

**BEFORE THE  
PUBLIC UTILITIES COMMISSION OF OHIO**

|  |   |                         |
|--|---|-------------------------|
| In the matter of the application of Ohio | ) |                         |
| Edison Company and Crestline Exempted    | ) |                         |
| Village Schools to Commit Energy         | ) | Case No. 13-0505-EL-EEC |
| Efficiency/Peak Demand Reduction         | ) |                         |
| Programs                                 | ) |                         |

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**NOTICE OF FILING AMENDMENTS TO JOINT APPLICATION**

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Ohio Edison Company ("Ohio Edison") hereby provides notice of its filing of an amendment to the Application to Commit Energy Efficiency/Peak Demand Reduction Program ("Application") that it filed jointly with Crestline Exempted Village Schools ("Crestline") on June 11, 2013. Ohio Edison and Crestline file this amendment to provide additional supporting documentation for the energy savings claimed in the Application

Respectfully submitted,

/s/ Lindsey Sacher

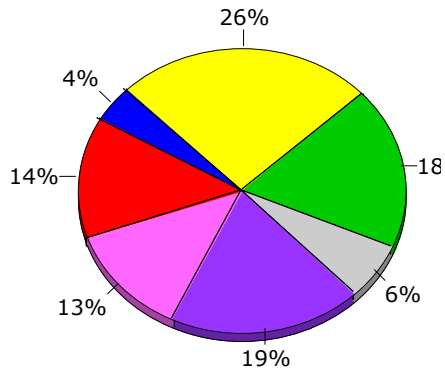
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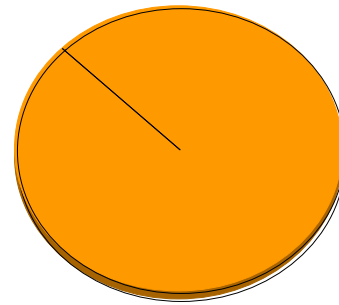
*Attorneys for Ohio Edison*

## Annual Energy Consumption by Enduse

|               | Electricity<br>kWh (x000) | Natural Gas<br>MBtu | Steam<br>Btu | Chilled Water<br>Btu |
|---------------|---------------------------|---------------------|--------------|----------------------|
| Space Cool    | 35.34                     | -                   | -            | -                    |
| Heat Reject.  | -                         | -                   | -            | -                    |
| Refrigeration | -                         | -                   | -            | -                    |
| Space Heat    | 118.93                    | -                   | -            | -                    |
| HP Supp.      | -                         | -                   | -            | -                    |
| Hot Water     | -                         | 157.33              | -            | -                    |
| Vent. Fans    | 107.92                    | -                   | -            | -                    |
| Pumps & Aux.  | 160.25                    | -                   | -            | -                    |
| Ext. Usage    | 55.25                     | -                   | -            | -                    |
| Misc. Equip.  | 155.81                    | -                   | -            | -                    |
| Task Lights   | -                         | -                   | -            | -                    |
| Area Lights   | 219.82                    | -                   | -            | -                    |
| <b>Total</b>  | <b>853.31</b>             | <b>157.33</b>       | <b>-</b>     | <b>-</b>             |



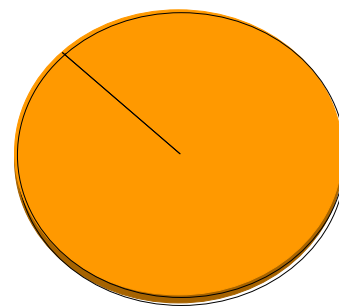
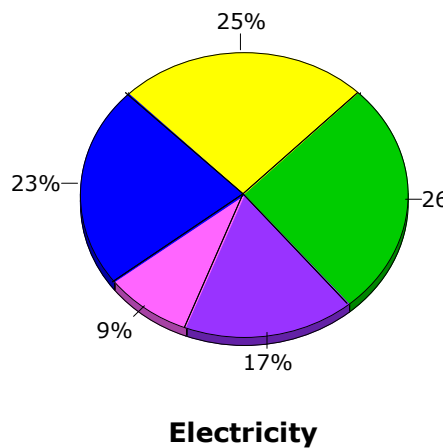
Electricity

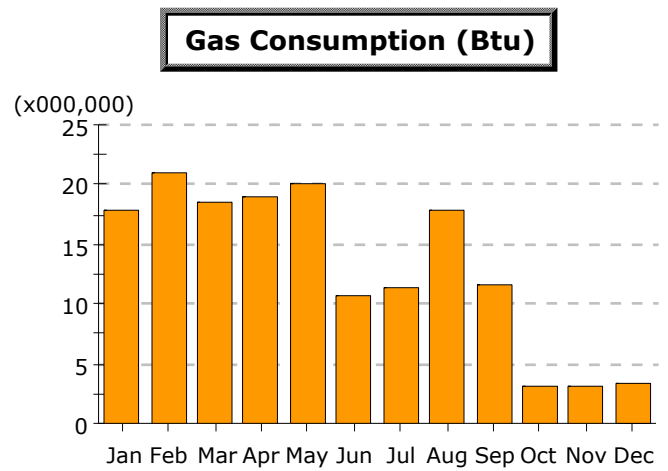
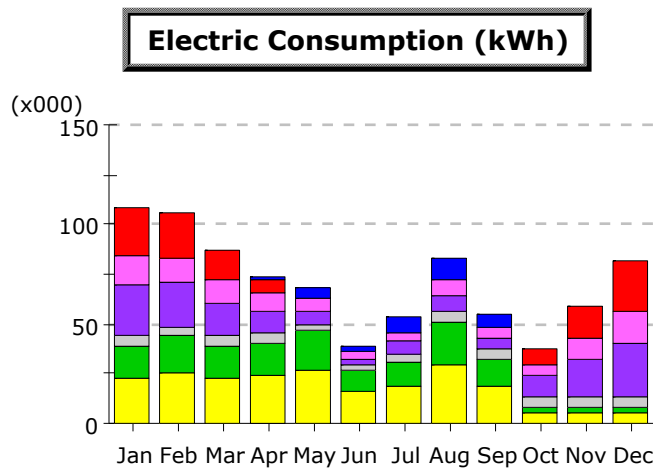


Natural Gas

**Annual Peak Demand by Enduse**

|               | Electricity<br>kW | Natural Gas<br>Btu/h | Steam<br>Btu/h | Chilled Water<br>Btu/h |
|---------------|-------------------|----------------------|----------------|------------------------|
| Space Cool    | 95.21             | -                    | -              | -                      |
| Heat Reject.  | -                 | -                    | -              | -                      |
| Refrigeration | -                 | -                    | -              | -                      |
| Space Heat    | -                 | -                    | -              | -                      |
| HP Supp.      | -                 | -                    | -              | -                      |
| Hot Water     | -                 | 94,940               | -              | -                      |
| Vent. Fans    | 35.54             | -                    | -              | -                      |
| Pumps & Aux.  | 68.54             | -                    | -              | -                      |
| Ext. Usage    | -                 | -                    | -              | -                      |
| Misc. Equip.  | 107.70            | -                    | -              | -                      |
| Task Lights   | -                 | -                    | -              | -                      |
| Area Lights   | 103.05            | -                    | -              | -                      |
| <b>Total</b>  | <b>410.04</b>     | <b>94,940</b>        | -              | -                      |

