

Inventory of Underground Primary by Conductor Configuration

<u>Phase</u>	<u>Configuration Details Underground Primary</u>		<u>% of 1 Phase</u>	<u>Cumulative % of 1</u>	<u>% of All UG</u>	<u>Cumulative % of All</u>	
		<u>Footage</u>	<u>Footage</u>	<u>Phase Footage</u>	<u>Primary</u>	<u>UG Primary</u>	
1 Phase	1/0 AL 1ph	16,001,972	51.54%	51.54%	28.98%	28.98%	
	2 AL 1ph	14,328,983	46.16%	97.70%	25.95%	54.93%	
	1 AL 1ph	263,202	0.85%	98.55%	0.48%	55.40%	
	1/0 Unknown 1ph	236,582	0.76%	99.31%	0.43%	55.83%	
	Unknown AL 1ph	78,811	0.25%	99.56%	0.14%	55.97%	
	Unknown Unknown 1ph	47,326	0.15%	99.72%	0.09%	56.06%	
	2 Unknown 1ph	34,983	0.11%	99.83%	0.06%	56.12%	
	1/0 CU 1ph	17,418	0.06%	99.88%	0.03%	56.15%	
	2/0 AL 1ph	9,262	0.03%	99.91%	0.02%	56.17%	
	2 CU 1ph	6,086	0.02%	99.93%	0.01%	56.18%	
	Unknown CU 1ph	4,504	0.01%	99.95%	0.01%	56.19%	
	4/0 AL 1ph	4,020	0.01%	99.96%	0.01%	56.20%	
	1/0 N/A 1ph	2,616	0.01%	99.97%	0.00%	56.20%	
		<b>Footage of 15 Remaining 1 Phase Underground Primary Conductor Configurations</b>	9,451	0.03%	100.00%	0.02%	56.22%
		<b>Total 1 Phase</b>	<b>31,045,217</b>	<b>100.00%</b>		<b>56.22%</b>	
3 Phase	1/0 AL 3ph	13,798,626	57.07%	57.07%	24.99%	24.99%	
	750 AL 3ph	4,716,848	19.51%	76.58%	8.54%	33.53%	
	2 AL 3ph	1,079,318	4.46%	81.05%	1.95%	35.48%	
	600 CU 3ph	881,596	3.65%	84.69%	1.60%	37.08%	
	500 CU 3ph	745,916	3.09%	87.78%	1.35%	38.43%	
	1000 AL 3ph	541,370	2.24%	90.02%	0.98%	39.41%	
	500 AL 3ph	465,879	1.93%	91.94%	0.84%	40.25%	
	750 CU 3ph	416,228	1.72%	93.67%	0.75%	41.01%	
	1/0 Unknown 3ph	319,734	1.32%	94.99%	0.58%	41.59%	
	1/0 CU 3ph	285,399	1.18%	96.17%	0.52%	42.10%	
	Unknown Unknown 3ph	174,882	0.72%	96.89%	0.32%	42.42%	
	4/0 CU 3ph	150,149	0.62%	97.51%	0.27%	42.69%	
	500 Unknown 3ph	134,458	0.56%	98.07%	0.24%	42.94%	
	1 AL 3ph	133,781	0.55%	98.62%	0.24%	43.18%	
	350 CU 3ph	122,355	0.51%	99.13%	0.22%	43.40%	
	400 CU 3ph	61,020	0.25%	99.38%	0.11%	43.51%	
	750 Unknown 3ph	27,563	0.11%	99.50%	0.05%	43.56%	
	Unknown AL 3ph	22,964	0.09%	99.59%	0.04%	43.60%	
	2 Unknown 3ph	22,566	0.09%	99.68%	0.04%	43.64%	
	4/0 Unknown 3ph	20,395	0.08%	99.77%	0.04%	43.68%	
	600 Unknown 3ph	13,643	0.06%	99.82%	0.02%	43.70%	
	350 AL 3ph	6,241	0.03%	99.85%	0.01%	43.72%	
		<b>Footage of 18 Remaining 3 Phase Underground Primary Conductor Configurations</b>	36,272	0.15%	100.00%	0.07%	43.78%
		<b>Total 3 Phase</b>	<b>24,177,202</b>	<b>100.00%</b>		<b>43.78%</b>	
		<b>Total 1 and 3 Phase</b>	<b>55,222,420</b>			<b>100.00%</b>	

## Inventory of Underground Secondary by Conductor Configuration

<u>Configurateion Details</u> <u>Underground Secondary</u>	<u>Total Footage</u>	<u>% of UG Secondary</u>	<u>Cumulative % UG</u> <u>Secondary</u>
6 AL Duplex	10,661,412	37.98%	37.98%
4/0 AL Triplex	8,422,109	30.01%	67.99%
2/0 AL Triplex	2,703,807	9.63%	77.62%
1/0 AL Triplex	1,572,271	5.60%	83.22%
6 CU Open Wire	1,230,243	4.38%	87.61%
350 AL Triplex	574,237	2.05%	89.65%
2 AL Triplex	300,574	1.07%	90.72%
6 CU Triplex	284,059	1.01%	91.73%
8 CU Open Wire	272,950	0.97%	92.71%
4 CU Open Wire	225,485	0.80%	93.51%
6 AL Triplex	224,454	0.80%	94.31%
8 CU Triplex	179,091	0.64%	94.95%
4 CU Triplex	137,219	0.49%	95.44%
Unknown Unknown Unknown	134,065	0.48%	95.91%
4 CU Duplex	77,150	0.27%	96.19%
4 CU N/A	64,053	0.23%	96.42%
2 Unknown Triplex	59,504	0.21%	96.63%
4 AL Triplex	54,038	0.19%	96.82%
2 Unknown Open Wire	53,905	0.19%	97.01%
6 CU N/A	53,212	0.19%	97.20%
2 AL Unknown	49,334	0.18%	97.38%
6 AL Unknown	46,776	0.17%	97.55%
4/0 AL Unknown	42,607	0.15%	97.70%
4/0 AL Quadraplex	39,730	0.14%	97.84%
2 Unknown Duplex	33,624	0.12%	97.96%
2 AL Duplex	30,790	0.11%	98.07%
8 AL Triplex	28,714	0.10%	98.17%
8 CU Duplex	27,997	0.10%	98.27%
6 CU Quadraplex	27,589	0.10%	98.37%
6 CU Unknown	20,379	0.07%	98.44%
6 CU Duplex	19,604	0.07%	98.51%
0 0 Unknown	19,429	0.07%	98.58%
0 0 Triplex	18,943	0.07%	98.65%
4/0 AL Duplex	18,612	0.07%	98.71%
Unknown Unknown Triplex	18,102	0.06%	98.78%
500 CU Quadraplex	17,845	0.06%	98.84%
0 0 Duplex	17,325	0.06%	98.90%
8 CU N/A	15,044	0.05%	98.96%
Unknown Unknown Duplex	13,483	0.05%	99.01%
6 AL Open Wire	12,567	0.04%	99.05%
<b>Footage of 109 Remaining</b> <b>Underground Secondary</b> <b>Conductor Configurations</b>	266,465	0.95%	100.00%
	28,068,796	100.00%	

