

Appendix A

Duke Energy

For the following calculations, we built off of Minnesota Power's billing simulations provided in their initial filing in Docket No. E-999/CI-15-115 before the Minnesota Public Utility Commission. We have adapted each scenario for a General Service customer served at the Primary Distribution level. We assume a Rate DP customer with 3,000 kW in supplemental service and 2,000 kW in reserved standby service under Rider GSS.

For standby rates, we reference Rider GSS – Generation Support Service, Sheet No. 98.9 in the Duke Energy electric rate book. For supplemental service, we reference Rate DP – Service at the Primary Distribution Level, Sheet No. 44.16.

This analysis takes into account the following Riders:

- Rider GSS – Generation Support Service
- Rider BTR (used only in calculating Transmission Reservation Fee)
- Rider RC – Retail Capacity (applies to all outages)
- Rider RE – Retail Energy (applies to all outages)
- Rider DCI – Distribution Capital Investment (applies to all scenarios)

Note that other Riders are ignored for the purpose of this analysis.

Summary:

No Outage = \$ 14,176.98

Scheduled Outage 16 hours off-peak: \$16,107.03

Scheduled Outage 16 hours on-peak: \$16,107.03

Scheduled Outage 8 hours on-peak, 8 hours off-peak: \$16,107.03

Scheduled Outage 32 hours on-peak: \$18,037.07

Unscheduled Outage 8 hours on-peak, 8 hours off-peak: \$16,427.63

No Outage

For the “no outage” calculation, we assumed an April peak load of 3,000 kW.

- For standby charges, the Distribution Reservation Fee, the Transmission Reservation Fee, the Administrative Charge and the Customer Charge would apply.

- The Distribution Reservation Fee is calculated with reference to the demand charge set forth in Rate DP – Sheet 44. The rate is 4.3340 per kW of standby capacity reserved.

$$4.3340 * 2000 = \$8668.00$$

- The Transmission Reservation Fee is calculated with reference to Rider BTR, which shows a rate of \$2.1243 per kW of standby reserved.

$$2.1243 * 2000 = \$4248.60$$

- The Administrative Charge is listed as \$75.00
- The Customer Charge is listed in Rate DP as \$229.92
- Charges related to Rider DCI – Distribution Capital Investment are made in reference to 10.738% of base distribution charges (distribution reservation fee plus customer charge).

$$8668 + 229.22 * .10738 = 955.46$$

Total “No Outage” Standby Bill = **\$14,176.98**

Scheduled Outage – 16 hours off-peak

There is no difference between on-peak and off-peak under Duke Energy’s standby tariff.

This 16-hour outage is assumed to take place over a 2 day period in April.

The key difference between Scheduled and Unscheduled outages rests in the calculation of the Rider RC charges. If an outage is considered Maintenance/Scheduled, the RC charges are reduced by 50%. All other charges remain the same. The demand used to calculate Rider RC and Rider RE charges is pro-rated by the number of outage days – in this case, 2/30 or 0.0667.

- As above, the Distribution Reservation Fee, the Transmission Reservation Fee, the Administrative Charge and the Customer Charge would apply.
- The Distribution Reservation Fee is calculated with reference to the demand charge set forth in Rate DP – Sheet 44. The rate is 4.3340 per kW of standby capacity reserved.

$$4.3340 * 2000 = \$8668.00$$

- The Transmission Reservation Fee is calculated with reference to Rider BTR, which shows a rate of \$2.1243 per kW of standby reserved.

$$2.1243 * 2000 = \$4248.60$$

- The Administrative Charge is listed as \$75.00
- The Customer Charge is listed in Rate DP as \$229.92

- Charges related to Rider DCI – Distribution Capital Investment are made in reference to 10.738% of base distribution charges (distribution reservation fee plus customer charge).

$$8668 + 229.22 * .10738 = 955.46$$

- Due to the outage, the customer would also be responsible for charges under Rider RC and Rider RE.
- Under Rider RC – Retail Capacity, charges for a scheduled outage are calculated with reference to a rate of \$0.020038 per kWh per kW of standby capacity reserved for the first 150 kWh per kW of standby reserved (the first 300,000 kWh).
- The demand is pro-rate per the number of outage days, 2/30 – or $0.0667 * 2000 = 133.33$.
- This pro-rated demand is also used to calculate the number of kWh used in the Rider RC and Rider RE calculations:

$$133.33 * 16 = 2,133.33 \text{ kWh (pro-rated)}$$

- Because the outage is scheduled, RC charges are reduced by half.
- RC charges for a scheduled outage are calculated as:

$$0.020038 * 32000 * 0.5 = \$320.61$$

- Energy charges for the outage are calculated with reference to Rider RE – Retail Energy, which lists an energy charge rate of 0.050295. This is multiplied by the kWh used, which is 32,000:

$$0.050295 * 32000 = 1609.44$$

The total estimated standby charges for this outage scenario would be **\$16,107.03**.