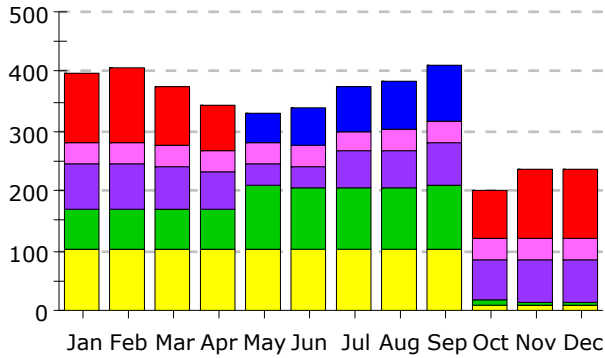
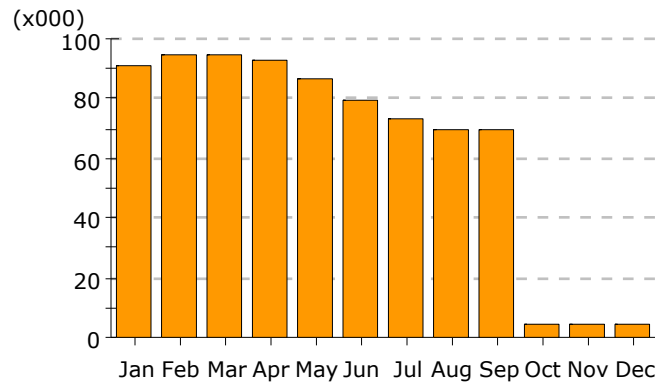


**Electric Consumption (kWh x000)**

|               | Jan           | Feb           | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total         |
|---------------|---------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Space Cool    | 0.09          | 0.07          | 0.27         | 0.67         | 5.63         | 3.01         | 7.46         | 11.38        | 6.67         | 0.01         | 0.00         | 0.09         | 35.34         |
| Heat Reject.  | -             | -             | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Refrigeration | -             | -             | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Space Heat    | 24.46         | 22.28         | 14.39        | 7.31         | 0.69         | 0.18         | 0.01         | 0.06         | 0.09         | 7.17         | 16.32        | 25.99        | 118.93        |
| HP Supp.      | -             | -             | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Hot Water     | -             | -             | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Vent. Fans    | 14.83         | 13.04         | 12.16        | 9.19         | 6.57         | 3.43         | 4.37         | 7.15         | 4.34         | 6.31         | 11.11        | 15.39        | 107.92        |
| Pumps & Aux.  | 25.19         | 21.96         | 17.04        | 11.03        | 6.11         | 2.94         | 7.10         | 8.69         | 5.68         | 9.70         | 18.11        | 26.69        | 160.25        |
| Ext. Usage    | 5.53          | 4.24          | 4.70         | 4.55         | 3.25         | 3.14         | 3.25         | 5.29         | 5.12         | 5.29         | 5.35         | 5.53         | 55.25         |
| Misc. Equip.  | 16.18         | 18.44         | 16.18        | 16.93        | 19.55        | 11.04        | 12.81        | 21.23        | 13.57        | 3.36         | 3.44         | 3.08         | 155.81        |
| Task Lights   | -             | -             | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -             |
| Area Lights   | 22.82         | 25.76         | 22.72        | 23.66        | 27.17        | 15.67        | 18.09        | 29.46        | 19.13        | 5.19         | 5.23         | 4.90         | 219.82        |
| <b>Total</b>  | <b>109.10</b> | <b>105.79</b> | <b>87.47</b> | <b>73.34</b> | <b>68.97</b> | <b>39.43</b> | <b>53.09</b> | <b>83.24</b> | <b>54.59</b> | <b>37.04</b> | <b>59.56</b> | <b>81.68</b> | <b>853.31</b> |

**Gas Consumption (Btu x000,000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct         | Nov         | Dec         | Total         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|---------------|
| Space Cool    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Space Heat    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Hot Water     | 17.82        | 20.89        | 18.48        | 18.93        | 20.13        | 10.72        | 11.46        | 17.76        | 11.51        | 3.05        | 3.14        | 3.45        | 157.33        |
| Vent. Fans    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Pumps & Aux.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Ext. Usage    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Misc. Equip.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Area Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| <b>Total</b>  | <b>17.82</b> | <b>20.89</b> | <b>18.48</b> | <b>18.93</b> | <b>20.13</b> | <b>10.72</b> | <b>11.46</b> | <b>17.76</b> | <b>11.51</b> | <b>3.05</b> | <b>3.14</b> | <b>3.45</b> | <b>157.33</b> |