Inventory of Underground Transformers by Transformer Configuration

<u>Configuration Details 1 Phase Underground Transformers</u>	<u>Number of Transformers</u>	<u>1 Phase %</u>	<u>Cumulative Percent of 1 Phase Transformers</u>	<u>% of All Underground Transformers</u>	<u>Cumulative Percent of All Transformers</u>
1 Phase Wye 50 kVA	27,634	45.47%	45.47%	32.31%	32.31%
1 Phase Wye 25 kVA	18,283	30.08%	75.56%	21.38%	53.69%
1 Phase Wye 37.5 kVA	9,017	14.84%	90.39%	10.54%	64.23%
1 Phase Wye 15 kVA	2,399	3.95%	94.34%	2.81%	67.04%
1 Phase Wye 100 kVA	1,317	2.17%	96.51%	1.54%	68.58%
1 Phase Wye 75 kVA	1,264	2.08%	98.59%	1.48%	70.06%
1 Phase Wye 10 kVA	304	0.50%	99.09%	0.36%	70.41%
1 Phase Wye 167 kVA	206	0.34%	99.43%	0.24%	70.65%
1 Phase Wye 50.0 kVA	163	0.27%	99.69%	0.19%	70.84%
1 Phase Wye 0 kVA	102	0.17%	99.86%	0.12%	70.96%
1 Phase Wye 25.0 kVA	33	0.05%	99.92%	0.04%	71.00%
1 Phase Wye 250 kVA	15	0.02%	99.94%	0.02%	71.02%
1 Phase Wye Unknown kVA	6	0.01%	99.95%	0.01%	71.03%
1 Phase Wye 112 kVA	4	0.01%	99.96%	0.00%	71.03%
1 Phase Wye 15.0 kVA	3	0.00%	99.96%	0.00%	71.03%
1 Phase Wye 150 kVA	3	0.00%	99.97%	0.00%	71.04%
1 Phase Wye 35 kVA	3	0.00%	99.97%	0.00%	71.04%
1 Phase Wye 20 kVA	2	0.00%	99.98%	0.00%	71.04%
1 Phase Wye 7 kVA	2	0.00%	99.98%	0.00%	71.05%
1 Phase Wye 75.0 kVA	2	0.00%	99.98%	0.00%	71.05%
1 Phase Wye 87.5 kVA	2	0.00%	99.99%	0.00%	71.05%
1 Phase Delta 50 kVA	1	0.00%	99.99%	0.00%	71.05%
1 Phase Wye 10.0 kVA	1	0.00%	99.99%	0.00%	71.05%
1 Phase Wye 100.0 kVA	1	0.00%	99.99%	0.00%	71.05%
1 Phase Wye 167.0 kVA	1	0.00%	99.99%	0.00%	71.06%
1 Phase Wye 225 kVA	1	0.00%	99.99%	0.00%	71.06%
1 Phase Wye 3 kVA	1	0.00%	99.99%	0.00%	71.06%
1 Phase Wye 333 kVA	1	0.00%	100.00%	0.00%	71.06%
1 Phase Wye 45 kVA	1	0.00%	100.00%	0.00%	71.06%
1 Phase Wye 5 kVA	1	0.00%	100.00%	0.00%	71.06%
1 Phase Wye 750 kVA	1	0.00%	100.00%	0.00%	71.06%
<b>Number of Transformers for 18 Remaining Single Phase Transformer Configurations</b>	52	0	0.08%	0.06%	
<b>Total 1 Phase Transformers</b>	60,774	1	100.00%	71.06%	

<u>Configuration Details 2 Phase Underground Transformers</u>	<u>Number of Transformers</u>	<u>2 Phase %</u>	<u>Cumulative Percent of 2 Phase Transformers</u>	<u>% of All UG Transformers</u>	<u>Cumulative Percent of All Transformers</u>
2 Phase Wye/Delta 75 kVA	280	31.22%	31.22%	0.33%	71.39%
2 Phase Wye/Delta 125 kVA	174	19.40%	50.61%	0.20%	71.59%
2 Phase Wye/Delta 204.5 kVA	110	12.26%	62.88%	0.13%	71.72%
2 Phase Wye/Delta 300 kVA	61	6.80%	69.68%	0.07%	71.79%
2 Phase Wye/Delta 50 kVA	59	6.58%	76.25%	0.07%	71.86%
2 Phase Wye/Delta 100 kVA	38	4.24%	80.49%	0.04%	71.90%
2 Phase Wye/Delta 62.5 kVA	30	3.34%	83.84%	0.04%	71.94%
2 Phase Wye/Delta 30 kVA	21	2.34%	86.18%	0.02%	71.96%
2 Phase Wye/Delta 150 kVA	20	2.23%	88.41%	0.02%	71.99%
2 Phase Wye/Delta 87.5 kVA	13	1.45%	89.86%	0.02%	72.00%
<b>Number of Transformers for 27 Remaining 2 Phase Transformer Configurations</b>	91	10.14%	100.00%	0.11%	72.11%
<b>Total 2 Phase Transformers</b>	897	100.00%	100.00%	1.05%	

<u>Configuration Details 3 Phase Underground Transformers</u>	<u>Number of Transformers</u>	<u>3 Phase %</u>	<u>Cumulative Percent of 3 Phase Transformers</u>	<u>% of All UG Transformers</u>	<u>Cumulative Percent of All Transformers</u>
3 Phase Wye/Wye 150 kVA	3,764	15.78%	15.78%	4.40%	76.51%
3 Phase Wye/Wye 300 kVA	3,671	15.39%	31.17%	4.29%	80.80%

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3 Phase Wye/Wye 75 kVA	3,535	14.82%	45.99%	4.13%	84.94%
3 Phase Wye/Wye 500 kVA	3,161	13.25%	59.25%	3.70%	88.63%
3 Phase Wye/Wye 112 kVA	2,030	8.51%	67.76%	2.37%	91.01%
3 Phase Wye/Wye 225 kVA	1,829	7.67%	75.43%	2.14%	93.14%
3 Phase Wye/Wye 750 kVA	1,812	7.60%	83.02%	2.12%	95.26%
3 Phase Wye/Wye 1000 kVA	1,361	5.71%	88.73%	1.59%	96.85%
3 Phase Wye/Wye 1500 kVA	1,145	4.80%	93.53%	1.34%	98.19%
3 Phase Wye/Wye 45 kVA	524	2.20%	95.73%	0.61%	98.81%
3 Phase Wye/Wye 2000 kVA	488	2.05%	97.77%	0.57%	99.38%
3 Phase Wye/Wye 2500 kVA	122	0.51%	98.29%	0.14%	99.52%
3 Phase Wye/Delta 300 kVA	26	0.11%	98.39%	0.03%	99.55%
3 Phase Wye/Delta 500 kVA	23	0.10%	98.49%	0.03%	99.58%
3 Phase Wye/Delta 150 kVA	18	0.08%	98.57%	0.02%	99.60%
3 Phase Wye/Wye 0 kVA	17	0.07%	98.64%	0.02%	99.62%
3 Phase Wye/Delta 225 kVA	16	0.07%	98.70%	0.02%	99.64%
3 Phase Wye/Wye 450 kVA	15	0.06%	98.77%	0.02%	99.65%
3 Phase Delta/Wye 500 kVA	14	0.06%	98.83%	0.02%	99.67%
3 Phase Open Wye/Open Delta 75 kVA	14	0.06%	98.88%	0.02%	99.69%
3 Phase Wye/Delta 75 kVA	14	0.06%	98.94%	0.02%	99.70%
3 Phase Wye/Wye 75.0 kVA	14	0.06%	99.00%	0.02%	99.72%
3 Phase Delta/Wye 300 kVA	12	0.05%	99.05%	0.01%	99.73%
3 Phase Wye/Wye 150.0 kVA	11	0.05%	99.10%	0.01%	99.75%
3 Phase Wye/Wye 750.0 kVA	11	0.05%	99.14%	0.01%	99.76%
3 Phase Wye/Wye 300.0 kVA	10	0.04%	99.19%	0.01%	99.77%
3 Phase Delta/Wye 1000 kVA	9	0.04%	99.22%	0.01%	99.78%
3 Phase Wye/Wye 50 kVA	9	0.04%	99.26%	0.01%	99.79%
3 Phase Wye/Wye 500.0 kVA	9	0.04%	99.30%	0.01%	99.80%
3 Phase Wye/Wye Unknown kVA	9	0.04%	99.34%	0.01%	99.81%
3 Phase Wye/Delta 112 kVA	8	0.03%	99.37%	0.01%	99.82%
3 Phase Delta/Wye 150 kVA	7	0.03%	99.40%	0.01%	99.83%
3 Phase Open Wye/Open Delta 125 kVA	7	0.03%	99.43%	0.01%	99.84%
3 Phase Wye/Wye 30 kVA	7	0.03%	99.46%	0.01%	99.85%
3 Phase Delta/Delta 300 kVA	6	0.03%	99.48%	0.01%	99.85%
3 Phase Delta/Wye 112 kVA	6	0.03%	99.51%	0.01%	99.86%
3 Phase Wye/Wye 100 kVA	6	0.03%	99.53%	0.01%	99.87%
3 Phase Wye/Wye 112.0 kVA	5	0.02%	99.56%	0.01%	99.87%
3 Phase Wye/Wye 15 kVA	5	0.02%	99.58%	0.01%	99.88%
3 Phase Wye/Wye 225.0 kVA	5	0.02%	99.60%	0.01%	99.89%
3 Phase Delta/Delta 150 kVA	4	0.02%	99.61%	0.00%	99.89%
3 Phase Delta/Wye 1500 kVA	4	0.02%	99.63%	0.00%	99.89%
3 Phase Delta/Wye 750 kVA	4	0.02%	99.65%	0.00%	99.90%
3 Phase Wye/Wye 333 kVA	4	0.02%	99.66%	0.00%	99.90%
3 Phase Delta/Delta 500 kVA	3	0.01%	99.68%	0.00%	99.91%
3 Phase Delta/Wye 225 kVA	3	0.01%	99.69%	0.00%	99.91%
3 Phase Wye/Delta 750 kVA	3	0.01%	99.70%	0.00%	99.91%
3 Phase Wye/Wye 1000.0 kVA	3	0.01%	99.71%	0.00%	99.92%
3 Phase Wye/Wye 25 kVA	3	0.01%	99.73%	0.00%	99.92%
3 Phase Wye/Wye 5000 kVA	3	0.01%	99.74%	0.00%	99.93%
3 Phase Delta/Delta 225 kVA	2	0.01%	99.75%	0.00%	99.93%
3 Phase Delta/Delta 750 kVA	2	0.01%	99.76%	0.00%	99.93%
3 Phase Delta/Wye 2000 kVA	2	0.01%	99.77%	0.00%	99.93%
3 Phase Open Wye/Open Delta 100 kVA	2	0.01%	99.77%	0.00%	99.93%
3 Phase Open Wye/Open Delta 150 kVA	2	0.01%	99.78%	0.00%	99.94%
3 Phase Open Wye/Open Delta 204.5 kVA	2	0.01%	99.79%	0.00%	99.94%