Scheduled Outage – 16 hours on-peak

The key difference between Scheduled and Unscheduled outages rests in the calculation of the Rider RC charges. If an outage is considered Maintenance/Scheduled, the RC charges are reduced by 50%. All other charges remain the same.

This 16-hour outage is assumed to take place over a 2 day period in April.

- As above, the Distribution Reservation Fee, the Transmission Reservation Fee, the Administrative Charge and the Customer Charge would apply.
- The Distribution Reservation Fee is calculated with reference to the demand charge set forth in Rate DP – Sheet 44. The rate is 4.3340 per kW of standby capacity reserved.

$$4.3340 * 2000 = \$8668.00$$

- The Transmission Reservation Fee is calculated with reference to Rider BTR, which shows a rate of \$2.1243 per kW of standby reserved.

$$2.1243 * 2000 = \$4248.60$$

- The Administrative Charge is listed as \$75.00
- The Customer Charge is listed in Rate DP as \$229.92
- Charges related to Rider DCI – Distribution Capital Investment are made in reference to 10.738% of base distribution charges (distribution reservation fee plus customer charge).

$$8668 + 229.22 * .10738 = 955.46$$

- Due to the outage, the customer would also be responsible for charges under Rider RC and Rider RE.
- Under Rider RC – Retail Capacity, charges for a scheduled outage are calculated with reference to a rate of \$0.020038 for the first 150 kW per kW of standby reserved – or 300,000 kWh in this scenario.
- The 16 -hour outage in this scenario would use 32,000 kWh, so we are within the first load factor block.
- RC charges for a scheduled outage are calculated as:

$$0.020038 * 32000 * 0.5 = \$320.61$$

- Energy charges for the outage are calculated with reference to Rider RE – Retail Energy, which lists an energy charge rate of 0.050295:

$$0.050295 * 32000 = 1609.44$$

The total estimated standby charges for this outage scenario would be **\$16,107.03**.

Scheduled Outage – 8 hours on-peak, 8 hours off-peak

There is no difference between on-peak and off-peak under Duke Energy’s standby tariff.

The key difference between Scheduled and Unscheduled outages rests in the calculation of the Rider RC charges. If an outage is considered Maintenance/Scheduled, the RC charges are reduced by 50%. All other charges remain the same.

This 16-hour outage is assumed to take place over a 1 day period in April.

- As above, the Distribution Reservation Fee, the Transmission Reservation Fee, the Administrative Charge and the Customer Charge would apply.
- The Distribution Reservation Fee is calculated with reference to the demand charge set forth in Rate DP – Sheet 44. The rate is 4.3340 per kW of standby capacity reserved.

$$4.3340 * 2000 = \$8668.00$$

- The Transmission Reservation Fee is calculated with reference to Rider BTR, which shows a rate of \$2.1243 per kW of standby reserved.

$$2.1243 * 2000 = \$4248.60$$

- The Administrative Charge is listed as \$75.00
- The Customer Charge is listed in Rate DP as \$229.92
- Charges related to Rider DCI – Distribution Capital Investment are made in reference to 10.738% of base distribution charges (distribution reservation fee plus customer charge).

$$8668 + 229.22 * .10738 = 955.46$$

- Due to the outage, the customer would also be responsible for charges under Rider RC and Rider RE.
- Under Rider RC – Retail Capacity, charges for a scheduled outage are calculated with reference to a rate of \$0.020038 for the first 150 kW per kW of standby reserved – or 300,000 kWh in this scenario.
- The 16 -hour outage in this scenario would use 32,000 kWh, so we are within the first load factor block.
- RC charges for a scheduled outage are calculated as:

$$0.020038 * 32000 * 0.5 = \$320.61$$

- Energy charges for the outage are calculated with reference to Rider RE – Retail Energy, which lists an energy charge rate of 0.050295:

$$0.050295 * 32000 = 1609.44$$

The total estimated standby charges for this outage scenario would be **\$16,107.03**.

