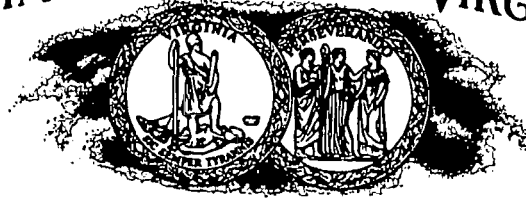


# COMMONWEALTH OF VIRGINIA

OFFICE OF THE GENERAL COUNSEL

P.O. Box 1197  
Richmond, Virginia 23218-1197



## STATE CORPORATION COMMISSION

July 19, 2019

Mr. Joel H. Peck, Clerk  
State Corporation Commission  
Document Control Center  
Tyler Building, First Floor  
1300 East Main Street  
Richmond, Virginia 23219

Re: *Petition of Virginia Electric and Power Company, To revise its fuel factor pursuant to § 56-249.6 of the Code of Virginia, Case No. PUR-2019-00070*

Dear Mr. Peck:

On July 3, 2019, the Commission Staff filed the Direct Testimony of Bernadette Johnson in the above-captioned proceeding. In the time since the filing, the Staff has become aware of certain errors in that testimony. Accordingly, please find enclosed for filing corrected pages from the Report attached to the testimony as Attachment BJ-1, along with a blacklined version of these pages showing changes from the version filed on July 3, 2019.

Sincerely,

A handwritten signature in black ink, appearing to read "Frederick D. Ochsenhirt".

Frederick D. Ochsenhirt  
Associate General Counsel

FDO:jpr  
Enclosures

cc: Service List

Telephone Number (804) 371-9674  
Facsimile Number (804) 371-9240  
Facsimile Number (804) 371-9549

2019 JUL 19 A 11:49  
SCC CLERK'S OFFICE  
DOCUMENT CONTROL CENTER

190730133

**ATTACHMENT 1**

**REVISED PAGES TO ATTACHMENT BJ-1**

## DEV Generation Assets

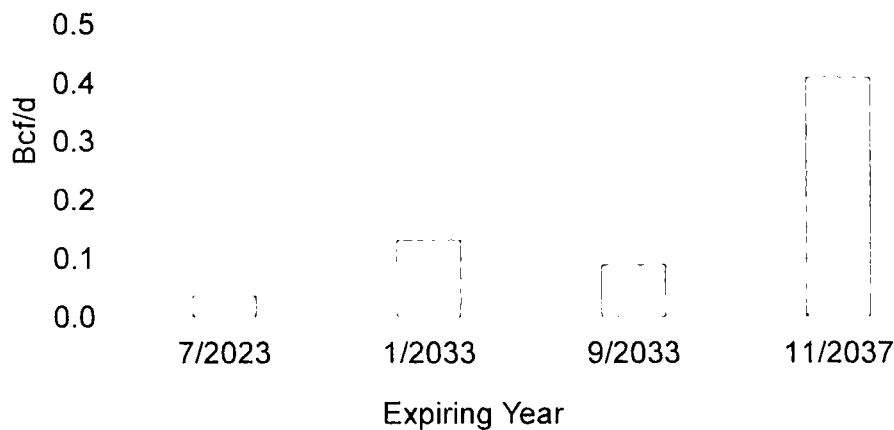
- The generation units listed below were considered for this analysis
- The list was compiled from documents provided to Staff by DEV.
- Only operational units (1-15) were analyzed in this exercise.
- Majority of DEV units have exposure to Transco Zone 5 gas pricing. See map on following page.

