# BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

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)		
)	Case No.	13-0505-EL-EEC
)		
)		
	) ) ) )	) ) Case No. )

#### NOTICE OF FILING AMENDMENTS TO JOINT APPLICATION

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

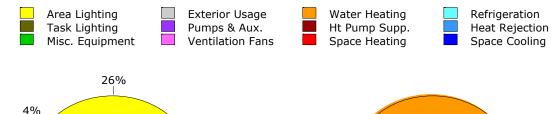
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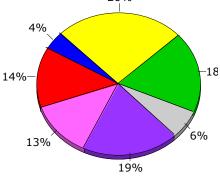
Colleen M. O'Neil (0066576) Lindsey E. Sacher (0087883) CALFEE, HALTER & GRISWOLD LLP 1405 East Sixth Street Cleveland, OH 44114 (216) 622-8200 coneil@calfee.com lsacher@calfee.com

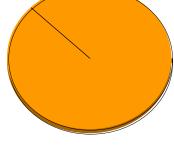
Attorneys for Ohio Edison

#### **Annual Energy Consumption by Enduse**

	Electricity kWh (x000)	Natural Gas MBtu	Steam Btu	Chilled Water Btu
Space Cool	35.34	-	-	-
Heat Reject.	-	-	-	· -
Refrigeration	-	-	-	· <u>-</u>
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	-	-	-
Total	853.31	157.33	-	-





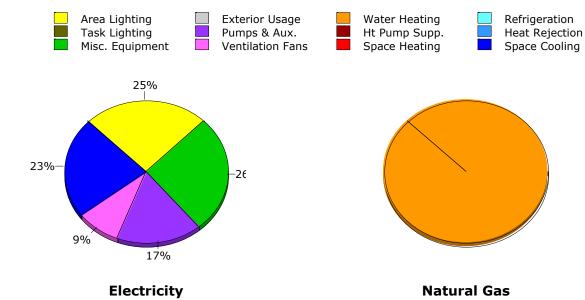


**Electricity** 

**Natural Gas** 

#### **Annual Peak Demand by Enduse**

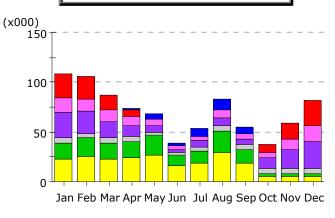
	Electricity kW	Natural Gas Btu/h	Steam Btu/h	Chilled Water Btu/h
Space Cool	95.21	-		
Heat Reject.	-	-		
Refrigeration	-	-		
Space Heat	-	-		
HP Supp.	-	-		
Hot Water	-	94,940		
Vent. Fans	35.54	-		
Pumps & Aux.	68.54	-		
Ext. Usage	-	-		
Misc. Equip.	107.70	-		
Task Lights	-	-		
Area Lights	103.05	-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

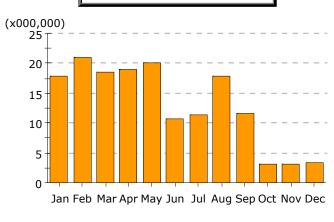


**Natural Gas** 

# **Electric Consumption (kWh)**

# Gas Consumption (Btu)





Area Lighting Exterior Usage
Task Lighting Pumps & Aux.
Misc. Equipment Ventilation Fans

Water Heating
Ht Pump Supp.
Space Heating

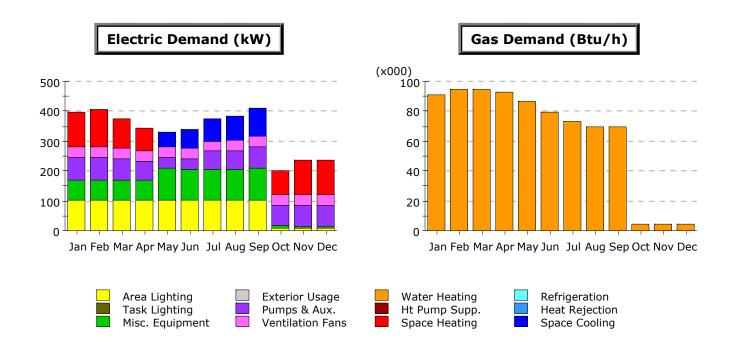
Refrigeration
Heat Rejection
Space Cooling