Scheduled Outage – 32 hours on-peak

There is no difference between on-peak and off-peak under Duke Energy’s standby tariff.

The key difference between Scheduled and Unscheduled outages rests in the calculation of the Rider RC charges. If an outage is considered Maintenance/Scheduled, the RC charges are reduced by 50%. All other charges remain the same.

This 16-hour outage is assumed to take place over a 4 day period in April.

- As above, the Distribution Reservation Fee, the Transmission Reservation Fee, the Administrative Charge and the Customer Charge would apply.

- The Distribution Reservation Fee is calculated with reference to the demand charge set forth in Rate DP – Sheet 44. The rate is 4.3340 per kW of standby capacity reserved.

$$4.3340 * 2000 = \$8668.00$$

- The Transmission Reservation Fee is calculated with reference to Rider BTR, which shows a rate of \$2.1243 per kW of standby reserved.

$$2.1243 * 2000 = \$4248.60$$

- The Administrative Charge is listed as \$75.00
- The Customer Charge is listed in Rate DP as \$229.92
- Charges related to Rider DCI – Distribution Capital Investment are made in reference to 10.738% of base distribution charges (distribution reservation fee plus customer charge).

$$8668 + 229.22 * .10738 = 955.46$$

- Due to the outage, the customer would also be responsible for charges under Rider RC and Rider RE.
- Under Rider RC – Retail Capacity, charges for a scheduled outage are calculated with reference to a rate of \$0.020038 for the first 150 kW per kW of standby reserved – or 300,000 kWh in this scenario.
- The 16 -hour outage in this scenario would use 32,000 kWh, so we are within the first load factor block.
- RC charges for a scheduled outage are calculated as:

$$0.020038 * 64000 *.50 = \$641.22$$

- Energy charges for the outage are calculated with reference to Rider RE – Retail Energy, which lists an energy charge rate of 0.050295:

$$0.050295 * 64000 = 3218.88$$

The total estimated standby charges for this outage scenario would be **\$18,037.07**.

Unscheduled Outage

The key difference between Scheduled and Unscheduled outages rests in the calculation of the Rider RC charges. If an outage is considered Maintenance/Scheduled, the RC charges are reduced by 50%. In this case, the 50% discount does not apply. All other charges remain the same.

This 16-hour outage is assumed to take place over a 1 day period in April.

- As above, the Distribution Reservation Fee, the Transmission Reservation Fee, the Administrative Charge and the Customer Charge would apply.
- The Distribution Reservation Fee is calculated with reference to the demand charge set forth in Rate DP – Sheet 44. The rate is 4.3340 per kW of standby capacity reserved.

$$4.3340 * 2000 = \$8668.00$$

- The Transmission Reservation Fee is calculated with reference to Rider BTR, which shows a rate of \$2.1243 per kW of standby reserved.

$$2.1243 * 2000 = \$4248.60$$

- The Administrative Charge is listed as \$75.00
- The Customer Charge is listed in Rate DP as \$229.92
- Charges related to Rider DCI – Distribution Capital Investment are made in reference to 10.738% of base distribution charges (distribution reservation fee plus customer charge).

$$8668 + 229.22 * .10738 = 955.46$$

- Due to the outage, the customer would also be responsible for charges under Rider RC and Rider RE.
- Under Rider RC – Retail Capacity, charges for a scheduled outage are calculated with reference to a rate of \$0.020038 for the first 150 kW per kW of standby reserved – or 300,000 kWh in this scenario.
- The 16 -hour outage in this scenario would use 32,000 kWh, so we are within the first load factor block.
- RC charges for a scheduled outage are calculated as:

$$0.020038 * 32,000 = \$641.22$$

- Energy charges for the outage are calculated with reference to Rider RE – Retail Energy, which lists an energy charge rate of 0.050295:

$$0.050295 * 32000 = 1609.44$$

The total estimated standby charges for this outage scenario would be **\$16,427.63**.

AEP - Ohio

For the following calculations, we built off of Minnesota Power’s billing simulations provided in their initial filing in Docket No. E-999/CI-15-115 before the Minnesota Public Utility Commission. We have adapted each scenario for a General Service (Schedule GS-3) customer served at the Primary Distribution level. We assume 3,000 kW in supplemental service and 2,000 kW in reserved standby service under Schedule SBS (Standby Service).