**Electric Demand (kW)****Gas Demand (Btu/h)****Electric Demand (kW)**

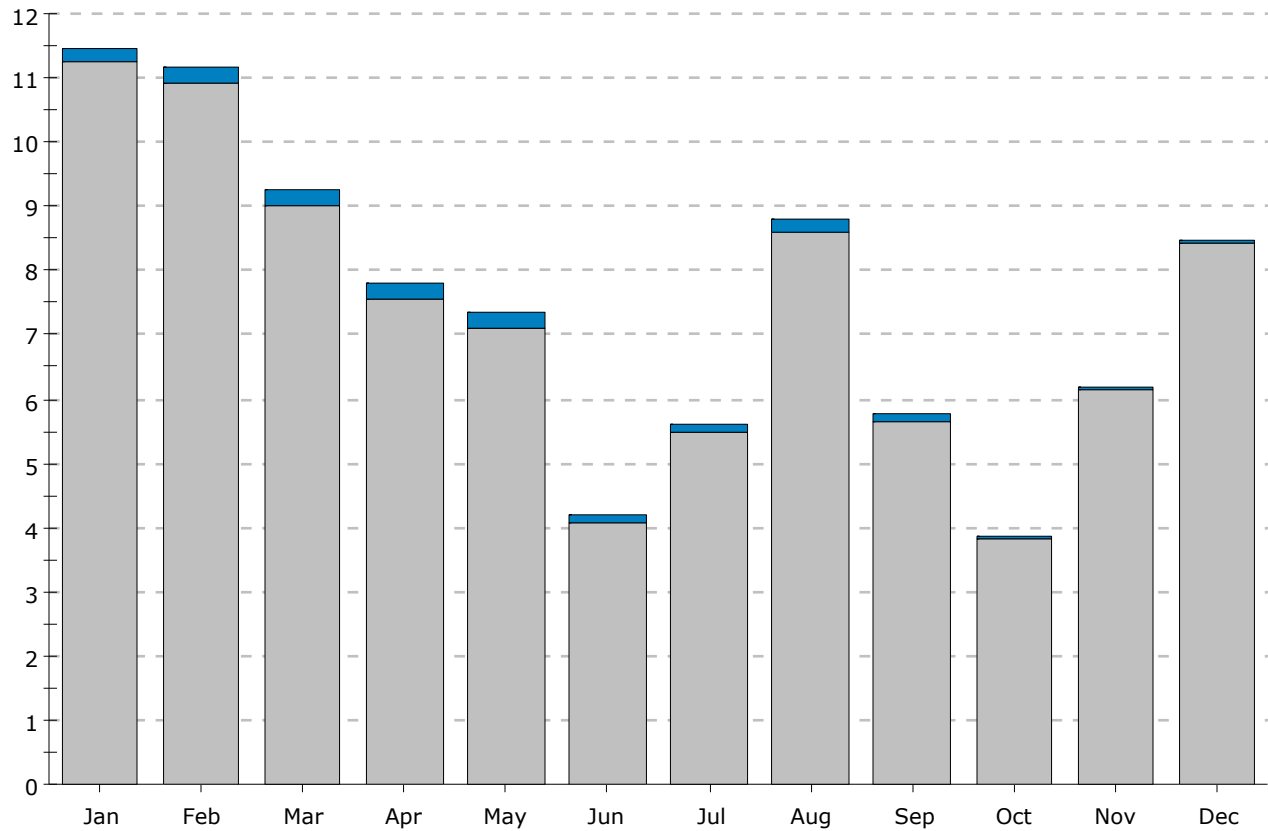
|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct          | Nov          | Dec          | Total          |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|
| Space Cool    | -            | -            | -            | -            | 52.3         | 60.1         | 73.0         | 79.8         | 95.2         | -            | -            | -            | 360.4          |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Space Heat    | 116.5        | 125.9        | 98.9         | 74.1         | -            | -            | -            | -            | -            | 84.5         | 117.4        | 115.2        | 732.4          |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Hot Water     | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Vent. Fans    | 35.5         | 35.5         | 35.5         | 35.5         | 35.5         | 35.5         | 35.5         | 35.5         | 35.5         | 35.5         | 35.5         | 35.5         | 426.5          |
| Pumps & Aux.  | 75.0         | 75.0         | 73.1         | 64.7         | 33.7         | 37.2         | 60.1         | 62.0         | 68.5         | 66.8         | 68.9         | 69.6         | 754.5          |
| Ext. Usage    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | 1.7          | 1.7          | 3.5            |
| Misc. Equip.  | 65.2         | 65.2         | 65.2         | 65.2         | 107.7        | 102.7        | 102.7        | 102.7        | 107.7        | 6.2          | 5.3          | 5.3          | 801.1          |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| Area Lights   | 104.1        | 103.3        | 103.5        | 103.4        | 103.0        | 103.0        | 103.0        | 103.0        | 103.1        | 9.9          | 7.8          | 7.9          | 955.1          |
| <b>Total</b>  | <b>396.3</b> | <b>405.0</b> | <b>376.3</b> | <b>343.1</b> | <b>332.2</b> | <b>338.6</b> | <b>374.3</b> | <b>383.0</b> | <b>410.0</b> | <b>202.9</b> | <b>236.7</b> | <b>235.1</b> | <b>4,033.4</b> |

**Gas Demand (Btu/h x000)**

|               | Jan          | Feb          | Mar          | Apr          | May          | Jun          | Jul          | Aug          | Sep          | Oct         | Nov         | Dec         | Total         |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|---------------|
| Space Cool    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Heat Reject.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Refrigeration | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Space Heat    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| HP Supp.      | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Hot Water     | 91.13        | 94.71        | 94.94        | 93.21        | 86.35        | 79.60        | 73.60        | 69.91        | 69.65        | 4.27        | 4.45        | 4.71        | 766.54        |
| Vent. Fans    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Pumps & Aux.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Ext. Usage    | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Misc. Equip.  | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Task Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| Area Lights   | -            | -            | -            | -            | -            | -            | -            | -            | -            | -           | -           | -           | -             |
| <b>Total</b>  | <b>91.13</b> | <b>94.71</b> | <b>94.94</b> | <b>93.21</b> | <b>86.35</b> | <b>79.60</b> | <b>73.60</b> | <b>69.91</b> | <b>69.65</b> | <b>4.27</b> | <b>4.45</b> | <b>4.71</b> | <b>766.54</b> |

**Monthly Utility Bills (\$)**

(x000)



Electric 2009 Ohio Average (annual bill: \$ 87,976)      NG 2009 Ohio Average (annual bill: \$ 1,978)

**Total Annual Bill Across All Rates: \$ 89,954**

## Annual Energy and Demand (pg 1 of 2)

| and Demand (pg 1 of 2)      |                       | Ann. Source Energy |                | Annual Site Energy |                | Lighting     | HVAC Energy  |                |            | Peak     |              |
|-----------------------------|-----------------------|--------------------|----------------|--------------------|----------------|--------------|--------------|----------------|------------|----------|--------------|
|                             |                       | Total Mbtu         | EUI kBtu/sf/yr | Elect kWh          | Nat Gas Therms | Electric kWh | Electric kWh | Nat Gas Therms | Total Mbtu | Elect kW | Cooling Tons |
| Annual Energy USE or DEMAND |                       |                    |                |                    |                |              |              |                |            |          |              |
| 0                           | Base Design           | 17,811             | 131.56         | 1,699,539          | 4,099          | 309,401      | 1,120,982    | --             | 3,826      | 1,970    | 303          |
| 1                           | 0+90 Degree Rotation  | 17,933             | 132.46         | 1,711,385          | 4,100          | 309,401      | 1,132,828    | --             | 3,866      | 1,968    | 299          |
| 2                           | 0+180 Degree Rotation | 18,094             | 133.65         | 1,727,098          | 4,101          | 309,401      | 1,148,541    | --             | 3,920      | 1,913    | 287          |
| 3                           | 0+270 Degree Rotation | 17,875             | 132.03         | 1,705,699          | 4,100          | 309,401      | 1,127,142    | --             | 3,847      | 1,947    | 298          |