#### 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
Total	109.10	105.79	87.47	73.34	68.97	39.43	53.09	83.24	54.59	37.04	59.56	81.68	853.31

#### 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	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	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



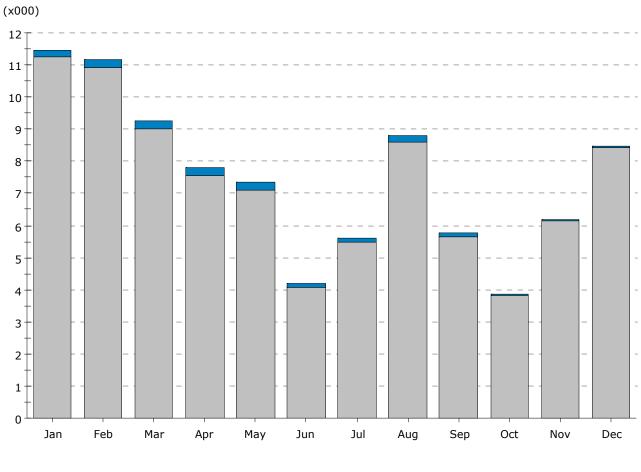
#### **Electric Demand (kW)**

	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		
Total	396.3	405.0	376.3	343.1	332.2	338.6	374.3	383.0	410.0	202.9	236.7	235.1	4,033.4		

#### 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	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	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

# Monthly Utility Bills (\$)



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
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an	and Demand (pg 1 of 2)		Source Energy	Annual Site Energy		<u>Lighting</u>		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
Annua	I 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)
Cumulative SAVINGS	(values (and % savings) are relative to the base ease, negative entries marcate mercasea ase,

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)

				Incer	<u>LCC</u>				
Annu	al COST	Electric kWh(\$)	Electric kW(\$)	Electric Total(\$)	Nat Gas Total(\$)	Total (\$)	Owner (\$)	Design Team (\$)	Total (PV\$)
0	Base Design	\$ 175,222		\$ 175,222	\$ 5,152	\$ 180,374			\$ 1,251,903
1	0+90 Degree Rotation	\$ 176,444		\$ 176,444	\$ 5,154	\$ 181,598			\$ 1,260,371
2	0+180 Degree Rotation	\$ 178,064		\$ 178,064	\$ 5,155	\$ 183,219			\$ 1,271,586
3	0+270 Degree Rotation	\$ 175,858		\$ 175,858	\$ 5,154	\$ 181,012			\$ 1,256,318

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

1	0+90 Degree Rotation	\$ -1,222	 \$ -1,222	\$ -2	\$ -1,224	\$ -8,469
2	0+180 Degree Rotation	\$ -2,842	 \$ -2,842	\$ -3	\$ -2,845	\$ -11,214
3	0+270 Degree Rotation	\$ -636	 \$ -636	\$ -2	\$ -638	\$ 15,268

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

1	0+90 Degree Rotation	\$ -1,222	 \$ -1,222	\$ -2	\$ -1,224	\$ -8,469
2	0+180 Degree Rotation	\$ -2,842	 \$ -2,842	\$ -3	\$ -2,845	\$ -19,683
3	0+270 Degree Rotation	\$ -636	 \$ -636	\$ -2	\$ -638	\$ -4,415

### Annual Electric Energy by Enduse (pg 1 of 4)

		Ambient Lights	Task Lights	Misc Equip	Space Heating	Space Cooling	Heat Reject	Pumps & Aux	Vent Fans	Dom Ht Wtr	Exterior Usage	Total
Α	nnual 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