This analysis takes into account the following Riders:

- Generation Capacity Rider
- Generation Energy Rider
- Distribution Investment Rider

Note that other Riders are ignored for the purpose of this analysis.

Summary:

No Outage = \$9795.33

Scheduled Outage 16 hours off-peak: \$11,441.73

Scheduled Outage 16 hours on-peak: \$11,441.73

Scheduled Outage 8 hours on-peak, 8 hours off-peak: \$11,441.73

Scheduled Outage 32 hours on-peak: \$13,088.13

Unscheduled Outage 8 hours on-peak, 8 hours off-peak: \$11,441.73

No Outage

For the “no outage” calculation, we assumed an April peak load of 3,000 kW.

- For standby charges, we calculate the Reservation Fee with reference to the Schedule GS-3 primary demand charge rate of 3.76/kW of standby capacity reserved.

$$3.76 * 2000 = 7520$$

- The Customer Charge is listed as \$95.47
- Charges under the Distribution Investment Rider are calculated with reference to 28.9875% of base distribution costs (represented here by the reservation fee):

$$7520 * .289875 = 2179.86$$

Total “No Outage” Standby Bill = **\$11,441.73**

Scheduled Outage – 16 hours off-peak

We assumed a 2 day outage in the month of April.

- For standby charges, we calculate the Reservation Fee with reference to the Schedule GS-3 primary demand charge rate of 3.76/kW of standby capacity reserved.

$$3.76 * 2000 = 7520$$

- The Customer Charge is listed as \$95.47
- Charges under the Distribution Investment Rider are calculated with reference to 28.9875% of base distribution costs (represented here by the reservation fee):

$$7520 * .289875 = 2179.86$$

- Generation-related demand charges are calculated with reference to the Generation Capacity rider, which lists an applicable rate of \$0.0064100 per kWh:
 $.00641 * 32000 = 205.12$
- Energy charges are calculated with reference to the Generation Energy rider, which lists an applicable rate of \$0.04504/kWh:

$$0.04504 * 32000 = 1441.28$$

Total 16-hour Off-Peak Standby Bill = **\$11,441.73**

Scheduled Outage – 16 hours on-peak

We assumed a 2 day outage in the month of April.

- For standby charges, we calculate the Reservation Fee with reference to the Schedule GS-3 primary demand charge rate of 3.76/kW of standby capacity reserved.

$$3.76 * 2000 = 7520$$

- The Customer Charge is listed as \$95.47
- Charges under the Distribution Investment Rider are calculated with reference to 28.9875% of base distribution costs (represented here by the reservation fee):

$$7520 * .289875 = 2179.86$$

- Generation-related demand charges are calculated with reference to the Generation Capacity rider, which lists an applicable rate of \$0.0064100 per kWh:
 $.00641 * 32000 = 205.12$
- Energy charges are calculated with reference to the Generation Energy rider, which lists an applicable rate of \$0.04504/kWh:

$$0.04504 * 32000 = 1441.28$$

Total 16-hour On-Peak Standby Bill = **\$11,441.73**

Scheduled Outage – 8 hours on-peak, 8 hours off-peak

We assumed a 1 day outage in the month of April.

- For standby charges, we calculate the Reservation Fee with reference to the Schedule GS-3 primary demand charge rate of 3.76/kW of standby capacity reserved.

$$3.76 * 2000 = 7520$$

- The Customer Charge is listed as \$95.47
- Charges under the Distribution Investment Rider are calculated with reference to 28.9875% of base distribution costs (represented here by the reservation fee):

$$7520 * .289875 = 2179.86$$

- Generation-related demand charges are calculated with reference to the Generation Capacity rider, which lists an applicable rate of \$0.0064100 per kWh:
.00641 * 32000 = 205.12
- Energy charges are calculated with reference to the Generation Energy rider, which lists an applicable rate of \$0.04504/kWh:

$$0.04504 * 32000 = 1441.28$$

Total 16-hour On-Peak Standby Bill = **\$11,441.73**

Scheduled Outage – 32 hours on-peak

We assumed a 4 day outage in the month of April.