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3 Phase Open Wye/Open Delta 50 kVA	2	0.01%	99.80%	0.00%	99.94%
3 Phase Open Wye/Open Delta 87.5 kVA	2	0.01%	99.81%	0.00%	99.94%
3 Phase Wye/Delta 1000 kVA	2	0.01%	99.82%	0.00%	99.95%
3 Phase Wye/Delta 2500 kVA	2	0.01%	99.82%	0.00%	99.95%
3 Phase Wye/Wye 115 kVA	2	0.01%	99.83%	0.00%	99.95%
3 Phase Wye/Wye 125 kVA	2	0.01%	99.84%	0.00%	99.95%
3 Phase Wye/Wye 1500.0 kVA	2	0.01%	99.85%	0.00%	99.96%
3 Phase Wye/Wye 167 kVA	2	0.01%	99.86%	0.00%	99.96%
3 Phase Delta/Delta 1000 kVA	1	0.00%	99.86%	0.00%	99.96%
3 Phase Delta/Delta 112 kVA	1	0.00%	99.87%	0.00%	99.96%
3 Phase Delta/Delta 15 kVA	1	0.00%	99.87%	0.00%	99.96%
3 Phase Delta/Delta 667 kVA	1	0.00%	99.87%	0.00%	99.96%
3 Phase Delta/Delta 75 kVA	1	0.00%	99.88%	0.00%	99.96%
3 Phase Delta/Wye 242 kVA	1	0.00%	99.88%	0.00%	99.96%
3 Phase Delta/Wye 450 kVA	1	0.00%	99.89%	0.00%	99.97%
3 Phase Delta/Wye 75 kVA	1	0.00%	99.89%	0.00%	99.97%
3 Phase Open Delta/Open Delta 75 kVA	1	0.00%	99.90%	0.00%	99.97%
3 Phase Open Wye/Open Delta 115 kVA	1	0.00%	99.90%	0.00%	99.97%
3 Phase Open Wye/Open Delta 200 kVA	1	0.00%	99.90%	0.00%	99.97%
3 Phase Open Wye/Open Delta 30 kVA	1	0.00%	99.91%	0.00%	99.97%
3 Phase Open Wye/Open Delta 40 kVA	1	0.00%	99.91%	0.00%	99.97%
3 Phase Open Wye/Open Delta 52.5 kVA	1	0.00%	99.92%	0.00%	99.97%
3 Phase Open Wye/Open Delta 62.5 kVA	1	0.00%	99.92%	0.00%	99.98%
3 Phase Wye/Delta 100 kVA	1	0.00%	99.92%	0.00%	99.98%
3 Phase Wye/Delta 1500 kVA	1	0.00%	99.93%	0.00%	
3 Phase Wye/Delta 30 kVA	1	0.00%	99.93%	0.00%	
3 Phase Wye/Delta 317 kVA	1	0.00%	99.94%	0.00%	
3 Phase Wye/Delta 367 kVA	1	0.00%	99.94%	0.00%	
3 Phase Wye/Delta 45 kVA	1	0.00%	99.95%	0.00%	
3 Phase Wye/Delta 50 kVA	1	0.00%	99.95%	0.00%	
3 Phase Wye/Delta 584 kVA	1	0.00%	99.95%	0.00%	
3 Phase Wye/Delta 833 kVA	1	0.00%	99.96%	0.00%	
3 Phase Wye/Wye 0.0 kVA	1	0.00%	99.96%	0.00%	
3 Phase Wye/Wye 105 kVA	1	0.00%	99.97%	0.00%	
3 Phase Wye/Wye 1250 kVA	1	0.00%	99.97%	0.00%	
3 Phase Wye/Wye 1667 kVA	1	0.00%	99.97%	0.00%	
3 Phase Wye/Wye 250 kVA	1	0.00%	99.98%	0.00%	
3 Phase Wye/Wye 35 kVA	1	0.00%	99.98%	0.00%	
3 Phase Wye/Wye 37.5 kVA	1	0.00%	99.99%	0.00%	
3 Phase Wye/Wye 45.0 kVA	1	0.00%	99.99%	0.00%	
3 Phase Wye/Wye 833 kVA	1	0.00%	100.00%	0.00%	
3 Phase Wye/Wye 900 kVA	1	0.00%	100.00%	0.00%	
<b>Number of Transformers for 86 Remaining 3 Phase Transformer Configurations</b>	<b>409</b>	<b>1.71%</b>	<b>100.00%</b>	<b>0.48%</b>	<b>100.18%</b>
<b>Total 3 Phase Transformers</b>	<b>23,851</b>	<b>100.00%</b>	<b>100.00%</b>	<b>27.89%</b>	
<b>Total All Underground Transformers</b>	<b>85,522</b>	<b>3</b>		<b>100.00%</b>	