#	Name	Status	State	County	Pipeline	Price Loc	Primary Fuel	Secondary Fuel
1	Altavista	Operating	VA	Campbell	Transco	Transco Z5	Wood Waste Solids	Natural Gas
2	Bear Garden	Operating	VA	Buckingham	Transco	Transco Z5	Natural Gas	Distillate Fuel Oil
3	Brunswick Co.	Operating	VA	Brunswick	Transco	Transco Z5	Natural Gas	none
4	Chesterfield CC	Operating	VA	Chesterfield	TCO/DETI/VNG	TCO Pool	Natural Gas	Distillate Fuel Oil
5	Darbytown	Operating	VA	Henrico	DETI/VNG	TCO Pool	Natural Gas	Distillate Fuel Oil
6	Elizabeth River	Operating	VA	Chesapeake	TCO	Transco Z5	Natural Gas	Distillate Fuel Oil
7	Greenville	Operating	VA	Greenville	Transco	Transco Z5	Natural Gas	none
8	Gravel Neck	Operating	VA	Surry	TCO	Transco Z5	Natural Gas	Distillate Fuel Oil
9	Hopewell	Operating	VA	Hopewell	TCO	Transco Z5	Wood Waste Solids	Natural Gas
10	Ladysmith	Operating	VA	Caroline	DETI/VNG	TCO Pool	Natural Gas	Distillate Fuel Oil
11	Possum Point	Operating	VA	Prince William	Cove Point	Dominion 5	Natural Gas	Distillate Fuel Oil
12	Remington	Operating	VA	Fauquier	Transco	Transco Z5	Natural Gas	Distillate Fuel Oil
13	Warren Co	Operating	VA	Warren	TCO	TCO Pool	Natural Gas	none
14	Yorktown	Operating	VA	York	DETI/VNG	Transco Z5	Residual Fuel Oil	Natural Gas
15	Gordonsville	Operating	VA	Louisa	Transco	Transco Z5	Natural Gas	Distillate Fuel Oil
16	Rosemary	Operating	NC	Halifax	Transco	Transco Z5	Natural Gas	Distillate Fuel Oil
17	Bellemeade	Out of Service	VA	Chesterfield	TCO	TCO Pool	Natural Gas	Distillate Fuel Oil
18	Bremo	Out of Service	VA	Fluvanna	Transco	Transco Z5	Natural Gas	Distillate Fuel Oil

## Transco Capacity

- DEV has ~673\* MMcf/d of capacity on Transco through 7/2023
- Roughly 382 MMcf/d of DEVs Transco capacity is sourced from Transco Z5 and ~253 Z6 NNY. Delivery capacity on Transco in Z5 accounts for ~503 MMcf/d.
- Expirations:
  - **7/31/2023:** 37 MMcf/d from Stations 62,50,45,30 to Leidy-Dominion
  - **1/4/2033:** 132 MMcf/d from Cascade Creek to Rockville & BGE-Beaver Dam
  - **9/1/2033:** 90 MMcf/d from Leidy to Station 85 (Seneca AMA) – not included in total above (part of the 250 MMcf/d contract expiring in 2037)
  - **11/30/2037:** 250 MMcf/d from Station 210 to Cascade Creek and 250 MMcf/d from Station 210 & Station 165 to Greenville Power (410 MMcf/d used in chart below-see note in contract expiring in 2033)
  - **Annual Evergreen:** 3 MMcf/d from Leidy to Panda Energy

**Firm Capacity by Expiring Term**



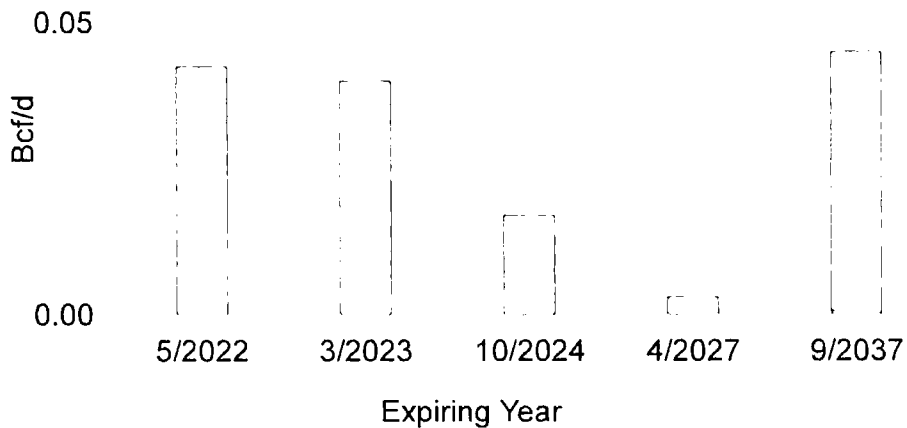
\* The total Transco capacity DEV has was changed from 763 MMcf/d submitted in the first report, to 673 MMcf/d. Drillinginfo was not able to confirmed this based on publicly available information. Instead, Drillinginfo was informed during the a call on July 10, 2019 with the staff and DEV