### Incremental SAVINGS (values are relative to previous measure (% savings are relative to base case use), negative entries indicate increased use)

|   |                       |      |             |               |          |        |               |    |           |         |         |
|---|-----------------------|------|-------------|---------------|----------|--------|---------------|----|-----------|---------|---------|
| 1 | 0+90 Degree Rotation  | -121 | -0.90 (-1%) | -11,845 (-1%) | -2 (-0%) | 0 (0%) | -11,845 (-1%) | -- | -40 (-1%) | 2 (0%)  | 4 (1%)  |
| 2 | 0+180 Degree Rotation | -282 | -2.09 (-2%) | -27,559 (-2%) | -2 (-0%) | 0 (0%) | -27,559 (-2%) | -- | -94 (-2%) | 57 (3%) | 15 (5%) |
| 3 | 0+270 Degree Rotation | -63  | -0.47 (-0%) | -6,160 (-0%)  | -2 (-0%) | 0 (0%) | -6,160 (-1%)  | -- | -21 (-1%) | 24 (1%) | 5 (2%)  |

### Cumulative SAVINGS (values (and % savings) are relative to the Base Case, negative entries indicate increased use)

|   |                       |      |             |               |          |        |               |    |           |         |         |
|---|-----------------------|------|-------------|---------------|----------|--------|---------------|----|-----------|---------|---------|
| 1 | 0+90 Degree Rotation  | -121 | -0.90 (-1%) | -11,845 (-1%) | -2 (-0%) | 0 (0%) | -11,845 (-1%) | -- | -40 (-1%) | 2 (0%)  | 4 (1%)  |
| 2 | 0+180 Degree Rotation | -282 | -2.09 (-2%) | -27,559 (-2%) | -2 (-0%) | 0 (0%) | -27,559 (-2%) | -- | -94 (-2%) | 57 (3%) | 15 (5%) |
| 3 | 0+270 Degree Rotation | -63  | -0.47 (-0%) | -6,160 (-0%)  | -2 (-0%) | 0 (0%) | -6,160 (-1%)  | -- | -21 (-1%) | 24 (1%) | 5 (2%)  |

## Annual Costs (pg 2 of 2)

[illegible]



Annual Electric Energy by Enduse (pg 1 of 4)

|                         |                       | Ambient<br>Lights | Task<br>Lights | Misc<br>Equip | Space<br>Heating | Space<br>Cooling | Heat<br>Reject | Pumps<br>& Aux | Vent<br>Fans | Dom<br>Ht Wtr | Exterior<br>Usage | Total     |
|-------------------------|-----------------------|-------------------|----------------|---------------|------------------|------------------|----------------|----------------|--------------|---------------|-------------------|-----------|
| Annual Energy USE (kWh) |                       |                   |                |               |                  |                  |                |                |              |               |                   |           |
| 0                       | Base Design           | 309,401           | 0              | 155,809       | 1,011,122        | 75,722           | 0              | 208            | 33,931       | 0             | 113,348           | 1,699,539 |
| 1                       | 0+90 Degree Rotation  | 309,401           | 0              | 155,809       | 1,025,111        | 74,105           | 0              | 208            | 33,404       | 0             | 113,348           | 1,711,385 |
| 2                       | 0+180 Degree Rotation | 309,401           | 0              | 155,809       | 1,043,524        | 72,247           | 0              | 208            | 32,562       | 0             | 113,348           | 1,727,098 |
| 3                       | 0+270 Degree Rotation | 309,401           | 0              | 155,809       | 1,017,219        | 76,178           | 0              | 208            | 33,537       | 0             | 113,348           | 1,705,699 |
|                         |                       |                   |                |               |                  |                  |                |                |              |               |                   |           |
|                         |                       |                   |                |               |                  |                  |                |                |              |               |                   |           |
|                         |                       |                   |                |               |                  |                  |                |                |              |               |                   |           |
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|                         |                       |                   |                |               |                  |                  |                |                |              |               |                   |           |
|                         |                       |                   |                |               |                  |                  |                |                |              |               |                   |           |
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**Annual Electric Coincident Peak Demand by Enduse (pg 2 of 4)**

|   | Ambient<br>Lights | Task<br>Lights | Misc<br>Equip | Space<br>Heating | Space<br>Cooling | Heat<br>Reject | Pumps<br>& Aux | Vent<br>Fans | Dom<br>Ht Wtr | Exterior<br>Usage | Total   |
|---|-------------------|----------------|---------------|------------------|------------------|----------------|----------------|--------------|---------------|-------------------|---------|
| <b>Annual Energy Coincident Demand (kW)</b> |                   |                |               |                  |                  |                |                |              |               |                   |         |
| 0 Base Design                               | 52.3              | 0.0            | 23.0          | 1,802.9          | 72.0             | 0.0            | 0.0            | 20.2         | 0.0           | 0.0               | 1,970.4 |
| 1 0+90 Degree Rotation                      | 52.3              | 0.0            | 23.0          | 1,802.3          | 70.7             | 0.0            | 0.0            | 19.7         | 0.0           | 0.0               | 1,968.0 |
| 2 0+180 Degree Rotation                     | 52.3              | 0.0            | 23.0          | 1,750.2          | 68.9             | 0.0            | 0.0            | 19.0         | 0.0           | 0.0               | 1,913.4 |
| 3 0+270 Degree Rotation                     | 52.3              | 0.0            | 23.0          | 1,780.0          | 71.5             | 0.0            | 0.0            | 20.0         | 0.0           | 0.0               | 1,946.9 |

**Incremental SAVINGS (kW)** (values are relative to previous measure (% savings are relative to base case demand), negative entries indicate increased demand)

|                         |           |    |           |            |           |    |    |           |    |    |            |
|-------------------------|-----------|----|-----------|------------|-----------|----|----|-----------|----|----|------------|
| 1 0+90 Degree Rotation  | 0.00 (0%) | -- | 0.00 (0%) | 0.58 (0%)  | 1.34 (2%) | -- | -- | 0.50 (3%) | -- | -- | 2.42 (0%)  |
| 2 0+180 Degree Rotation | 0.00 (0%) | -- | 0.00 (0%) | 52.71 (3%) | 3.10 (4%) | -- | -- | 1.20 (6%) | -- | -- | 57.01 (3%) |
| 3 0+270 Degree Rotation | 0.00 (0%) | -- | 0.00 (0%) | 22.86 (1%) | 0.48 (1%) | -- | -- | 0.16 (1%) | -- | -- | 23.50 (1%) |

**Cumulative SAVINGS (kW)** (values (and % savings) are relative to the Base Case, negative entries indicate increased demand)

|                         |           |    |           |            |           |    |    |           |    |    |            |
|-------------------------|-----------|----|-----------|------------|-----------|----|----|-----------|----|----|------------|
| 1 0+90 Degree Rotation  | 0.00 (0%) | -- | 0.00 (0%) | 0.58 (0%)  | 1.34 (2%) | -- | -- | 0.50 (3%) | -- | -- | 2.42 (0%)  |
| 2 0+180 Degree Rotation | 0.00 (0%) | -- | 0.00 (0%) | 52.71 (3%) | 3.10 (4%) | -- | -- | 1.20 (6%) | -- | -- | 57.01 (3%) |
| 3 0+270 Degree Rotation | 0.00 (0%) | -- | 0.00 (0%) | 22.86 (1%) | 0.48 (1%) | -- | -- | 0.16 (1%) | -- | -- | 23.50 (1%) |