## Inventory of Overhead Primary by Conductor Configuration

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Phase	Configuration Details Overhead Primary	Footage	% of 1 Phase		Cumulative %		
			Footage	Footage	Footage	% of All OH Primary	
						<u>Cumulative % of All OH Primary</u>	
1 Phase	4 ACSR 1ph	10,779,829	26.53%	26.53%	15.27%	15.27%	
	2 ACSR 1ph	9,980,490	24.56%	51.10%	14.13%	29.40%	
	6A CUWD 1ph	7,738,000	19.05%	70.14%	10.96%	40.36%	
	6 CU 1ph	7,002,819	17.24%	87.38%	9.92%	50.27%	
	3/10 CU 1ph	1,602,784	3.94%	91.32%	2.27%	52.54%	
	Unknown Unknown 1ph	795,265	1.96%	93.28%	1.13%	53.67%	
	4 CU 1ph	771,130	1.90%	95.18%	1.09%	54.76%	
	2/0 ACSR 1ph	238,640	0.59%	95.77%	0.34%	55.10%	
	3/8 CU 1ph	215,729	0.53%	96.30%	0.31%	55.41%	
	6 CUWD 1ph	177,038	0.44%	96.73%	0.25%	55.66%	
	8A CUWD 1ph	171,485	0.42%	97.15%	0.24%	55.90%	
	2 CU 1ph	145,690	0.36%	97.51%	0.21%	56.11%	
	1/0 ACSR 1ph	137,690	0.34%	97.85%	0.19%	56.30%	
	Unknown CU 1ph	133,267	0.33%	98.18%	0.19%	56.49%	
	130 Steel 1ph	81,915	0.20%	98.38%	0.12%	56.61%	
	4A CUWD 1ph	74,567	0.18%	98.56%	0.11%	56.71%	
	1/0 CU 1ph	67,793	0.17%	98.73%	0.10%	56.81%	
	336 ACSR 1ph	58,453	0.14%	98.88%	0.08%	56.89%	
	336 AL 1ph	52,357	0.13%	99.00%	0.07%	56.96%	
	2/0 CU 1ph	40,322	0.10%	99.10%	0.06%	57.02%	
		<b>Footage of 62 Remaining Single Phase Overhead Primary Conductor Configurations</b>	364,257	0.90%	100.00%	0.52%	57.54%
	<b>Total 1 Phase</b>	40,629,520	100.00%		57.54%		
Phase	Config Details OH Primary	Footage	% of 3 Phase		Cumulative %		
			Footage	Footage	Footage	% of All OH Primary	
						<u>Cumulative % of All OH Primary</u>	
3 Phase	336 AL 3ph	6,544,945	21.83%	21.83%	9.27%	66.81%	
	2 ACSR 3ph	5,900,093	19.68%	41.50%	8.36%	75.16%	
	336 ACSR 3ph	4,863,151	16.22%	57.72%	6.89%	82.05%	
	2/0 ACSR 3ph	2,366,505	7.89%	65.61%	3.35%	85.40%	
	4 ACSR 3ph	1,862,263	6.21%	71.82%	2.64%	88.04%	
	6 CU 3ph	1,325,050	4.42%	76.24%	1.88%	89.91%	
	4/0 CU 3ph	817,258	2.73%	78.97%	1.16%	91.07%	
	1/0 ACSR 3ph	803,837	2.68%	81.65%	1.14%	92.21%	
	6A CUWD 3ph	774,047	2.58%	84.23%	1.10%	93.30%	
	Unknown Unknown 3ph	501,274	1.67%	85.90%	0.71%	94.01%	
	4/0 ACSR 3ph	471,435	1.57%	87.48%	0.67%	94.68%	
	556 AL 3ph	444,492	1.48%	88.96%	0.63%	95.31%	
	4 CU 3ph	403,363	1.35%	90.30%	0.57%	95.88%	
	556 ACSR 3ph	343,150	1.14%	91.45%	0.49%	96.37%	
	3/8 CU 3ph	326,532	1.09%	92.54%	0.46%	96.83%	
	3/10 CU 3ph	293,867	0.98%	93.52%	0.42%	97.25%	
	336 AAC 3ph	284,217	0.95%	94.46%	0.40%	97.65%	
	3/6 CU 3ph	234,864	0.78%	95.25%	0.33%	97.98%	
	1/0 CU 3ph	228,648	0.76%	96.01%	0.32%	98.31%	
	556 AAC 3ph	200,338	0.67%	96.68%	0.28%	98.59%	
	2/0 CU 3ph	154,841	0.52%	97.19%	0.22%	98.81%	
	2 CU 3ph	153,258	0.51%	97.71%	0.22%	99.03%	
	336 CU 3ph	122,761	0.41%	98.11%	0.17%	99.20%	
	2/0 AL 3ph	73,048	0.24%	98.36%	0.10%	99.30%	
		<b>Footage of 69 Remaining 3 Phase Overhead Primary Conductor Configurations</b>	492,188	1.64%	100.00%	0.70%	100.00%
		<b>Total 3 Phase</b>	29,985,424	100.00%	42.46%	42.46%	
		<b>Total All OH Primary</b>	70,614,944				

## Inventory of Overhead Secondary by Conductor Configuration

<u>Configuration Details Overhead Secondary</u>	<u>Total Footage</u>	<u>% of Total Overhead Secondary</u>	<u>Cumulative % Overhead Secondary</u>
2 ACSR Open Wire	20,659,710	15.10%	15.10%
1/0 ACSR Open Wire	18,464,472	13.50%	28.60%
4 CU Open Wire	15,421,282	11.27%	39.88%
2 CU Open Wire	15,133,733	11.06%	50.94%
6 CU Open Wire	10,042,139	7.34%	58.29%
4 ACSR Open Wire	9,593,567	7.01%	65.30%
1/0 AL Triplex	7,529,615	5.51%	70.81%
6A CUWD Open Wire	6,529,682	4.77%	75.58%
1/0 AL Triplex, Lashed	6,462,163	4.72%	80.30%
6 ACSR Duplex	4,816,255	3.52%	83.83%
2 AL Triplex	2,563,679	1.87%	85.70%
1/0 CU Open Wire	2,553,956	1.87%	87.57%
3/10 CU Open Wire	1,561,406	1.14%	88.71%
6 AL Duplex	1,363,325	1.00%	89.71%
1/0 AL Open Wire	1,266,940	0.93%	90.63%
3/8 CU Open Wire	985,355	0.72%	91.35%
Unknown CU Open Wire	873,047	0.64%	91.99%
2 ACSR N/A	826,590	0.60%	92.60%
2/0 ACSR Open Wire	794,643	0.58%	93.18%
2 AL Open Wire	770,419	0.56%	93.74%
6 AL Triplex	684,735	0.50%	94.24%
1/0 ACSR Quadraplex	513,263	0.38%	94.62%
2 ACSR Neutral	485,021	0.35%	94.97%
2/0 ACSR Neutral	469,747	0.34%	95.31%
2 ACSR Triplex	424,986	0.31%	95.62%
2 ACSR Triplex, Lashed	347,685	0.25%	95.88%
1/0 ACSR Triplex, Lashed	309,720	0.23%	96.10%
3/6 CU Open Wire	240,780	0.18%	96.28%
4 ACSR Triplex	213,504	0.16%	96.44%
4/0 ACSR Quadraplex	203,353	0.15%	96.59%
4/0 AL Triplex	196,947	0.14%	96.73%
4/0 CU Open Wire	189,871	0.14%	96.87%
2/0 CU Open Wire	186,312	0.14%	97.00%
4 AL Open Wire	175,335	0.13%	97.13%
8A CUWD Open Wire	165,719	0.12%	97.25%
4 Unknown Open Wire	160,896	0.12%	97.37%
4A CUWD Open Wire	155,350	0.11%	97.49%
4 ACSR Duplex	125,641	0.09%	97.58%
0 0 Open Wire	120,451	0.09%	97.67%
1/0 ACSR Triplex	119,327	0.09%	97.75%
<b>Footage of 361 Remaining Overhead Secondary Conductor Configurations</b>	3,074,068	2.25%	100.00%
<b>Total OH Secondary</b>	136,774,689	100.00%	