- For standby charges, we calculate the Reservation Fee with reference to the Schedule GS-3 primary demand charge rate of 3.76/kW of standby capacity reserved.

$$3.76 * 2000 = 7520$$

- The Customer Charge is listed as \$95.47
- Charges under the Distribution Investment Rider are calculated with reference to 28.9875% of base distribution costs (represented here by the reservation fee):

$$7520 * .289875 = 2179.86$$

- Generation-related demand charges are calculated with reference to the Generation Capacity rider, which lists an applicable rate of \$0.0064100 per kWh:
.00641 * 64000 = 410.24
- Energy charges are calculated with reference to the Generation Energy rider, which lists an applicable rate of \$0.04504/kWh:

$$0.04504 * 64000 = 2822.56$$

Total 16-hour On-Peak Standby Bill = **\$13,088.13**

Unscheduled Outage

We assumed a 1 day outage in the month of April. There is no difference between Scheduled and Unscheduled outages.

- For standby charges, we calculate the Reservation Fee with reference to the Schedule GS-3 primary demand charge rate of 3.76/kW of standby capacity reserved.

$$3.76 * 2000 = 7520$$

- The Customer Charge is listed as \$95.47
- Charges under the Distribution Investment Rider are calculated with reference to 28.9875% of base distribution costs (represented here by the reservation fee):

$$7520 * .289875 = 2179.86$$

- Generation-related demand charges are calculated with reference to the Generation Capacity rider, which lists an applicable rate of \$0.0064100 per kWh:
.00641 * 32000 = 205.12
- Energy charges are calculated with reference to the Generation Energy rider, which lists an applicable rate of \$0.04504/kWh:

$$0.04504 * 32000 = 1441.28$$

Total 16-hour On-Peak Standby Bill = **\$11,441.73**

First Energy - Ohio

For the following calculations, we built off of Minnesota Power's billing simulations provided in their initial filing in Docket No. E-999/CI-15-115 before the Minnesota Public Utility Commission. We have adapted each scenario for a General Service customer served at the Primary Distribution level. We assume a General Service customer with 3,000 kW in supplemental service and 2,000 kW in reserved standby service under the Partial Service Rider.

This analysis takes into account the following Riders:

- Partial Service Rider
- Distribution Modernization Rider (Rider DMR)

Note that other Riders are ignored for the purpose of this analysis.

Summary:

No Outage = \$9118.70

Scheduled Outage 16 hours off-peak: \$9181.36

Scheduled Outage 16 hours on-peak: \$11,579.92

Scheduled Outage 8 hours on-peak, 8 hours off-peak: \$10,380.64

Scheduled Outage 32 hours on-peak: \$14,041.13

Unscheduled Outage 8 hours on-peak, 8 hours off-peak: \$11,210.64

No Outage

For the “no outage” calculation, we assumed an April peak load of 3,000 kW.

- For standby charges, we calculate the Backup Reservation Fee with reference to the primary distribution rate of 3.88/kW of standby capacity reserved.

$$3.88 * 2000 = 7760$$

- The Administrative Charge is listed as \$47.70
- Charges related to Rider DMR – Distribution Modernization are made in reference to the following rates:

\$0.6555 per kW of capacity

\$0.001958 per kWh

- There are no kWh used in this scenario
- Therefore, Rider DMR charges are calculated as follows:

$$0.6555 * 2000 = 1311.00$$

Total “No Outage” Standby Bill = **\$9118.70**

Scheduled Outage – 16 hours off-peak

Because Daily Backup Power (Demand Charges) are calculated based on on-peak billing demand, there are no demand charges under this scenario. Similarly, because energy charges are calculated based on on-peak energy use, there are no energy charges under this scenario. Therefore, the same charges as above in the “no outage” scenario would apply.

- For standby charges, we calculate the Backup Reservation Fee with reference to the primary distribution rate of 3.88/kW of standby capacity reserved.

$$3.88 * 2000 = 7760$$

- The Administrative Charge is listed as \$47.70
- Charges related to Rider DMR – Distribution Modernization are made in reference to the following rates:

\$0.6555 per kW of capacity

\$0.001958 per kWh

- There are 32000 kWh used in this scenario
- Therefore, Rider DMR charges are calculated as follows:

$$0.6555 * 2000 = 1311.00$$

$$.001958 * 32000 = 62.66$$

$$\text{Total} = 1373.66$$

$$\text{Total 16-hour Off-Peak Standby Bill} = \mathbf{\$9181.36}$$

Scheduled Outage – 16 hours on-peak

This outage is assumed to have taken place over 2 days in April.

Because Daily Backup Power (Demand Charges) are calculated based on on-peak billing demand, there are demand charges under this scenario (based on 2,000 kW of capacity). Similarly, because energy charges are calculated based on on-peak energy use, there are 32,000 kWh worth of energy charges under this scenario.