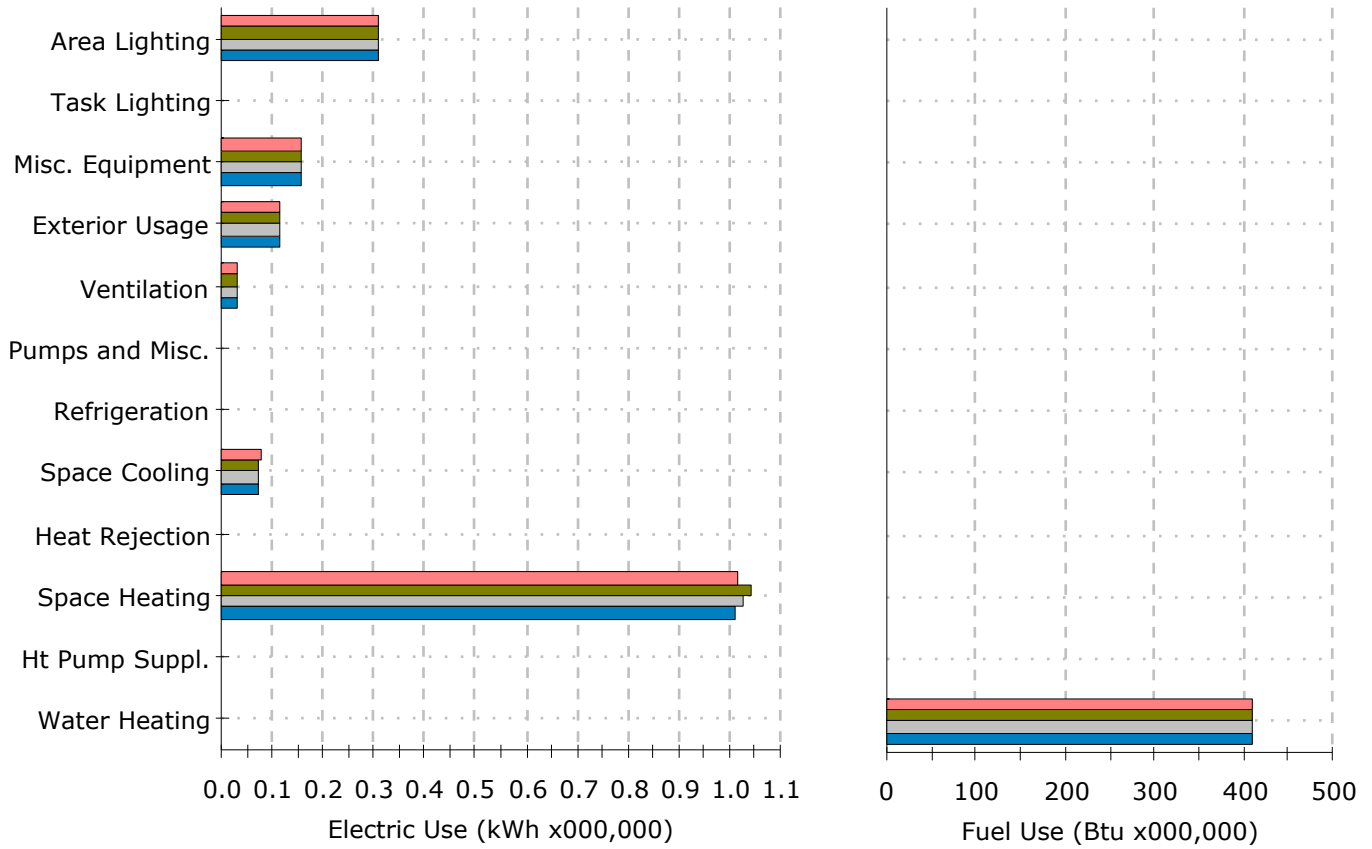
## Annual Electric Non-Coincident Peak Demand by Enduse (pg 3 of 4)

[illegible]

Annual Fuel Energy by Enduse (pg 4 of 4)

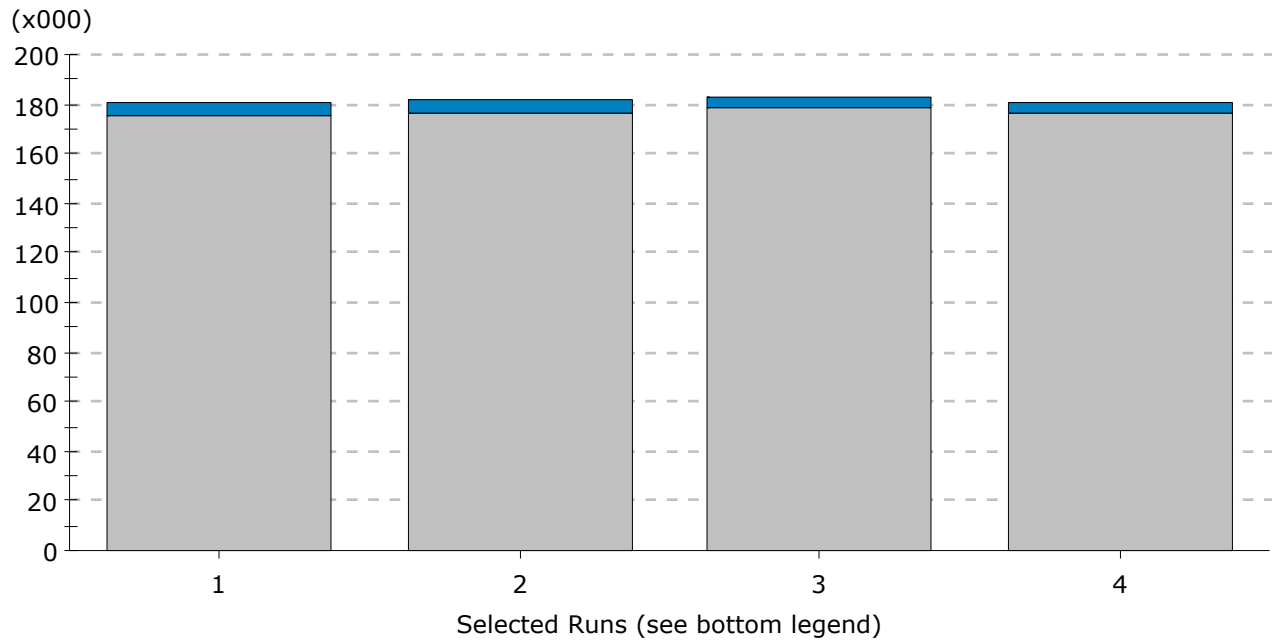
|                          |                       | Misc Equip | Space Heating | Space Cooling | Heat Reject | Pumps & Aux | Vent Fans | Ht Pump Supp | Dom Ht Wtr | Exterior Usage | Total |
|--------------------------|-----------------------|------------|---------------|---------------|-------------|-------------|-----------|--------------|------------|----------------|-------|
| Annual Energy USE (MBtu) |                       |            |               |               |             |             |           |              |            |                |       |
| 0                        | Base Design           | 0.0        | 0.0           | 0.0           | 0.0         | 0.0         | 0.0       | 0.0          | 409.9      | 0.0            | 409.9 |
| 1                        | 0+90 Degree Rotation  | 0.0        | 0.0           | 0.0           | 0.0         | 0.0         | 0.0       | 0.0          | 410.0      | 0.0            | 410.0 |
| 2                        | 0+180 Degree Rotation | 0.0        | 0.0           | 0.0           | 0.0         | 0.0         | 0.0       | 0.0          | 410.1      | 0.0            | 410.1 |
| 3                        | 0+270 Degree Rotation | 0.0        | 0.0           | 0.0           | 0.0         | 0.0         | 0.0       | 0.0          | 410.0      | 0.0            | 410.0 |
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## Annual Energy Consumption by Enduse



