proposed Summer Emergency Conductor Capacity: 75 MVA
- **PJM Supplemental (S2436):** Please see pages 66-69  
<https://www.pjm.com/-/media/committees-groups/committees/srrtep-w/postings/aep-local-plan-submission-of-the-supplemental-projects-for-2021-rtep.ashx>

**VERIFICATION**

The undersigned, Brian K. West, being duly sworn, deposes and says he is Vice President, Regulatory & Finance for Kentucky Power Company that he has personal knowledge of the matters set forth in the forgoing responses and the information contained therein is true and correct to the best of his information, knowledge and belief after reasonable inquiry.



\_\_\_\_\_  
Brian K. West

State of Indiana        )  
                                  ) ss       Administrative Case No. 387  
County of Allen        )

Subscribed and sworn to before me, a Notary Public, in and for said County and State, Brian K. West this 20<sup>th</sup> day of April, 2021.

Regiana M.  
Sistevaris

Digitally signed by Regiana  
M. Sistevaris  
Date: 2021.04.20 14:20:50  
-04'00'

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Regiana M. Sistevaris, Notary Public

My Commission Expires: January 7, 2023