- As above, standby charges, we calculate the Backup Reservation Fee with reference to the primary distribution rate of 3.88/kW of standby capacity reserved.

$$3.88 * 2000 = 7760$$

- The Administrative Charge is listed as \$47.70
- Charges related to Rider DMR – Distribution Modernization are made in reference to the following rates:

\$0.6555 per kW of capacity

\$0.001958 per kWh

- There are 32000 kWh used in this scenario
- Therefore, Rider DMR charges are calculated as follows:

$$0.6555 * 2000 = 1311.00$$

$$.001958 * 32000 = 62.66$$

Total = 1373.66

- Daily Backup Power (Demand Charges) are calculated with reference to the rate of 0.83 times the amount of capacity, times 50% because it is a scheduled outage. This is then multiplied by the number of days of the outage.

$$0.83 * 2000 * .50 * 2 = 1660$$

- Energy Charges are calculated with reference to the energy charge rate of 0.02308/kWh – based on kWh used during on-peak times.

$$32,000 * 0.02308 = 738.56$$

The total estimated standby charges for this outage scenario would be **\$11,579.92**

Scheduled Outage – 8 hours on-peak, 8 hours off-peak

This outage is assumed to have taken place over 1 day in April.

Because Daily Backup Power (Demand Charges) are calculated based on on-peak billing demand, there are demand charges under this scenario (based on 2,000 kW of capacity). Similarly, because energy charges are calculated based on on-peak energy use, there are 16,000 kWh worth of energy charges under this scenario.

- As above, standby charges, we calculate the Backup Reservation Fee with reference to the primary distribution rate of 3.88/kW of standby capacity reserved.

$$3.88 * 2000 = 7760$$

- The Administrative Charge is listed as \$47.70
- Charges related to Rider DMR – Distribution Modernization are made in reference to the following rates:

\$0.6555 per kW of capacity

\$0.001958 per kWh

- There are 32000 kWh used in this scenario
- Therefore, Rider DMR charges are calculated as follows:

$$0.6555 * 2000 = 1311.00$$

$$.001958 * 32000 = 62.66$$

Total = 1373.66

- Daily Backup Power (Demand Charges) are calculated with reference to the rate of 0.83 times the amount of capacity, times 50% because it is a scheduled outage. This is then multiplied by the number of days of the outage.

$$0.83 * 2000 * .50 * 1 = 830$$

- Energy Charges are calculated with reference to the energy charge rate of 0.02308/kWh – based on kWh used during on-peak times.

$$16,000 * 0.02308 = 369.28$$

The total estimated standby charges for this outage scenario would be **\$10,380.64**

Scheduled Outage – 32 hours on-peak

This outage is assumed to have taken place over 4 days in April.

Because Daily Backup Power (Demand Charges) are calculated based on on-peak billing demand, there are demand charges under this scenario (based on 2,000 kW of capacity). Similarly, because energy charges are calculated based on on-peak energy use, there are 64,000 kWh worth of energy charges under this scenario.

- As above, standby charges, we calculate the Backup Reservation Fee with reference to the primary distribution rate of 3.88/kW of standby capacity reserved.

$$3.88 * 2000 = 7760$$

- The Administrative Charge is listed as \$47.70
- Charges related to Rider DMR – Distribution Modernization are made in reference to the following rates:

\$0.6555 per kW of capacity

\$0.001958 per kWh

- There are 64000 kWh used in this scenario
- Therefore, Rider DMR charges are calculated as follows:

$$0.6555 * 2000 = 1311.00$$

$$.001958 * 64000 = 125.31$$

$$\text{Total} = 1436.31$$

- Daily Backup Power (Demand Charges) are calculated with reference to the rate of 0.83 times the amount of capacity, times 50% because it is a scheduled outage. This is then multiplied by the number of days of the outage.

$$0.83 * 2000 * .50 * 4 = 3320$$

- Energy Charges are calculated with reference to the energy charge rate of 0.02308/kWh – based on kWh used during on-peak times.

$$64,000 * 0.02308 = 1477.12$$

The total estimated standby charges for this outage scenario would be **\$14,041.13**

Unscheduled Outage

This outage is assumed to have taken place over 1 day in April.

Because Daily Backup Power (Demand Charges) are calculated based on on-peak billing demand, there are demand charges under this scenario (based on 2,000 kW of capacity). Similarly, because energy charges are calculated based on on-peak energy use, there are 16,000 kWh worth of energy charges under this scenario.