- Crestline DD Baseline - Baseline Design (10/01/10 @ 15:24)
- Crestline DD Baseline - 1 (10/01/10 @ 15:24)
- Crestline DD Baseline - 2 (10/01/10 @ 15:25)
- Crestline DD Baseline - 3 (10/01/10 @ 15:26)

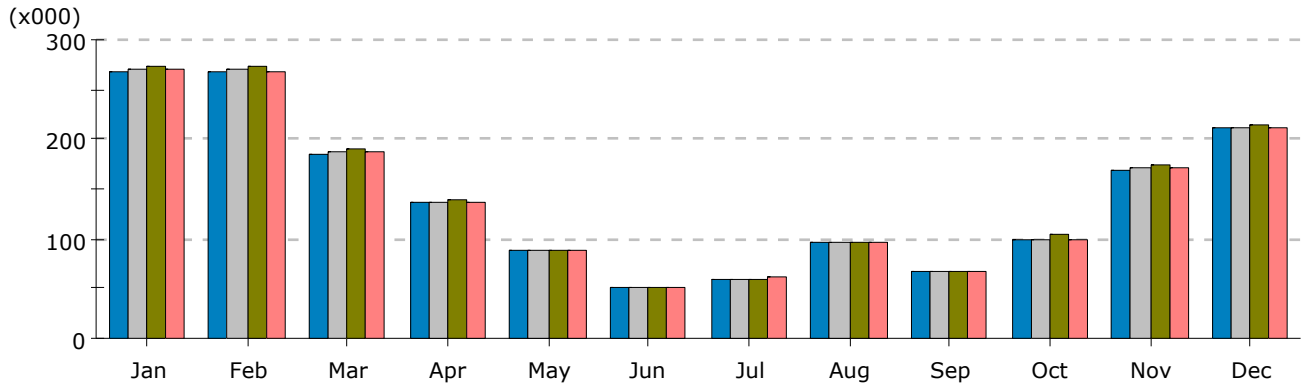
# Annual Utility Bills (\$)



Electric 2009 Ohio Average
  NG 2009 Ohio Average

1. Crestline DD Baseline - Baseline Design (10/01/10 @ 15:24) (annual bill: \$ 180,374)
2. Crestline DD Baseline - 1 (10/01/10 @ 15:24) (annual bill: \$ 181,598)
3. Crestline DD Baseline - 2 (10/01/10 @ 15:25) (annual bill: \$ 183,219)
4. Crestline DD Baseline - 3 (10/01/10 @ 15:26) (annual bill: \$ 181,012)

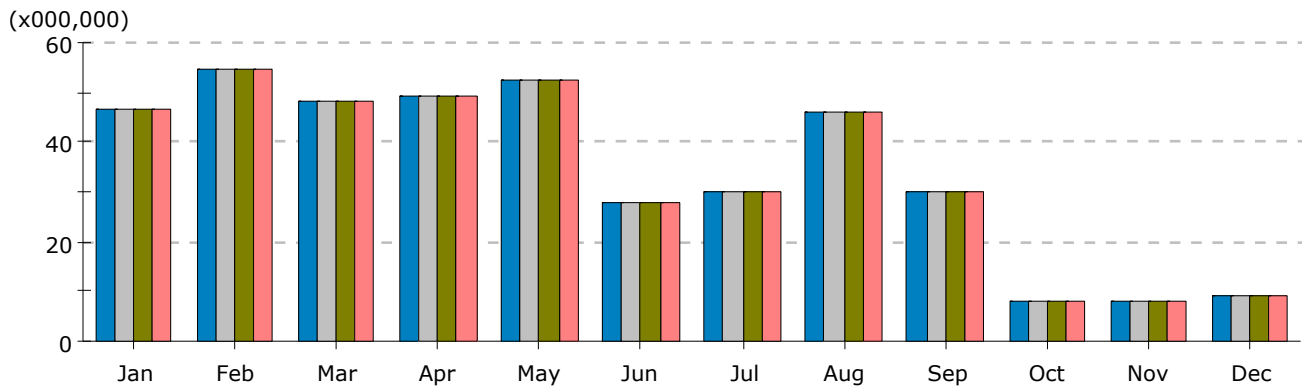
### Electric Consumption (kWh)



|        | Jan   | Feb   | Mar   | Apr   | May  | Jun  | Jul  | Aug  | Sep  | Oct   | Nov   | Dec   | Total   |
|--------|-------|-------|-------|-------|------|------|------|------|------|-------|-------|-------|---------|
| Run 1. | 268.6 | 267.1 | 185.5 | 136.2 | 88.6 | 50.4 | 60.2 | 97.5 | 67.0 | 98.0  | 169.6 | 210.9 | 1,699.5 |
| Run 2. | 270.4 | 269.6 | 187.6 | 137.5 | 88.4 | 50.3 | 60.0 | 96.8 | 66.7 | 99.8  | 171.7 | 212.7 | 1,711.4 |
| Run 3. | 272.7 | 272.3 | 190.2 | 138.7 | 87.9 | 49.7 | 59.7 | 96.1 | 66.4 | 103.6 | 174.9 | 214.9 | 1,727.1 |
| Run 4. | 270.0 | 268.6 | 186.2 | 135.4 | 87.7 | 50.0 | 60.3 | 97.4 | 67.1 | 99.5  | 171.4 | 212.2 | 1,705.7 |
| Run 5. |       |       |       |       |      |      |      |      |      |       |       |       |         |