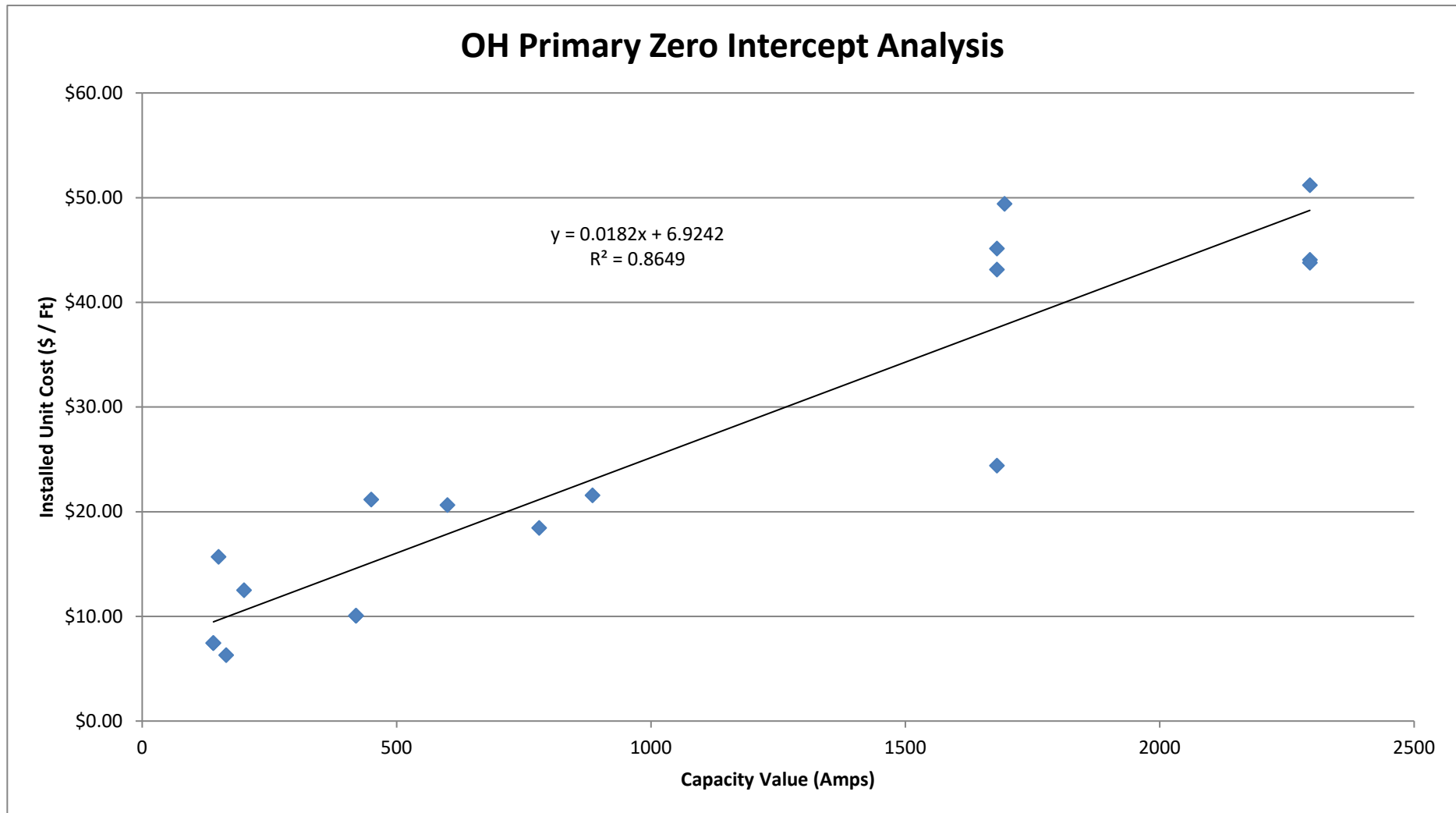
Inventory of Overhead Transformers by Transformer Configuration

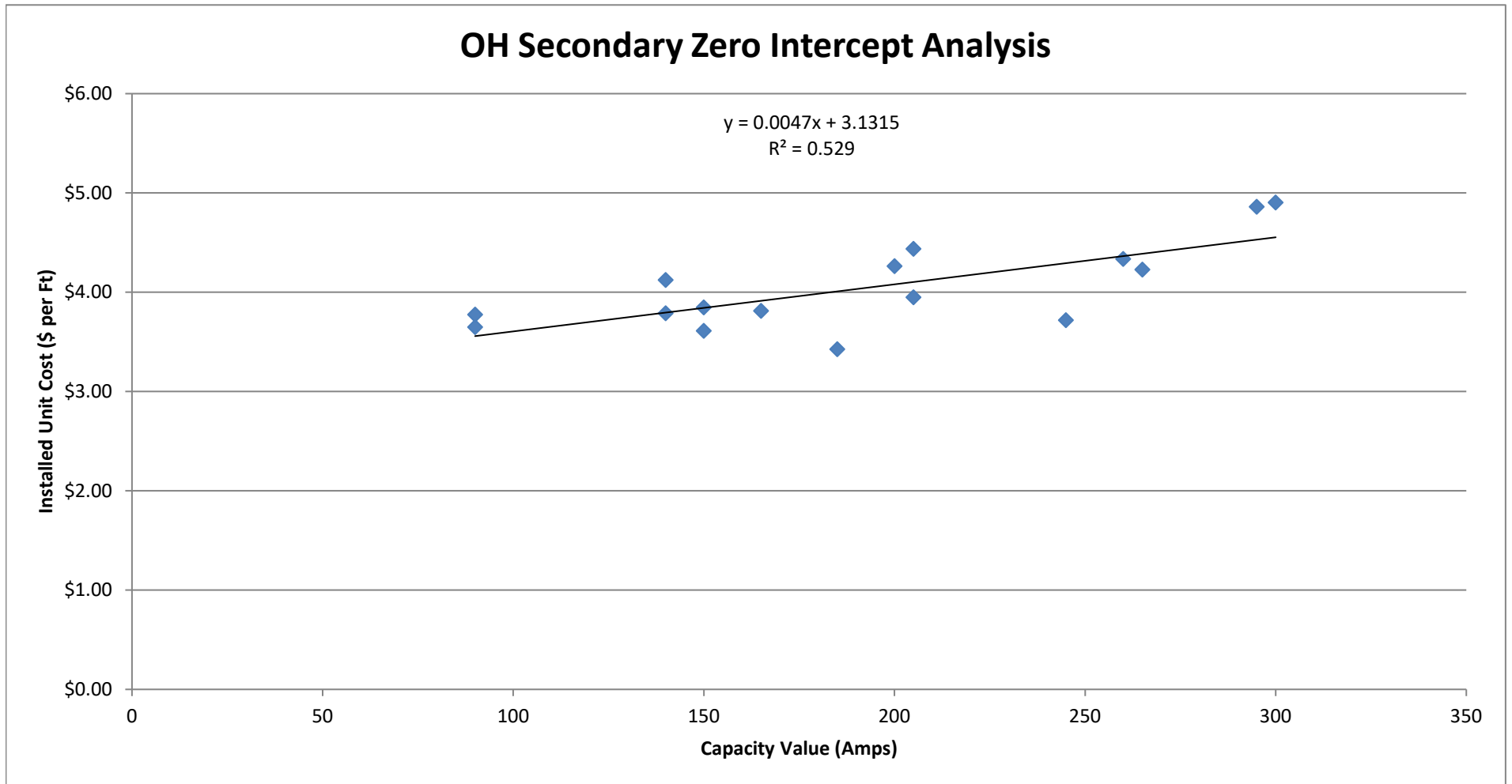
<u>Config Details 1 Phase Overhead Transformers</u>	<u>Number of Transformers</u>	<u>1 Phase %</u>	<u>1 Phase Cumulative %</u>	<u>% of All Overhead Transformers</u>	<u>Cumulative Percent of All OH Transformers</u>
1 Phase Wye 25 kVA	33,645	33.05%	33.05%	29.37%	29.37%
1 Phase Wye 10 kVA	18,868	18.53%	51.58%	16.47%	45.84%
1 Phase Wye 15 kVA	17,020	16.72%	68.30%	14.86%	60.70%
1 Phase Wye 37.5 kVA	16,272	15.98%	84.29%	14.20%	74.90%
1 Phase Wye 50 kVA	13,415	13.18%	97.46%	11.71%	86.61%
1 Phase Wye 75 kVA	806	0.79%	98.26%	0.70%	87.31%
1 Phase Wye 100 kVA	607	0.60%	98.85%	0.53%	87.84%
1 Phase Wye 5 kVA	412	0.40%	99.26%	0.36%	88.20%
1 Phase Wye 3 kVA	113	0.11%	99.37%	0.10%	88.30%
1 Phase Wye 0 kVA	108	0.11%	99.47%	0.09%	88.40%
1 Phase Wye 0.5 kVA	78	0.08%	99.55%	0.07%	88.46%
1 Phase Wye 25.0 kVA	66	0.06%	99.62%	0.06%	88.52%
<b>Number of Transformers for 30 Remaining 1 Phase Transformer Configurations</b>	391	0.38%	100.00%	0.34%	88.86%
<b>Total 1 Phase Transformers</b>	101,801	100.00%		88.86%	
<u>Config Details 2 Phase Overhead Transformers</u>	<u>Number of Transformers</u>	<u>2 Phase %</u>	<u>2 Phase Cumulative %</u>	<u>% of All Overhead Transformers</u>	<u>Cumulative Percent of All OH Transformers</u>
2 Phase Wye/Delta 40 kVA	5	16.13%	16.13%	0.00%	88.87%
2 Phase Wye/Delta 50 kVA	4	12.90%	29.03%	0.00%	88.87%
2 Phase Wye/Delta 75 kVA	4	12.90%	41.94%	0.00%	88.87%
2 Phase Wye/Delta 0 kVA	3	9.68%	51.61%	0.00%	88.88%
2 Phase Wye/Delta 30 kVA	3	9.68%	61.29%	0.00%	88.88%
2 Phase Wye/Delta 125 kVA	2	6.45%	67.74%	0.00%	88.88%
2 Phase Wye/Delta 25 kVA	2	6.45%	74.19%	0.00%	88.88%
2 Phase Wye/Delta 65 kVA	2	6.45%	80.65%	0.00%	88.89%