The key difference between Scheduled and Unscheduled outages is that, for an unscheduled outage, the customer pays 100% of the Daily Backup Power (Demand Charges).

- As above, standby charges, we calculate the Backup Reservation Fee with reference to the primary distribution rate of 3.88/kW of standby capacity reserved.

$$3.88 * 2000 = 7760$$

- The Administrative Charge is listed as \$47.70
- Charges related to Rider DMR – Distribution Modernization are made in reference to the following rates:

\$0.6555 per kW of capacity

\$0.001958 per kWh

- There are 32000 kWh used in this scenario
- Therefore, Rider DMR charges are calculated as follows:

$$0.6555 * 2000 = 1311.00$$

$$.001958 * 32000 = 62.66$$

$$\text{Total} = 1373.66$$

- Daily Backup Power (Demand Charges) are calculated with reference to the rate of 0.83 times the amount of capacity. This is then multiplied by the number of days of the outage.

$$0.83 * 2000 * 1 = 1660$$

- Energy Charges are calculated with reference to the energy charge rate of 0.02308/kWh – based on kWh used during on-peak times.

$$16,000 * 0.02308 = 369.28$$

The total estimated standby charges for this outage scenario would be **\$11,210.64**

Dayton Power & Light

For the following calculations, we built off of Minnesota Power’s billing simulations provided in their initial filing in Docket No. E-999/CI-15-115 before the Minnesota Public Utility Commission. We have adapted each scenario for a General Service customer served at the Primary Distribution level. We assume an Electric Generation Service – Standard Offer Primary customer (Sheet No. G13).

We assume 3000 kW in supplemental service and 2,000 kW in standby service.

This analysis takes into account the following Sheets and Riders:

- Primary Sheet No. D20
- Transmission Cost Recovery Rider – Non-bypassable Sheet No. T8

Note that other Riders are ignored for the purpose of this analysis.

Summary:

No Outage = **\$10,196.88**

Scheduled Outage 16 hours off-peak: **\$15,187.06**

Scheduled Outage 16 hours on-peak: **\$15,187.06**

Scheduled Outage 8 hours on-peak, 8 hours off-peak: **\$15,187.06**

Scheduled Outage 32 hours on-peak: **\$16,809.94**

Unscheduled Outage 8 hours on-peak, 8 hours off-peak: **\$15,187.06**

No Outage

For the “no outage” calculation, we assumed an April peak load of 3,000 kW. We also assume an outage sometime in the past 12 months in June, July, August, December, January or February, which would trigger the demand ratchet (75%) – so 1500 kW of billing demand in this scenario.

Distribution Charges

Distribution demand charges are calculated with reference to the demand charge rate of \$1.84047 per kW of billing demand:

$$1.84047 * 1500 = 2760.71$$

There are no distribution energy charges listed.

The distribution customer charge is \$95.00

Generation Charges

Ordinarily, generation demand charges are calculated with reference to the demand charge rate of 3.4156326 per kW of billing demand:

$$3.4156326 * 1500 = 5123.45$$

Generation energy charges do not apply here, as no kWh were used.

Transmission Charges

Demand Charge \$1.4784868 per kW for all kW of Billing Demand

$$1.4784868 * 1500 = 2217.73$$

Energy Charge \$0.0005034 per kWh

Energy charges do not apply here, as no kWh were used.

Total "No Outage" Standby Bill = **\$10,196.88**

Scheduled Outage – 16 hours off-peak

When an outage takes place, the billing demand is calculated in reference to the full capacity used during the outage – in this case, 2000 kW.

Distribution Charges

Distribution demand charges are calculated with reference to the demand charge rate of \$1.84047 per kW of billing demand:

$$1.84047 * 2000 = 3680.94$$

There are no distribution energy charges listed.

The distribution customer charge is \$95.00

Generation Charges

Ordinarily, generation demand charges are calculated with reference to the demand charge rate of 3.4156326 per kW of billing demand:

$$3.4156326 * 2000 = 6831.27$$

Generation energy charges are calculated with reference to the generation energy charge rate of 0.050212 per kWh

$$0.050212 * 32000 = 1606.78$$

Transmission Charges

Demand Charge \$1.4784868 per kW for all kW of Billing Demand

$$1.4784868 * 2000 = 2956.97$$

Energy Charge \$0.0005034 per kWh

$$0.0005034 * 32000 = 16.096$$

The total estimated standby charges for this outage scenario would be **\$15,187.06**

Scheduled Outage – 16 hours on-peak

When an outage takes place, the billing demand is calculated in reference to the full capacity used during the outage – in this case, 2000 kW.