- 1. Crestline DD Baseline - Baseline Design (10/01/10 @ 15:24)
- 2. Crestline DD Baseline - 1 (10/01/10 @ 15:24)
- 3. Crestline DD Baseline - 2 (10/01/10 @ 15:25)
- 4. Crestline DD Baseline - 3 (10/01/10 @ 15:26)

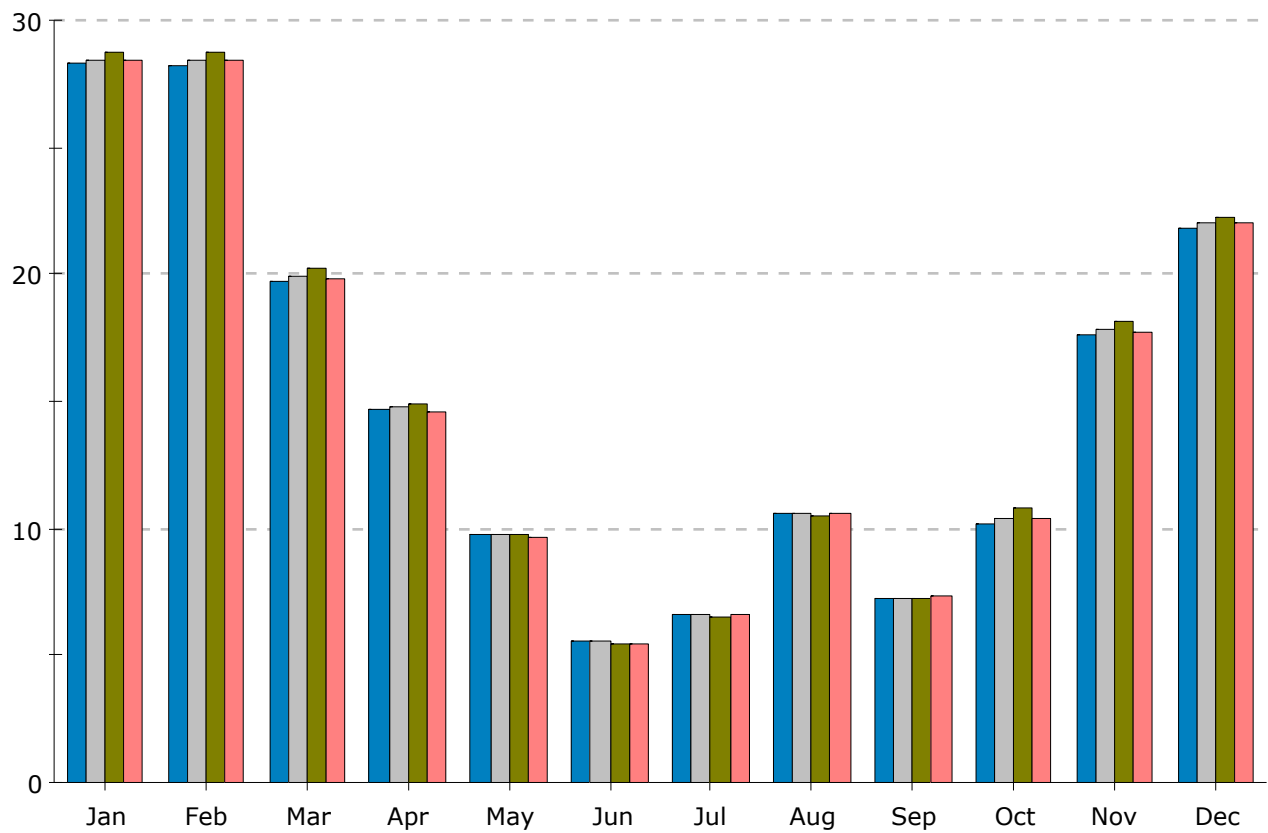
### Gas Consumption (Btu)



|        | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Oct  | Nov  | Dec  | Total  |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|--------|
| Run 1. | 46.46 | 54.41 | 48.15 | 49.27 | 52.39 | 27.89 | 29.77 | 46.17 | 29.97 | 8.01 | 8.24 | 9.12 | 409.85 |
| Run 2. | 46.47 | 54.42 | 48.16 | 49.28 | 52.40 | 27.90 | 29.79 | 46.19 | 30.01 | 8.03 | 8.25 | 9.13 | 410.04 |
| Run 3. | 46.47 | 54.42 | 48.17 | 49.29 | 52.41 | 27.91 | 29.79 | 46.19 | 30.02 | 8.04 | 8.25 | 9.13 | 410.09 |
| Run 4. | 46.46 | 54.41 | 48.16 | 49.28 | 52.41 | 27.91 | 29.79 | 46.19 | 30.00 | 8.02 | 8.24 | 9.12 | 410.01 |
| Run 5. |       |       |       |       |       |       |       |       |       |      |      |      |        |

## Monthly Utility Bills (\$)

(x000)



- Crestline DD Baseline - Baseline Design (10/01/10 @ 15:24)
- Crestline DD Baseline - 1 (10/01/10 @ 15:24)
- Crestline DD Baseline - 2 (10/01/10 @ 15:25)
- Crestline DD Baseline - 3 (10/01/10 @ 15:26)





Project #2

**PROJECT INFORMATION SHEET**

Crestline Exempted Village Schools

**Project Name:** Energy Efficient Motors**Project In-Service Date (MM/DD/YYYY):** 12/19/2012*If more than one date, Please use most current*Please Select Account Assignment Number associated with this Project (found on the Customer Usage Summary Tab )

1

**Please Provide a narrative description of your program including, but not limited to, make, model, and year of any installed and replaced equipment:**

NEMA premium motors were installed on the hydronic pumps for the new facility.

**Total Project Cost:** \$80,000**Type of Project:***(Check One That Applies)*☐ Early replacement of fully functioning equipment with new equipment☐ Installation of new equipment to replace failed equipment☒ Installation of new equipment for new construction or facility expansion☐ Behavioral modification or operational improvement**Please describe the less efficient new equipment that you rejected in favor of the more efficient new equipment.****Project Classification:***(Check all that apply)*☐ Lighting☒ Motor☐ HVAC☐ Air Compressor☐ Controls☐ Refrigeration☐ Process Improvement☐ Water Heating☐ Other/Custom**If Other or Custom Please Explain:****PROJECT INFORMATION SHEET****Equipment Information:**

|   | New    | Old Equipment |
|---|--------|---------------|
| <b>Equipment Specifications (Model No., Size, etc.):</b>                    | 100 hp |               |
| <b>Number of Units:</b>   | 2      |               |
| <b>Efficiency Rating (R-Value, SEER/EER Rating, Motor Efficiency, etc.)</b> | 93.6   |               |
| <b>What was the estimated remaining useful service life:</b>                |        |               |

### Operational Information of Equipment:

Describe the operational period of the equipment (i.e. Months, Days, Hours):

Does this project produce energy savings Monday through Friday during the months of June through August from the hours of 3 PM to 6 PM:

☒ Yes

☐ No

*For a New Facility, Please attach an itemized summary sheet that lists all installed measures that exceed current building standards*

**For operational improvement projects, provide a detailed description of all operational improvements and/or schedule changes for achievement of conservation efforts:**

Replaced 1096 Fixture w T8 3 lamp fixtures at 72 watts with a 2 lamp high efficiency ballast T 8 34 watts per fixture.