2 Phase Wye/Delta 100 kVA	1	3.23%	83.87%	0.00%	88.89%
2 Phase Wye/Delta 137.5 kVA	1	3.23%	87.10%	0.00%	88.89%
2 Phase Wye/Delta 150 kVA	1	3.23%	90.32%	0.00%	88.89%
2 Phase Wye/Delta 47.5 kVA	1	3.23%	93.55%	0.00%	88.89%
2 Phase Wye/Delta 62.5 kVA	1	3.23%	96.77%	0.00%	88.89%
2 Phase Wye/Delta 87.5 kVA	1	3.23%	100.00%	0.00%	88.89%
<b>Number of Transformers for 6 Remaining 2 Phase Transformer Configurations</b>	6	19.35%	100.00%	0.01%	88.89%
<b>Total 2 Phase Transformers</b>	31	100.00%		0.03%	
<u>Config Details 3 Phase OH Transformers</u>	<u>Number of Transformers</u>	<u>3 Phase %</u>	<u>3 Phase Cumulative %</u>	<u>% of All OH Transformers</u>	<u>Cumulative Percent of All OH Transformers</u>
3 Phase Wye/Wye 75 kVA	1,300	10.21%	10.21%	1.13%	90.03%
3 Phase Wye/Wye 150 kVA	1,034	8.12%	8.12%	0.90%	90.93%
3 Phase Wye/Wye 45 kVA	767	6.03%	6.03%	0.67%	91.60%
3 Phase Open Wye/Open Delta 75 kVA	733	5.76%	5.76%	0.64%	92.24%
3 Phase Wye/Wye 112 kVA	594	4.67%	4.67%	0.52%	92.76%
3 Phase Wye/Wye 300 kVA	506	3.98%	3.98%	0.44%	93.20%
3 Phase Open Wye/Open Delta 40 kVA	474	3.72%	3.72%	0.41%	93.61%
3 Phase Open Wye/Open Delta 35 kVA	405	3.18%	3.18%	0.35%	93.96%
3 Phase Open Wye/Open Delta 100 kVA	341	2.68%	2.68%	0.30%	94.26%
3 Phase Open Wye/Open Delta 62.5 kVA	333	2.62%	2.62%	0.29%	94.55%
3 Phase Open Wye/Open Delta 52.5 kVA	315	2.48%	2.48%	0.27%	94.83%
3 Phase Open Wye/Open Delta 65 kVA	314	2.47%	2.47%	0.27%	95.10%
3 Phase Wye/Wye 225 kVA	308	2.42%	2.42%	0.27%	95.37%
3 Phase Open Wye/Open Delta 20 kVA	307	2.41%	2.41%	0.27%	95.64%
3 Phase Open Wye/Open Delta 47.5 kVA	249	1.96%	1.96%	0.22%	95.86%
<b>Number of Transformers for 168 Remaining 3 Phase Transformer Configurations</b>	4,747	37.30%	39.26%	4.14%	100.00%
<b>Total 3 Phase Transformers</b>	12,727	100.00%		11.11%	
<b>Total OH Transformers</b>	114,559			100.00%	