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

1	0+90 Degree Rotation	0.00 (0%)	 0.00 (0%)	-13.99 (-1%)	1.62 (2%)	 0.00 (0%)	0.53 (2%)	 0.00 (0%)	-11.85 (-1%)
2	0+180 Degree Rotation	0.00 (0%)	 0.00 (0%)	-32.40 (-3%)	3.47 (5%)	 0.00 (0%)	1.37 (4%)	 0.00 (0%)	-27.56 (-2%)
3	0+270 Degree Rotation	0.00 (0%)	 0.00 (0%)	-6.10 (-1%)	-0.46 (-1%)	 0.00 (0%)	0.39 (1%)	 0.00 (0%)	-6.16 (-0%)

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

1 0+90 Degree Rotation	0.00 (0%)	 0.00 (0%)	-13.99 (-1%)	1.62 (2%)	 0.00 (0%)	0.53 (2%)	 0.00 (0%)	-11.85 (-1%)
2 0+180 Degree Rotation	0.00 (0%)	 0.00 (0%)	-32.40 (-3%)	3.47 (5%)	 0.00 (0%)	1.37 (4%)	 0.00 (0%)	-27.56 (-2%)
3 0+270 Degree Rotation	0.00 (0%)	 0.00 (0%)	-6.10 (-1%)	-0.46 (-1%)	 0.00 (0%)	0.39 (1%)	 0.00 (0%)	-6.16 (-0%)

### Annual Electric Coincident Peak Demand by Enduse (pg 2 of 4)

Aı	nnual Energy Coincident	Ambient Lights <b>Demand (kW</b> )	Task Lights	Misc Equip	Space Heating	Space Cooling	Heat Reject	Pumps & Aux	Vent Fans	Dom Ht Wtr	Exterior Usage	Total
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 Ra	se 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	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)

A	nnual Energy Non-Coincid	Ambient Lights <b>dent Demand</b>	Task Lights ( <b>kW)</b>	Misc Equip	Space Heating	Space Cooling	Heat Reject	Pumps & Aux	Vent Fans	Dom Ht Wtr	Exterior Usage	Total
0	Base Design	146.2	0.0	107.7	1,802.9	339.8	0.0	0.1	20.2	0.0	32.0	1,970.4
1	0+90 Degree Rotation	146.2	0.0	107.7	1,802.3	335.2	0.0	0.1	19.7	0.0	32.0	1,968.0
2	0+180 Degree Rotation	146.2	0.0	107.7	1,750.2	322.4	0.0	0.1	19.0	0.0	32.0	1,913.4
3	0+270 Degree Rotation	146.2	0.0	107.7	1,780.0	334.7	0.0	0.1	20.0	0.0	32.0	1,946.9

Incremental	SAVINGS (K	W) (values are relative	to previous n	ieasure (% sav	vings are relative	to base case demand),	negative entrie	s indicate increased demand)
	<b>-</b>	0.00 (00)	0 00 (00()	0 50 (00()	4 50 (40()	0.00 (00()	0 50 (00()	0.00 (00)

1	0+90 Degree Rotation	0.00 (0%)	 0.00 (0%)	0.58 (0%)	4.58 (1%)	 0.00 (0%)	0.50 (3%)	 0.00 (0%)	2.42 (0%)
2	0+180 Degree Rotation	0.00 (0%)	 0.00 (0%)	52.71 (3%)	17.38 (5%)	 0.00 (0%)	1.20 (6%)	 0.00 (0%)	57.01 (3%)
3	0+270 Degree Rotation	0.00 (0%)	 0.00 (0%)	22.86 (1%)	5.07 (1%)	 0.00 (0%)	0.16 (1%)	 0.00 (0%)	23.50 (1%)

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

1	0+90 Degree Rotation	0.00 (0%)	 0.00 (0%)	0.58 (0%)	4.58 (1%)	 0.00 (0%)	0.50 (3%)	 0.00 (0%)	2.42 (0%)
2	0+180 Degree Rotation	0.00 (0%)	 0.00 (0%)	52.71 (3%)	17.38 (5%)	 0.00 (0%)	1.20 (6%)	 0.00 (0%)	57.01 (3%)
3	0+270 Degree Rotation	0.00 (0%)	 0.00 (0%)	22.86 (1%)	5.07 (1%)	 0.00 (0%)	0.16 (1%)	 0.00 (0%)	23.50 (1%)