### Dominion (DTI) Capacity

- 148 MMcf/d of capacity expiring at different times
- A majority of DEVs DTI capacity is sourced from Dominion South. Nearly all gas is delivered into Transco Z5.
- Storage contract for DTI Storage for 42.5 MMcf/d through 3/31/2022
- Near Term Expirations:
  - **5/31/2022:** 42.5 MMcf/d from Oakford & DTI Storage Point to Quantico and DTI Storage Point
  - **3/31/2023:** 40 MMcf/d from Oakford to Quantico
  - **10/31/2024:** 2 MMcf/d from Cornwell/Broad Run to Quantico and 15 MMcf/d from Oakford to Quantico

Firm Capacity by Expiring Term

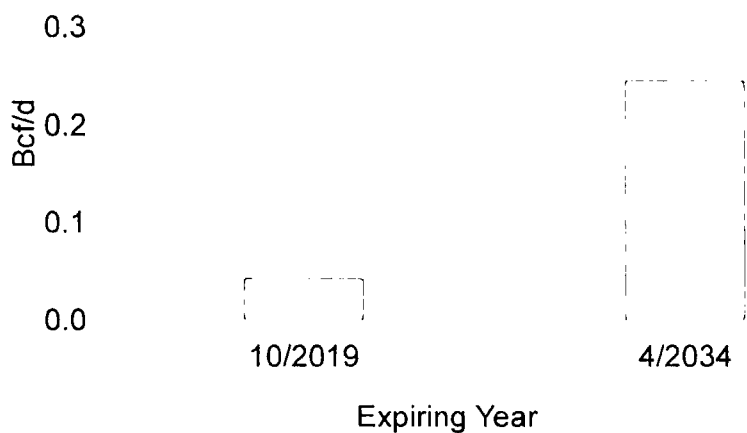




### Columbia Gas (TCO) Capacity

- ~0.04 Bcf/d of Columbia Gas capacity will expire in 2019, and the remaining ~0.25 Bcf/d expiring in 2034
- A majority of DEVs capacity on TCO is sourced from TCO Pool and delivered to the Warren plant in TCO market area 30 in Transco Z5 pricing.
- 2019 Expirations
  - **October:** 43 MMcf/d from TCO-Leach/ PEP Lebanon to Gelp Columbus and Chesterfield Power

Firm Capacity by Expiring Term



## Zone 5 Delivered Power Plants vs. Capacity

- DEV has 1.1 Bcf/d of capacity on interstate pipelines.
- Total average daily burn at DEV plants is 0.699 Bcf/d thus the total portfolio average utilization is 64% during the time period analyzed: July2018-April2019.
- From the data provided by DEV, the non-coincident peak burn is ~1.5 bcf/d. This is also supported by the total peak flow estimated in the table below which uses plant capacity \* heat rate.
- Heat rate efficiencies do decline as generators approach peak burn, but this provides a conservative view of maximum possible burn.
- In theory, if all generators peaked at the same time for 24hrs the demand would be 125% of portfolio deliverability.
- DI considers the portfolio to be reasonably sized. The ongoing cost of firm transportation to accommodate the rare absolute maximum day would be higher than procuring in the daily market.