Distribution Charges

Distribution demand charges are calculated with reference to the demand charge rate of \$1.84047 per kW of billing demand:

$$1.84047 * 2000 = 3680.94$$

There are no distribution energy charges listed.

The distribution customer charge is \$95.00

Generation Charges

Ordinarily, generation demand charges are calculated with reference to the demand charge rate of 3.4156326 per kW of billing demand:

$$3.4156326 * 2000 = 6831.27$$

Generation energy charges are calculated with reference to the generation energy charge rate of 0.050212 per kWh

$$0.050212 * 32000 = 1606.78$$

Transmission Charges

Demand Charge \$1.4784868 per kW for all kW of Billing Demand

$$1.4784868 * 2000 = 2956.97$$

Energy Charge \$0.0005034 per kWh

$$0.0005034 * 32000 = 16.096$$

The total estimated standby charges for this outage scenario would be **\$15,187.06**

Scheduled Outage – 8 hours on-peak, 8 hours off-peak

When an outage takes place, the billing demand is calculated in reference to the full capacity used during the outage – in this case, 2000 kW.

Distribution Charges

Distribution demand charges are calculated with reference to the demand charge rate of \$1.84047 per kW of billing demand:

$$1.84047 * 2000 = 3680.94$$

There are no distribution energy charges listed.

The distribution customer charge is \$95.00

Generation Charges

Ordinarily, generation demand charges are calculated with reference to the demand charge rate of 3.4156326 per kW of billing demand:

$$3.4156326 * 2000 = 6831.27$$

Generation energy charges are calculated with reference to the generation energy charge rate of 0.050212 per kWh

$$0.050212 * 32000 = 1606.78$$

Transmission Charges

Demand Charge \$1.4784868 per kW for all kW of Billing Demand

$$1.4784868 * 2000 = 2956.97$$

Energy Charge \$0.0005034 per kWh

$$0.0005034 * 32000 = 16.096$$

The total estimated standby charges for this outage scenario would be **\$15,187.06**

Scheduled Outage – 32 hours on-peak

When an outage takes place, the billing demand is calculated in reference to the full capacity used during the outage – in this case, 2000 kW.

Distribution Charges

Distribution demand charges are calculated with reference to the demand charge rate of \$1.84047 per kW of billing demand:

$$1.84047 * 2000 = 3680.94$$

There are no distribution energy charges listed.

The distribution customer charge is \$95.00

Generation Charges

Ordinarily, generation demand charges are calculated with reference to the demand charge rate of 3.4156326 per kW of billing demand:

$$3.4156326 * 2000 = 6831.27$$

Generation energy charges are calculated with reference to the generation energy charge rate of 0.050212 per kWh

$$0.050212 * 64000 = 3213.57$$

Transmission Charges

Demand Charge \$1.4784868 per kW for all kW of Billing Demand

$$1.4784868 * 2000 = 2956.97$$

Energy Charge \$0.0005034 per kWh

$$0.0005034 * 64000 = 32.19$$

The total estimated standby charges for this outage scenario would be **\$16,809.94**

Unscheduled Outage

When an outage takes place, the billing demand is calculated in reference to the full capacity used during the outage – in this case, 2000 kW.

Distribution Charges

Distribution demand charges are calculated with reference to the demand charge rate of \$1.84047 per kW of billing demand:

$$1.84047 * 2000 = 3680.94$$

There are no distribution energy charges listed.

The distribution customer charge is \$95.00

Generation Charges

Ordinarily, generation demand charges are calculated with reference to the demand charge rate of 3.4156326 per kW of billing demand:

$$3.4156326 * 2000 = 6831.27$$

Generation energy charges are calculated with reference to the generation energy charge rate of 0.050212 per kWh

$$0.050212 * 32000 = 1606.78$$

Transmission Charges

Demand Charge \$1.4784868 per kW for all kW of Billing Demand

$$1.4784868 * 2000 = 2956.97$$

Energy Charge \$0.0005034 per kWh

$$0.0005034 * 32000 = 16.096$$

The total estimated standby charges for this outage scenario would be **\$15,187.06**