### Annual Fuel Energy by Enduse (pg 4 of 4)

A	nnual Energy USE (MBtu)	Misc Equip	Space Heating	Space Cooling	Heat Reject	Pumps & Aux	Vent Fans	Ht Pump Supp	Dom Ht Wtr	Exterior Usage	Total
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

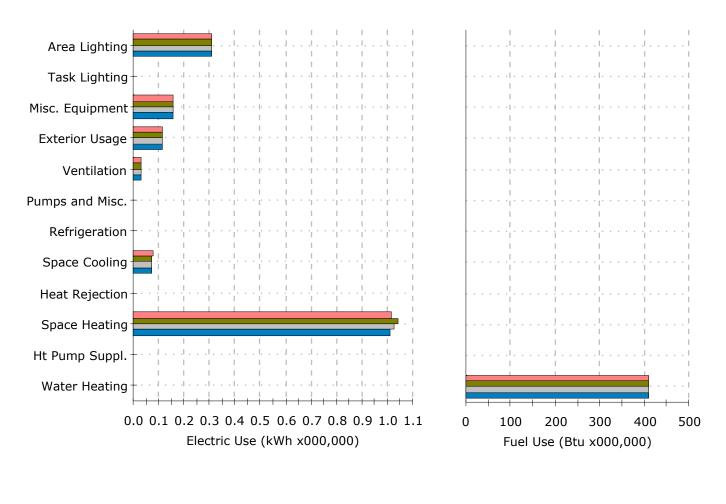
#### Incremental SAVINGS (MBtu) (values are relative to previous measure (% savings are relative to base case use), negative entries indicate increased use)

1	0+90 Degree Rotation	 	 	 	 -0.18 (-0%)	 -0.18 (-0%)
2	0+180 Degree Rotation	 	 	 	 -0.23 (-0%)	 -0.23 (-0%)
3	0+270 Degree Rotation	 	 	 	 -0.16 (-0%)	 -0.16 (-0%)

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

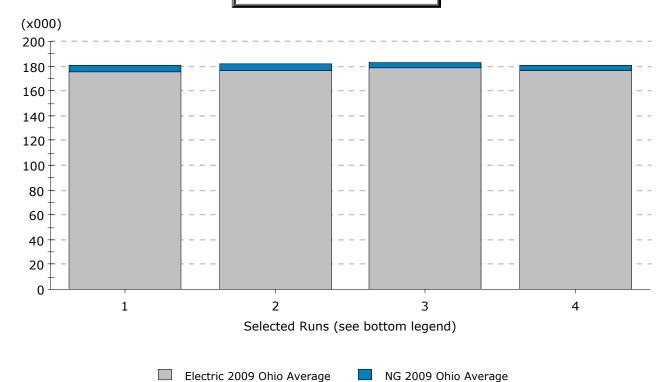
1	0+90 Degree Rotation	 	 	 	 -0.18 (-0%)	 -0.18 (-0%)
2	0+180 Degree Rotation	 	 	 	 -0.23 (-0%)	 -0.23 (-0%)
3	0+270 Degree Rotation	 	 	 	 -0.16 (-0%)	 -0.16 (-0%)

# **Annual Energy Consumption by Enduse**



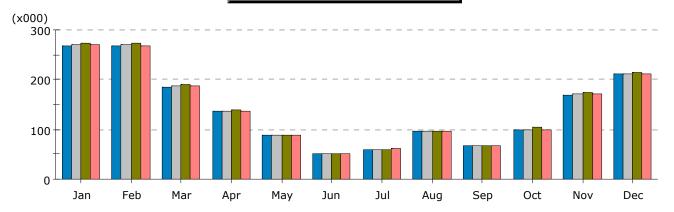
Crestline DD Baseline - Baseline Design (10/01/10 @ 15:24)
Crestline DD Baseline - 1 (10/01/10 @ 15:24)
Crestline DD Baseline - 2 (10/01/10 @ 15:25)
Crestline DD Baseline - 3 (10/01/10 @ 15:26)