Power Plant	Zone 5	Max Flow (MMcf/d)	Average Flow (MMcf/d)	Capacity (MW)	Peak Flow at Avg Hr (MMcf/d)	Notes
1 Bear Garden	Yes	105	70	622	94	
2 Brunswick County Power	Yes	235	166	1,472	237	
3 Chesterfield CC	No	93	56	495	85	
4 Darbytown	No	32	0.34	368	107	
5 Elizabeth River CT	Yes	55	5	389	109	
6 Gravel Neck	Yes	21	2	428	100	
7 Greenville Power Station	Yes	258	116	1,588	256	
8 South Anna (Gordonsville)	Yes	48	20	268	79	
9 Ladysmith Peaking	No	147	13	915	210	
10 Possum Point CC	No	145	64	615	103	
11 Remington	Yes	101	16	748	175	
12 Rosemary	Yes	0	0	186	41	
13 Warren County Power Station	No	220	171	1,472	234	
14 Yorktown	Yes	7	0	0	0	Secndry Gas
<b>DEV Power Plant Summary</b>		<b>1,467</b>	<b>699</b>		<b>1,827</b>	

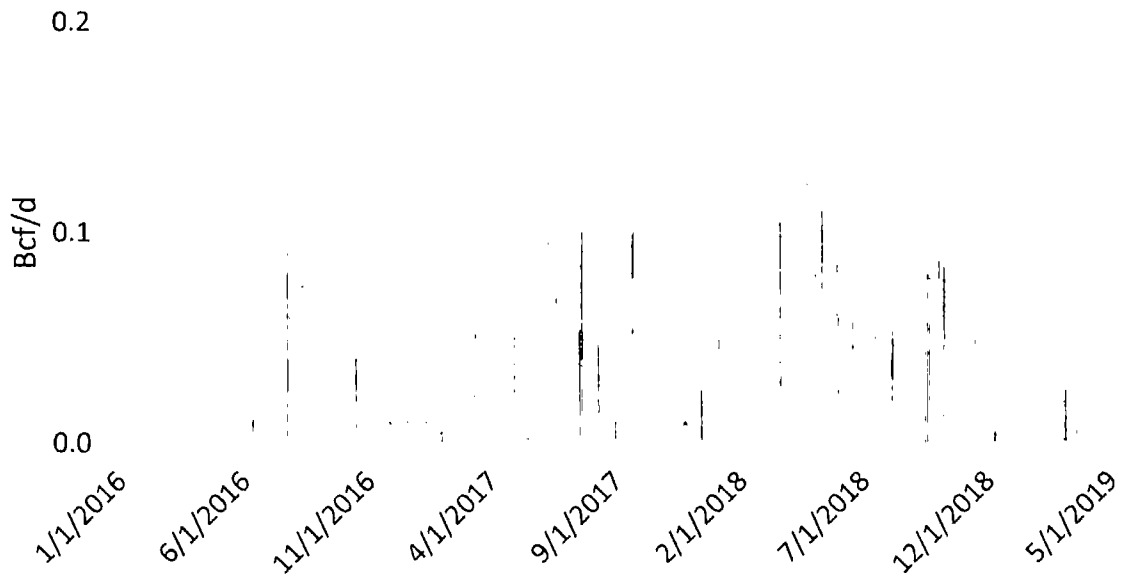
\*Max and Average flows are based on time period 7/1/2018 through 4/30/2019. This timeframe was used based on the data feeding the table above, as provided in "Confidential ER Set 2-2 (DEH)"



### Remington power plant

- Remington located in Fraquier County, Virginia
- Pipeline Access: Transco
- Max Flow: 128 MMcf/d
- Peak Utilization = 21%

Remington





**ATTACHMENT 2**

**REVISED PAGES TO ATTACHMENT BJ-1  
(BLACKLINE)**

## DEV Generation Assets

- The generation units listed below were considered for this analysis
- The list was compiled from documents provided to Staff by DEV.
- Only operational units (1-15) were analyzed in this exercise.
- Majority of DEV units have exposure to Transco Zone 5 gas pricing. See map on following page.