### Energy Savings Information:

| Equipment  | Kwh Usage | Yearly hours of operation | Demand (kW)                                       |      |
|--|-----------|---------------------------|---|------|
| Old  | 5,678     |                           |   |      |
| Standard   |           |                           |   |      |
| New  | 0         |                           |   |      |
| Annual reduced kWh attributable to this project: | 5,678     | kWh                       | kW demand reduction attributable to this project: | 0 kW |
| Annual reduced kWh eligible for an incentive :   | 5,678     | kWh                       |   |      |

**Please describe all methodologies, protocols, and practices used or proposed to be used in measuring and verifying program results. Additionally, identify and explain all deviations from any program measurement and verification guidelines that may be published by the Commission.**

Data was taken from the mechanical schedule and input to the motors and drives calculator to determine the cash rebate amount. kWh savings were calculated in attachment C.

**Please describe all documents that provide proof of purchase and verification that project was completed and is in-service. Also, provide an accounting of expenditures for this project. (Must attach all described documents with submission of application). *Label all pages deemed to be confidential***

Proof of purchase is contained in Attachment D (OE.Crestline.HVAC.PoP.AttachmentD). The total amount is the booster pump material line item (boxed in red)



Project #3

**PROJECT INFORMATION SHEET**

Crestline Exempted Village Schools

**Project Name:** Variable Frequency Drives**Project In-Service Date (MM/DD/YYYY):** 12/19/2012*If more than one date, Please use most current*Please Select Account Assignment Number associated with this Project (found on the Customer Usage Summary Tab )

1 ▼

**Please Provide a narrative description of your program including, but not limited to, make, model, and year of any installed and replaced equipment:**

Variable frequency drives were installed on multiple motors throughout the facility.

**Total Project Cost:** \$52,410**Type of Project:***(Check One That Applies)*☐ Early replacement of fully functioning equipment with new equipment☐ Installation of new equipment to replace failed equipment☒ Installation of new equipment for new construction or facility expansion☐ Behavioral modification or operational improvement**Please describe the less efficient new equipment that you rejected in favor of the more efficient new equipment.**

no motor controls

**Project Classification:***(Check all that apply)*☐ Lighting☒ Motor☐ HVAC☐ Air Compressor☒ Controls☐ Refrigeration☐ Process Improvement☐ Water Heating☐ Other/Custom**If Other or Custom Please Explain:****PROJECT INFORMATION SHEET****Equipment Information:**

|   | New                              | Old Equipment |
|---|----------------------------------|---------------|
| <b>Equipment Specifications (Model No., Size, etc.):</b>                    | see motors and drives calculator |               |
| <b>Number of Units:</b>   | see motors and drives calculator |               |
| <b>Efficiency Rating (R-Value, SEER/EER Rating, Motor Efficiency, etc.)</b> | see motors and drives calculator |               |
| <b>What was the estimated remaining useful service life:</b>                | see motors and drives calculator |               |

### Operational Information of Equipment:

Describe the operational period of the equipment (i.e. Months, Days, Hours):

Does this project produce energy savings Monday through Friday during the months of June through August from the hours of 3 PM to 6 PM: ☐ Yes ☒ No

*For a New Facility, Please attach an itemized summary sheet that lists all installed measures that exceed current building standards*

For operational improvement projects, provide a detailed description of all operational improvements and/or schedule changes for achievement of conservation efforts:

### Energy Savings Information:

| Equipment  | Kwh Usage | Yearly hours of operation | Demand (kW)                                       |      |
|--|-----------|---------------------------|---|------|
| Old  | 189,272   |                           |   |      |
| Standard   |           |                           |   |      |
| New  | 0         |                           |   |      |
| Annual reduced kWh attributable to this project: | 189,272   | kWh                       | kW demand reduction attributable to this project: | 0 kW |
| Annual reduced kWh eligible for an incentive :   | 189,272   | kWh                       |   |      |

Please describe all methodologies, protocols, and practices used or proposed to be used in measuring and verifying program results. Additionally, identify and explain all deviations from any program measurement and verification guidelines that may be published by the Commission.

Data was gathered from the plans and input to the motors and drives calculator to determine the cash rebate amount. kWh savings were calculated in attachment C.

Please describe all documents that provide proof of purchase and verification that project was completed and is in-service. Also, provide an accounting of expenditures for this project. (Must attach all described documents with submission of application). *Label all pages deemed to be confidential*

Proof of purchase is contained in Attachment D (OE.Crestline.HVAC.PoP.AttachmentD). The total amount is arrived at by adding the HVAC equipment material line items (boxed in red)

**P-2**

Attachment C

[illegible]

| Enclosure | Make   | Model | HP  | EFF % | RPM  | Minimum Code Efficiency | Savings (kWH) | Savings (kW) |
|-----------|--------|-------|-----|-------|------|-------------------------|---------------|--------------|
| ODP       | Baldor |       | 100 | 93.6  | 3600 | 93                      | 2838.378825   | 0.514199063  |
| ODP       | Baldor |       | 100 | 93.6  | 3600 | 93                      | 2838.378825   | 0.514199063  |
|           |        |       |     |       |      |                         |               |              |
|           |        |       |     |       |      |                         |               |              |
|           |        |       |     |       |      |                         |               |              |
|           |        |       |     |       |      |                         |               |              |
|           |        |       |     |       |      |                         |               |              |
|           |        |       |     |       |      |                         |               |              |
| Totals    |        |       |     |       |      |                         | 5676.76       | 1.028398125  |

## Attachment G

|                               | kWh          |
|-------------------------------|--------------|
| Baseline Building Model Usage | 1,699,539.00 |
| Proposed Buidlig Model Usage  | 853,310.00   |
| Total Building Model Savings  | 846,229.00   |

| Project |                       | kWh Savings |
|---------|-----------------------|-------------|
| 1       | Lighting              | 202463      |
| 2       | Motors                | 5678        |
| 3       | VFDs                  | 189272      |
| 4       | Building Energy Model | 448,816     |

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**8/1/2013 10:50:21 AM**

**in**

**Case No(s). 13-0505-EL-EEC**

Summary: Amended Application electronically filed by Ms. Lindsey E Sacher on behalf of Ohio Edison Company and Crestline Exempted Village Schools