# **Annual Utility Bills (\$)**



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

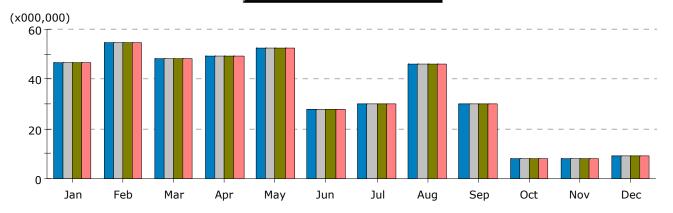
# **Electric Consumption (kWh)**



	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.													

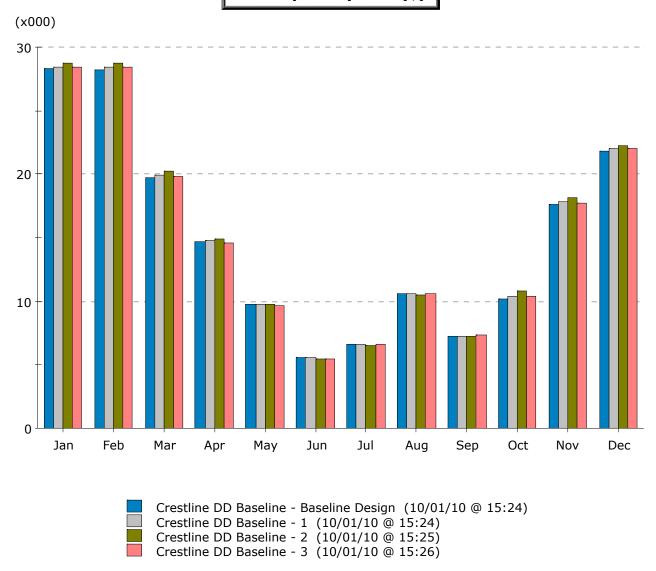
- 1. Crestline DD Baseline Baseline Design (10/01/10 @ 15:24)
- Crestline DD Baseline 1 (10/01/10 @ 15:24)
   Crestline DD Baseline 2 (10/01/10 @ 15:25)
- 4. Crestline DD Baseline 3 (10/01/10 @ 15:26)

# 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 (\$)





PROJECT INFORMATION SHEET											
	Crestline Exempted Village	Schools									
Project Name: Energy Efficient	Motors										
Project In-Service Date (MM/DD/YYYY):		count Assignment Number associated and on the Customer Usage Summary 2									
If more than one date, Please use most current											
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 hyd											
Total Project Cost: \$80,000											
	Type of Project										
(Check One That Applies)											
Early replacement of fully Installation	a a In	stallation of navy a grimmont for navy	Behavioral								
l and a mistaliano	n of new equipment to led equipment	stallation of new equipment for new nstruction or facility expansion	modification or operational								
new equipment	rea equipment		improvement								
Planca describe the loss officien	t now aguinment that you rejected	l in favor of the more efficient new e	auinmont								
Trease describe the less efficient	new equipment that you rejected	in ravor of the more efficient new e	quipment.								
	Project Classificati	on:									
(Check all that apply)											
☐ Lighting	☐ Air Compressor ☐ C	Controls Refrigeration									
☐ Process Improvement	☐ Water Heating	☐ Other/Custom									
If Other or Custom Please Explain:											
	PROJECT INFORMATIO	N SHEET									
	Equipment Informa										
		1									
	Now	ONE									
Equipment Specifications	New	Old E	quipment								
(Model No., Size, etc.):	100 hp										
Number of Units:	·										
	2										
Efficiency Rating (R-Value, SEER/EER	00.6										
Rating, Motor Efficiency, etc.)  What was the estimated remaining useful	93.6										
service life:											