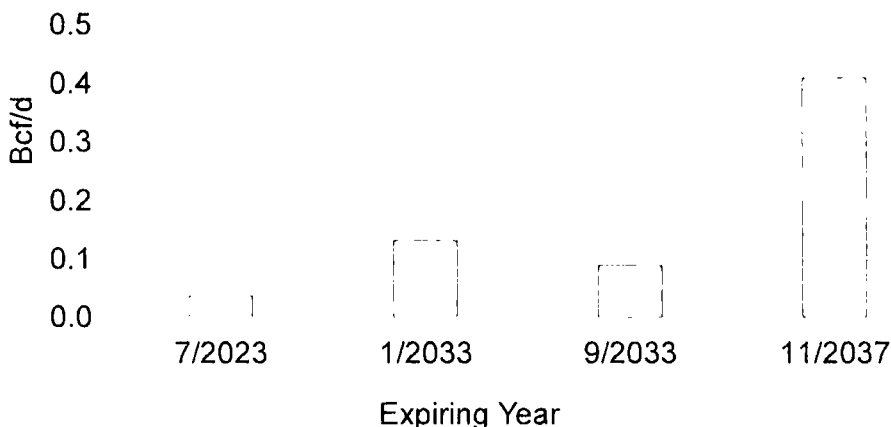
#	Name	Status	State	County	Pipeline	Price Loc	Primary Fuel	Secondary Fuel
1	Altavista	Operating	VA	Campbell	Transco	Transco Z5	Wood Waste Solids	Natural Gas
2	Bear Garden	Operating	VA	Buckingham	Transco	Transco Z5	Natural Gas	Distillate Fuel Oil
3	Brunswick Co.	Operating	VA	Brunswick	Transco	Transco Z5	Natural Gas	Waste-Heat none
4	Chesterfield CC	Operating	VA	Chesterfield	TCO/DETI/VNG	TCO Pool	Natural Gas	Distillate Fuel Oil
5	Darbytown	Operating	VA	Henrico	DETI/VNG	TCO Pool	Natural Gas	Distillate Fuel Oil
6	Elizabeth River	Operating	VA	Chesapeake	TCO	Transco Z5	Natural Gas	Distillate Fuel Oil
7	Greensville	Operating	VA	Greensville	Transco	Transco Z5	Natural Gas	Waste-Heat none
8	Gravel Neck	Operating	VA	Surry	TCO	Transco Z5	Natural Gas	Distillate Fuel Oil
9	Hopewell	Operating	VA	Hopewell	TCO	Transco Z5	Wood Waste Solids	Natural Gas
10	Ladysmith	Operating	VA	Caroline	DETI/VNG	TCO Pool	Natural Gas	Distillate Fuel Oil
11	Possum Point	Operating	VA	Prince William	Cove Point	Dominion S	Natural Gas	Distillate Fuel Oil
12	Remington	Operating	VA	Fauquier	Transco	Transco Z5	Natural Gas	Distillate Fuel Oil
13	Warren Co	Operating	VA	Warren	TCO	TCO Pool	Natural Gas	Distillate-Fuel Oil-none
14	Yorktown	Operating	VA	York	DETI/VNG	Transco Z5	Residual Fuel Oil	Natural Gas
15	Gordonsville	Operating	VA	Louisa	Transco	Transco Z5	Natural Gas	Distillate Fuel Oil
16	Rosemary	Operating	NC	Halifax	Transco	Transco Z5	Natural Gas	Distillate Fuel Oil
17	Bellemeade	Out of Service	VA	Chesterfield	TCO	TCO Pool	Natural Gas	Distillate Fuel Oil
18	Bremo	Out of Service	VA	Fluvanna	Transco	Transco Z5	Natural Gas	Distillate Fuel Oil



### Transco Capacity

- DEV has ~~~763~~ 673\* MMcf/d of capacity on Transco through 7/2023
- Roughly 382 MMcf/d of DEVs Transco capacity is sourced from Transco Z5 and ~~~343~~ 253 Z6 NNY. Delivery capacity on Transco in Z5 accounts for ~503 MMcf/d.
- Expirations:
  - **7/31/2023**: 37 MMcf/d from Stations 62,50,45,30 to Leidy-Dominion
  - **1/4/2033**: 132 MMcf/d from Cascade Creek to Rockville & BGE-Beaver Dam
  - **9/1/2033**: 90 MMcf/d from Leidy to Station 85 (Seneca AMA) – not included in total above (part of the 250 MMcf/d contract expiring in 2037)
  - **11/30/2037**: 250 MMcf/d from Station 210 to Cascade Creek and 250 MMcf/d from Station 210 & Station 165 to Greenville Power (410 MMcf/d used in chart below-see note in contract expiring in 2033)
  - **Annual Evergreen**: 3 MMcf/d from Leidy to Panda Energy