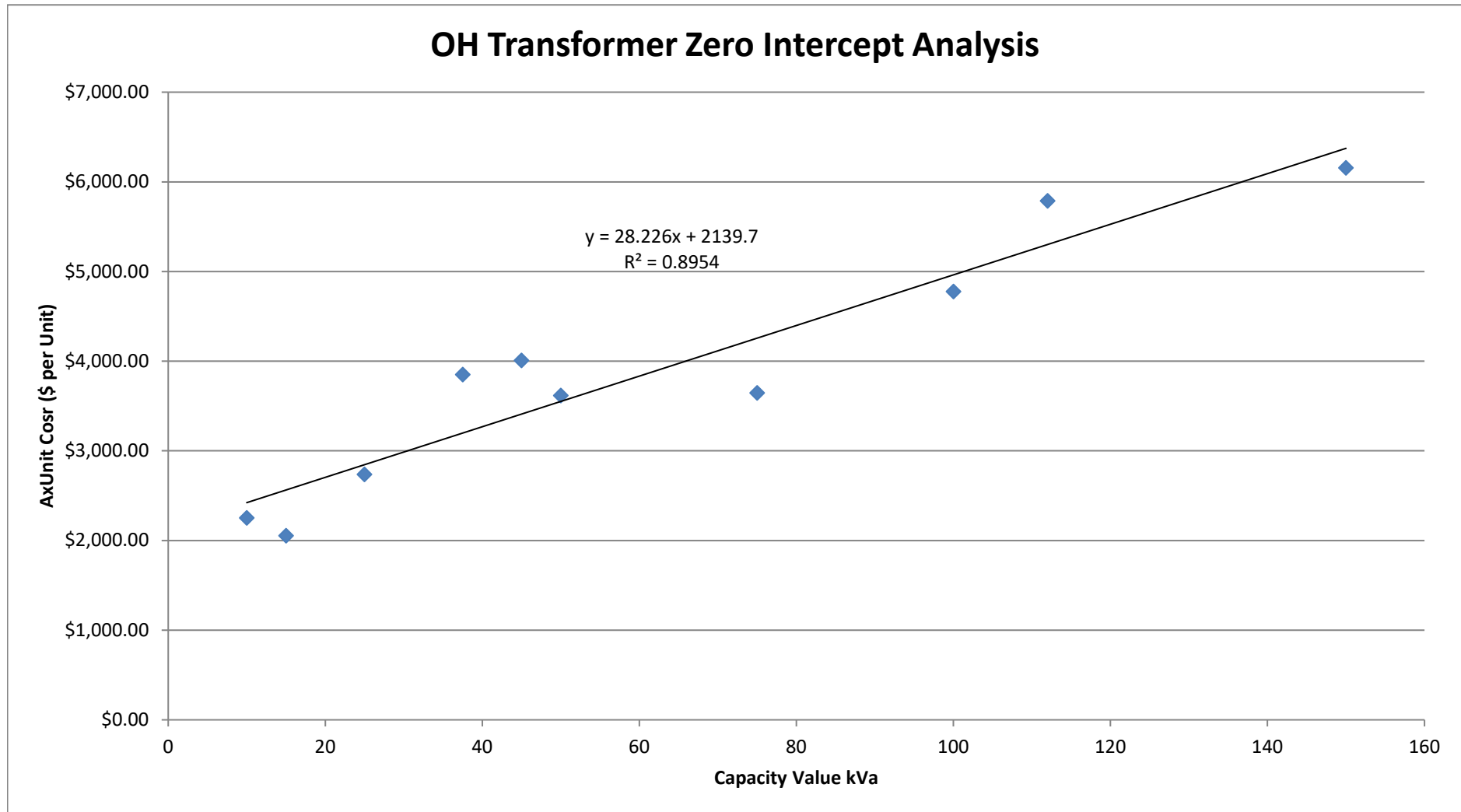


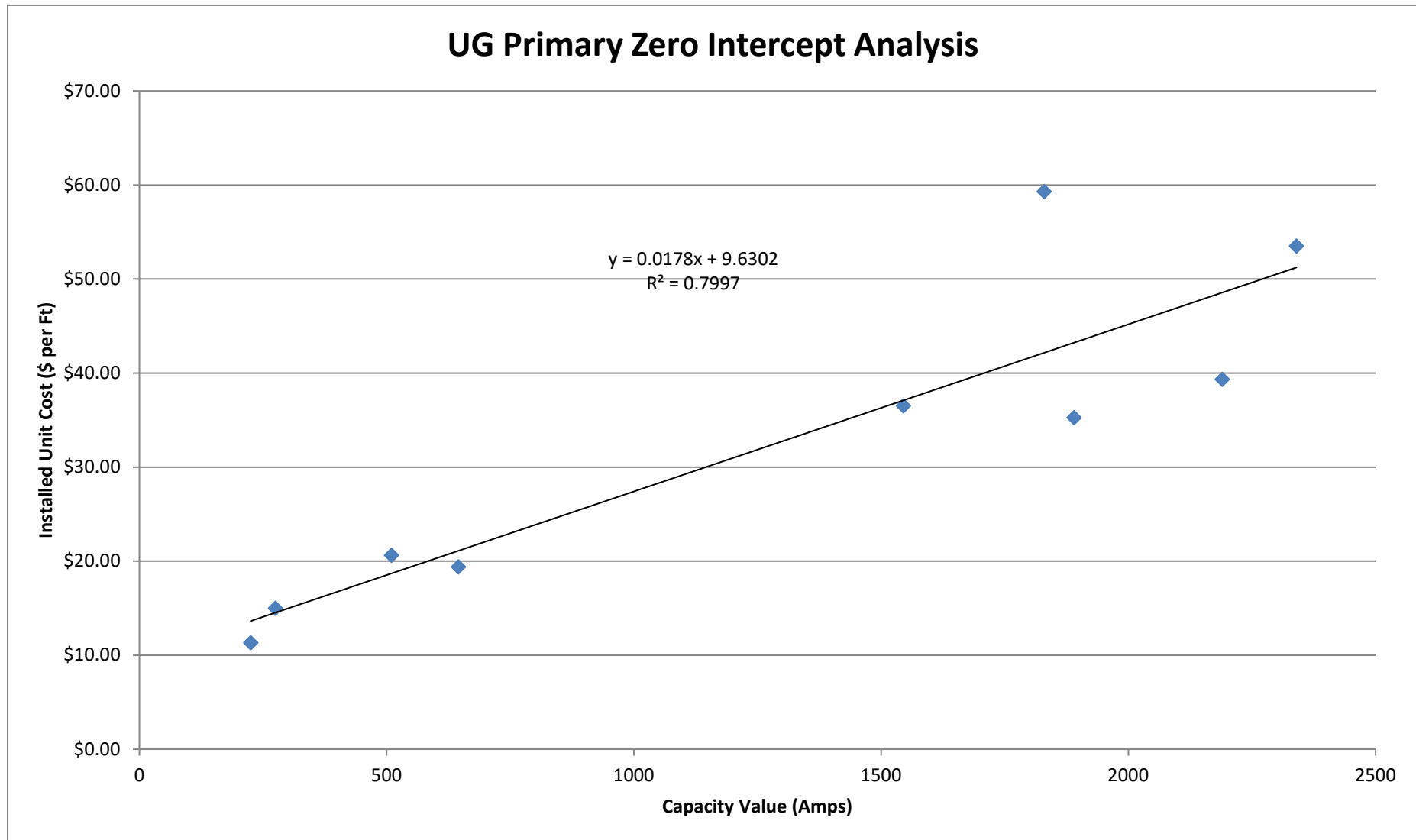
Inventory of Primary Voltage Step-Down Transformers by Transformer Configuration