		Operational I	Information of Equipment:					
perational period	of the equipmen	nt (i.e. Months,	Days, Hours):					
ect produce ener through	gy savings Mono	lay through Fri hours of 3 PM	day during the months of June to 6 PM:	🖸 Yes 🔲 N	0			
				es that exceed ci	urrent building s	tandards		
ational improver	nent projects, pr			nprovements an	nd/or schedule ch	nanges for		
Fixture w T8 3 lai	mp fixtures at 72			wattts per fixture	e.			
		Energy	Savings Information:					
Equipment	Kwh l	Usage	Yearly hours of operation	Deman	nd (kW)			
Old	5,6	78						
Standard								
New	C	1						
d kWh this project:	5 678		kW demand reduction attributable to this					
tins project.	3,070	KVII	project.		V	kW		
d kWh								
ncentive :	5,678	kWh						
, identify and ex	plain all deviatio	ns from any pro	ogram measurement and verification.	ation guidelines	that may be pub	olished by the		
expenditures for	r this project. (M	ust attach all d	escribed documents with submis be confidential	sion of applicat	ion). <i>Label all pa</i>	iges deemed to		
	ect produce ener through ew Facility, Pleas ational improver Fixture w T8 3 land Equipment  Old  Standard  New d kWh this project: d kWh ncentive: scribe all method, identify and exting the mechanic achment C.	ect produce energy savings Mond through August from the ew Facility, Please attach an itemi ational improvement projects, pr Fixture w T8 3 lamp fixtures at 72 y  Equipment Kwh U  Old 5,6  Standard  New 0 d kWh this project: 5,678 d kWh ncentive: 5,678 escribe all methodologies, protocol , identify and explain all deviation from the mechanical schedule and achment C.	rect produce energy savings Monday through Frithrough August from the hours of 3 PM  wew Facility, Please attach an itemized summary shational improvement projects, provide a detailed achievement achievement achievement with a 2 last summary shational improvement projects, provide a detailed achievement with a 2 last summary shational improvement projects, provide a detailed achievement with a 2 last summary shational improvement with a 2 last summary shational improvement with a 2 last summary shational shational improvement with a 2 last summary shational improvement with a 2 last summary shational shationa	perational period of the equipment (i.e. Months, Days, Hours):  ect produce energy savings Monday through Friday during the months of June through August from the hours of 3 PM to 6 PM:  ew Facility, Please attach an itemized summary sheet that lists all installed measurational improvement projects, provide a detailed description of all operational in achievement of conservation efforts:  Fixture w T8 3 lamp fixtures at 72 watts with a 2 lamp high effeciency ballast T 8 34  Energy Savings Information:  Equipment Kwh Usage Yearly hours of operation  Old 5,678  Standard  New 0  d kWh this project: 5,678 kWh meentive: 6,678 kWh meentive: 6,678 kWh meentive: 6,678 kWh meentive: 6,678 kWh meentive: 6,6	ect produce energy savings Monday through Friday during the months of June through August from the hours of 3 PM to 6 PM:  ew Facility, Please attach an itemized summary sheet that lists all installed measures that exceed crational improvement projects, provide a detailed description of all operational improvements an achievement of conservation efforts:  Fixture w T8 3 lamp fixtures at 72 watts with a 2 lamp high effeciency ballast T 8 34 watts per fixture.  Energy Savings Information:  Equipment Kwh Usage Yearly hours of operation Demar Old 5.678  Standard  New 0 d kWh this project: 5,678 kWh project:  d kWh neentive: 5,678 kWh scribe all methodologies, protocols, and practices used or proposed to be used in measuring and, identify and explain all deviations from any program measurement and verification guidelines Commission.  from the mechanical schedule and input to the motors and drives calculator to determine the cash rebeachment C.  Dee all documents that provide proof of purchase and verification that project was completed and expenditures for this project. (Must attach all described documents with submission of application be confidential	cert produce energy savings Monday through Friday during the months of June through August from the hours of 3 PM to 6 PM:  E Yes No  ew Facility, Please attach an itemized summary sheet that lists all installed measures that exceed current building stational improvement projects, provide a detailed description of all operational improvements and/or schedule chachievement of conservation efforts:  Fixture w T8 3 lamp fixtures at 72 watts with a 2 lamp high effeciency ballast T 8 34 wattts per fixture.  Energy Savings Information:  Equipment Kwh Usage Yearly hours of operation Demand (kW)  Old 5.678  Standard  New 0 dd kWh this project: 5,678 kWh project: 0  d kWh neentive: 5,678 kWh neentive: 5,67		