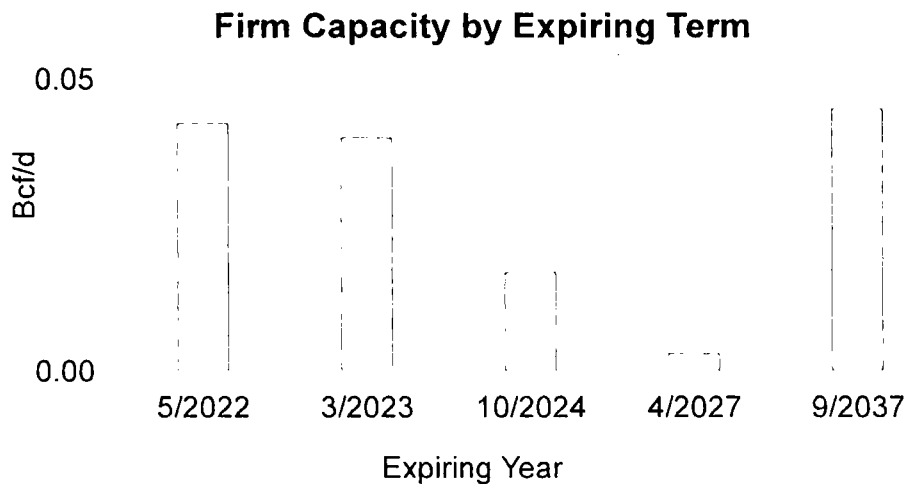
Firm Capacity by Expiring Term



\* The total Transco capacity DEV has was changed from 763 MMcf/d submitted in the first report, to 673 MMcf/d. Drillinginfo was not able to confirmed this based on publicly available information. Instead, Drillinginfo was informed during the a call on July 10, 2019 with the staff and DEV

## Dominion (DTI) Capacity

- 148 MMcf/d of capacity expiring at different times
- A majority of DEVs DTI capacity is sourced from ~~Transeo Z6 Non-NY, Dominion South, and TCO Pool~~. Nearly all gas is delivered into Transco Z5.
- Storage contract for DTI Storage for 42.5 MMcf/d through 3/31/2022
- Near Term Expirations:
  - **5/31/2022:** 42.5 MMcf/d from Oakford & DTI Storage Point to Quantico and DTI Storage Point
  - **3/31/2023:** 40 MMcf/d from Oakford to Quantico
  - **10/31/2024:** 2 MMcf/d from Cornwell/Broad Run to Quantico and 15 MMcf/d from Oakford to Quantico