	PROJECT INFOR	RMATION SHE	ET	
	Crestline Exempte	ed Village Schools		
Project Name: Variable Fro	equency Drives			
Project In-Service Date (MM/DD/YYYY):	Pr		ignment Number associated Customer Usage Summary	
If more than one date, Please use most curren	et –	3		
Please Provide a narrative description of	your program including, bu equip		ake, model, and year of an	y installed and replaced
Variable frequency drives were installed on m				
Total Project Cost: \$52	,410			
	Type of	Project:		
(Check One That Applies)  Early replacement of fully functioning equipment with new equipment  Install replacement	ation of new equipment to e failed equipment	Installation construction	of new equipment for new n or facility expansion	Behavioral modification or operational improvement
Please describe the less efficient	cient new equipment that yo	u rejected in favor	of the more efficient new e	equipment.
no motor controls				
	Project Cla	ssification:		
(Check all that apply)  ☐ Lighting	C Air Compresso		☐ Refrigeration ☐ Other/Custom	
If Other or Custom Please Explain:				
	PROJECT INFOR	RMATION SHE	ET	
	Equipment 1	Information:		
	N	ew	Old I	Equipment
Equipment Specifications (Model No., Size, etc.):	see motors and	drives calculator		
Number of Units:		drives calculator		
Efficiency Rating (R-Value, SEER/EEF Rating, Motor Efficiency, etc.)	see motors and	drives calculator		
What was the estimated remaining useful service life:		drives calculator		

			Operational 1	Information of Equipment			
Describe the op	perational period	l of the equipmer	nt (i.e. Months,	Days, Hours):			
Does this proj		rgy savings Mono August from the		day during the months of June to 6 PM:	🖺 Yes 🔼 N	No	
	ew Facility, Plea	se attach an item	ized summary sl	heet that lists all installed measur			
For oper	ational improvei	ment projects, pr		l description of all operational in ent of conservation efforts:	nprovements an	nd/or schedule cl	nanges for
			acmeveme	ent of conservation errorts.			
			Energy	Savings Information:			
	Equipment	Kwh l	Usage	Yearly hours of operation	Demar	nd (kW)	
	Old	189,	272				
	Standard						
	New	C	)				
Annual reduce attributable to		189,272	kWh	kW demand reduction attribut project:	able to this	0	kW
Annual reduce		189,272	kWh				
Please de: Additionally Data was gather attachment C.	scribe all method, identify and ex	dologies, protocol plain all deviations and input to the	ls, and practices ns from any pro motors and drive	s used or proposed to be used in ogram measurement and verific Commission.  's calculator to determine the cash	ation guidelines rebate amount.	that may be pulkWh savings wer	blished by the
accounting of Proof of purchase	expenditures for	r this project. (M Attachment D (O	lust attach all d	and verification that project wa escribed documents with submis- be confidential AC.PoP.AttachmentD). The total	ssion of applicat	ion). <i>Label all po</i>	ages deemed to

# **Crestline PK-12**

Attachment C

Motor Savings P-2

Tag	Quantity	<b>Hours Of Operation</b>	Loading	LF
P-1	1	5520	VFD	0.8
P-2	1	5520	VFD	0.8

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	<b>Building Energy Model</b>	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