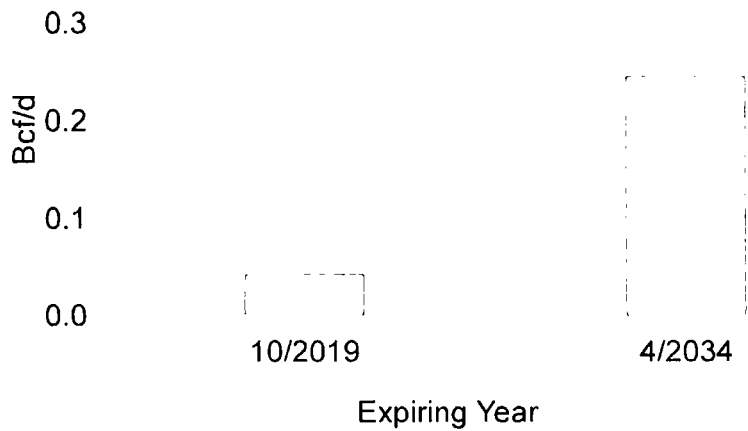




### Columbia Gas (TCO) Capacity

- ~0.04 Bcf/d of Columbia Gas capacity will expire in 2019, and the remaining ~0.25 Bcf/d expiring in 2034
- A majority of DEVs capacity on TCO is sourced from TCO Pool and ~~Dominion South~~ and delivered to the Warren plant in TCO market area 30 in Transco Z5 pricing ~~Dominion South~~.
- 2019 Expirations
  - **October:** 43 MMcf/d from TCO-Leach/ PEP Lebanon to Gelp Columbus and Chesterfield Power

Firm Capacity by Expiring Term



## Zone 5 Delivered Power Plants vs. Capacity

- DEV has ~~4.2~~ 1.1 Bcf/d of capacity on interstate pipelines.
- Total average daily burn at DEV plants is ~~0.55~~ 0.699 Bcf/d thus the total portfolio is ~~typically 45% utilized~~ average utilization is 64% during the time period analyzed: July 2018-April 2019.
- From the data provided by DEV, the non-coincident peak burn is ~1.5 bcf/d. This is also supported by the total peak flow estimated in the table below which uses plant capacity \* heat rate.
- Heat rate efficiencies do decline as generators approach peak burn, but this provides a conservative view of maximum possible burn.
- In theory, if all generators peaked at the same time for 24hrs the demand would be 125% of portfolio deliverability.
- DI considers the portfolio to be reasonably sized. The ongoing cost of firm transportation to accommodate the rare absolute maximum day would be higher than procuring in the daily market.

#	Power Plant	Zone 5?	Max Flow (MMcf/d)	Average Flow (MMcf/d)	Capacity (MW)	Peak Flow at Avg HR (MMcf/d)	Notes
<del>1</del> <u>1</u>	Altavista	Yes	0	0	0	0	Secndry-Gas
<del>2</del> <u>2</u>	Bear Garden	Yes	105	70	622	94	
<del>3</del> <u>3</u>	Brunswick County Power	Yes	235	166	1,472	237	
<del>4</del> <u>4</u>	Chesterfield CC	No	<del>83</del> <u>93</u>	56	495	85	
<del>5</del> <u>5</u>	Darbytown	No	32	0.34	368	107	
<del>6</del> <u>6</u>	Elizabeth River CT	Yes	55	5	389	109	
<del>7</del> <u>7</u>	Gravel Neck	Yes	21	2	428	100	
<del>8</del> <u>8</u>	Greenville Power Station Hopewell—Polyester	Yes	258	116	1,588	256	
<del>9</del> <u>9</u>	<u>South Anna (Gordonsville)</u>	Yes	<u>0 48</u>	<u>0 20</u>	<u>0 268</u>	<u>0 79</u>	
<del>10</del> <u>10</u>	Ladysmith Peaking	No	147	13	915	210	
<del>11</del> <u>11</u>	Possum Point CC	No	145	64	615	103	
<del>12</del> <u>12</u>	Remington	Yes	101	16	748	175	
<del>13</del> <u>13</u>	Rosemary	Yes	0	0	186	41	
<del>14</del> <u>14</u>	Warren County Power Station	No	<u>220</u>	<u>171</u>	<u>1,472</u>	<u>234</u>	
<del>15</del> <u>15</u>	Yorktown	Yes	<u>0 7</u>	0	0	0	Secndry Gas
<del>16</del> <u>16</u>	Gordonsville Power Plant				268	79	
<b>DEV Power Plant Summary</b>			<b>1,182 1,467</b>	<b>508-699</b>		<b>1,596 1,827</b>	

\*Max and Average flows are based on time period 7/1/2018 through 4/30/2019. This timeframe was used based on the data feeding the table above, as provided in "Confidential ER Set 2-2 (DEH)"



### Remington power plant

- Remington located in ~~Fraquier~~ Fauquier County, Virginia
- Pipeline Access: Transco
- Max Flow: 128 MMcf/d
- Peak Utilization = 21%