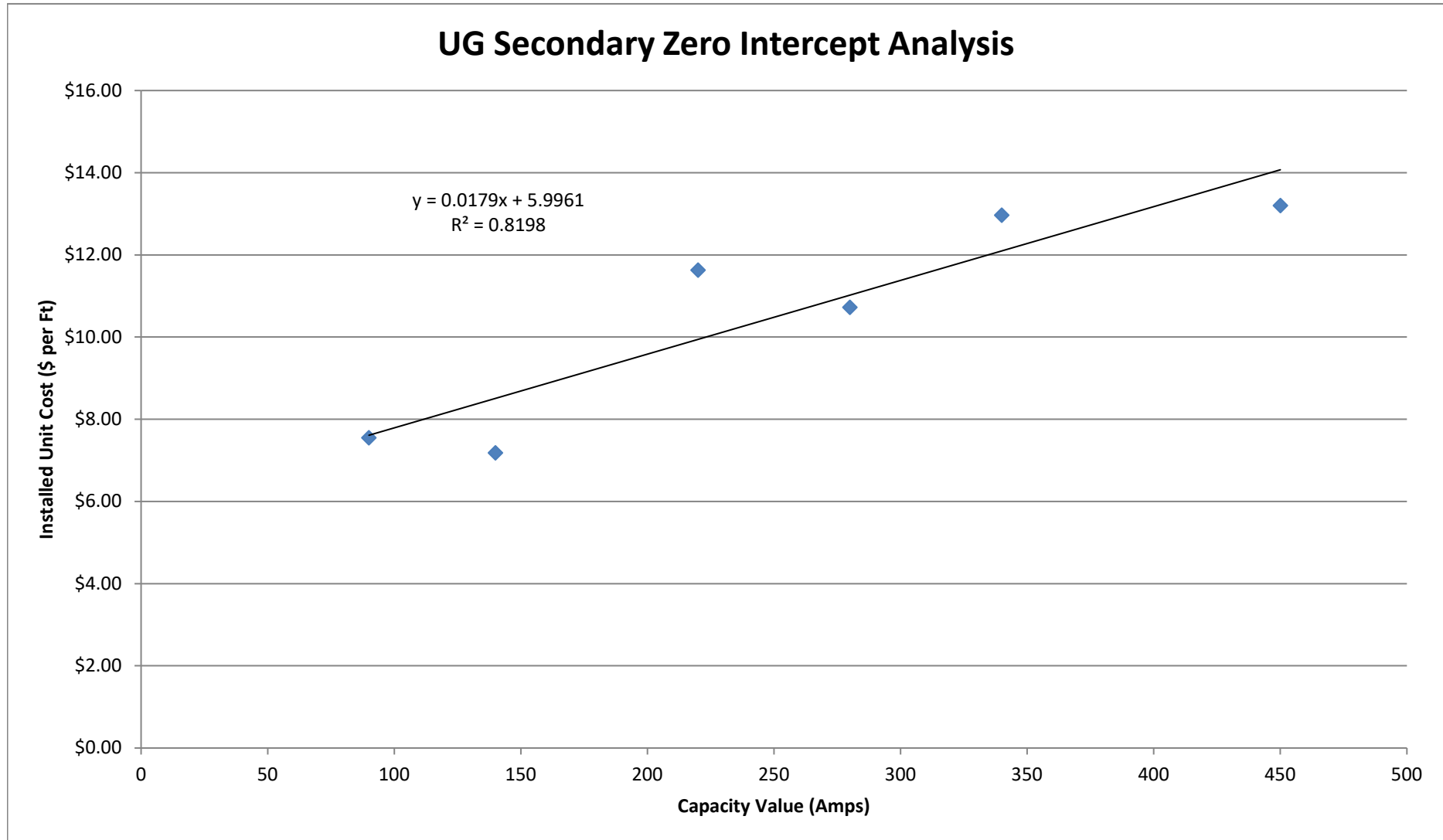
	<u>Number OH 1</u>	<u>% of OH 1</u>	<u>Cumulative % of</u>	<u>% of All OH Step-Down</u>	<u>Load Carrying</u>	<u>Installed Unit</u>	<u>Total Replacement</u>
<u>Overhead 1 Phase</u>	<u>Phase</u>	<u>Phase</u>	<u>OH 1 Phase</u>	<u>Transformers</u>	<u>Capacity (kVA)</u>	<u>Cost</u>	<u>Costs</u>
OH 1 phase 34.5/13.8 kV 500 kVA	170	17.14%	17.14%	12.36%	500	\$44,094	\$7,495,948
OH 1 phase 34.5/12.47 kV 500 kVA	98	9.88%	27.02%	7.13%	500	\$44,095	\$4,321,333
OH 1 phase 34.5/12.47 kV 50 kVA	81	8.17%	35.18%	5.89%	50	\$10,067	\$815,400
OH 1 phase 19.92/7.2 kV 167 kVA	66	6.65%	41.83%	4.80%	167	\$22,743	\$1,501,029
OH 1 phase 19.92/7.97 kV 50 kVA	53	5.34%	47.18%	3.85%	50	\$10,067	\$533,533
OH 1 phase 34.5/13.8 kV 250 kVA	62	6.25%	53.43%	4.51%	250	\$31,030	\$1,923,866
OH 1 phase 19.92/7.2 kV 100 kVA	46	4.64%	58.06%	3.35%	100	\$20,005	\$920,219
OH 1 phase 34.5/12.47 kV 333 kVA	57	5.75%	63.81%	4.15%	333	\$37,814	\$2,155,414
OH 1 phase 34.5/12.47 kV 250 kVA	46	4.64%	68.45%	3.35%	250	\$31,029	\$1,427,314
OH 1 phase 34.5/13.8 kV 333 kVA	46	4.64%	73.08%	3.35%	333	\$37,814	\$1,739,457
<b>Number of Transformers and Cost of Transformers for 49 Remaining 1 Phase OH Transformer Configurations</b>	<b>267</b>	<b>26.92%</b>		<b>18.15%</b>		<b>\$55,293.65</b>	<b>\$14,763,405</b>
<b>Total OH 1 Phase</b>	<b>992</b>	<b>100.00%</b>		<b>72.15%</b>		<b>\$37,900.12</b>	<b>\$37,596,919</b>
	<u>Number OH 2</u>	<u>% of OH 2</u>	<u>Cumulative % of</u>	<u>% of All OH Step-Down</u>	<u>Load Carrying</u>	<u>Installed Unit</u>	<u>Total Replacement</u>
<u>Overhead 2 Phase</u>	<u>Phase</u>	<u>Phase</u>	<u>OH 2 Phase</u>	<u>Transformers</u>	<u>Capacity (kVA)</u>	<u>Cost</u>	<u>Costs</u>
OH 2 phase 34.5/13.8 kV 1000 kVA	7	12.28%	12.28%	0.51%	1000	\$66,139	\$462,975
OH 2 phase 13.8/4.16 kV 500 kVA	4	7.02%	19.30%	0.29%	500	\$28,550	\$114,200
OH 2 phase 34.5/12.47 kV 1000 kVA	4	7.02%	26.32%	0.29%	1000	\$66,139	\$264,557
OH 2 phase 34.5/12.47 kV 500 kVA	4	7.02%	33.33%	0.29%	500	\$46,543	\$186,171
OH 2 phase 34.5/13.8 kV 200 kVA	4	7.02%	40.35%	0.29%	200	\$24,850	\$99,400
<b>Number of Transformers and Cost of Transformers for 22 Remaining 2 Phase OH Transformer Configurations</b>	<b>34</b>	<b>59.65%</b>		<b>2.47%</b>		<b>\$34,935</b>	<b>\$1,187,796</b>
<b>Total OH 2 Phase</b>	<b>57</b>	<b>100.00%</b>		<b>4.15%</b>		<b>\$40,616</b>	<b>\$2,315,100</b>
	<u>Number OH 3</u>	<u>% of OH 3</u>	<u>Cumulative % of</u>	<u>% of All OH Step-Down</u>	<u>Load Carrying</u>	<u>Installed Unit</u>	<u>Total Replacement</u>
<u>Overhead 3 Phase</u>	<u>Phase</u>	<u>Phase</u>	<u>OH 3 Phase</u>	<u>Transformers</u>	<u>Capacity (kVA)</u>	<u>Cost</u>	<u>Costs</u>
OH 3 phase 34.5/13.8 kV 1500 kVA	29	8.90%	8.90%	2.11%	1500	\$81,703	\$2,369,385
OH 3 phase 13.8/4.16 kV 1000 kVA	25	7.67%	16.56%	1.82%	1000	\$56,982	\$1,424,559
OH 3 phase 34.5/12.47 kV 1500 kVA	18	5.52%	22.09%	1.31%	1500	\$81,706	\$1,470,706
OH 3 phase 13.8/4.16 kV 500 kVA	14	4.29%	26.38%	1.02%	500	\$33,865	\$474,106
OH 3 phase 34.5/12.47 kV 1000 kVA	12	3.68%	30.06%	0.87%	1000	\$70,068	\$840,812
OH 3 phase 34.5/13.8 kV 500 kVA	11	3.37%	33.44%	0.80%	500	\$42,141	\$463,553
OH 3 phase 13.8/12.47 kV 1500 kVA	10	3.07%	36.50%	0.73%	1500	\$93,865	\$938,647
OH 3 phase 13.8/12.47 kV 5000 kVA	10	3.07%	39.57%	0.73%	5000	\$305,750	\$3,057,500
OH 3 phase 13.8/4.16 kV 1500 kVA	10	3.07%	42.64%	0.73%	1500	\$66,715	\$667,147
<b>Number of Transformers and Cost of Transformers for 60 Remaining 3 Phase OH Transformer Configurations</b>	<b>187</b>	<b>57.36%</b>		<b>13.60%</b>		<b>\$55,413</b>	<b>\$10,362,271</b>
<b>Total OH 3 Phase</b>	<b>326</b>	<b>100.00%</b>		<b>23.71%</b>		<b>\$67,695</b>	<b>\$22,068,685</b>
<b>Total OH Step-Down Transformers</b>	<b>1,375</b>					<b>\$45,077</b>	<b>\$61,980,704</b>
	<u>Number UG 1</u>	<u>% of UG 1</u>	<u>Cumulative % of</u>	<u>% of All UG Step-Down</u>	<u>Load Carrying</u>	<u>Installed Unit</u>	<u>Total Replacement</u>
<u>Underground 1 Phase</u>	<u>Phase</u>	<u>Phase</u>	<u>UG 1 Phase</u>	<u>Transformers</u>	<u>Capacity (kVA)</u>	<u>Cost</u>	<u>Costs</u>
UG 1 phase 19.92/7.2 kV 167 kVA	2	15.38%	15.38%	2.08%	167	\$7,967	\$15,933
UG 1 phase 19.92/7.97 kV 250 kVA	2	15.38%	30.77%	2.08%	250	\$11,106	\$22,211
UG 1 phase 19.92/7.97 kV 500 kVA	2	15.38%	46.15%	2.08%	500	\$22,211	\$44,422
<b>Number of Transformers and Cost of Transformers for 7 Remaining 1 Phase UG Transformer Configurations</b>	<b>7</b>	<b>53.85%</b>		<b>7.29%</b>		<b>\$12,338</b>	<b>\$86,369</b>
<b>Total UG 1 Phase</b>	<b>13</b>	<b>100.00%</b>		<b>13.54%</b>		<b>\$12,995</b>	<b>\$168,936</b>
	<u>Number UG 3</u>	<u>% of UG 3</u>	<u>Cumulative % of</u>	<u>% of All UG Step-Down</u>	<u>Load Carrying</u>	<u>Installed Unit</u>	<u>Total Replacement</u>
<u>Underground 3 Phase</u>	<u>Phase</u>	<u>Phase</u>	<u>UG 3 Phase</u>	<u>Transformers</u>	<u>Capacity (kVA)</u>	<u>Cost</u>	<u>Costs</u>
UG 3 phase 34.5/13.8 kV 5000 kVA	31	37.35%	37.35%	32.29%	5000	\$194,366	\$6,025,331
UG 3 phase 34.5/13.8 kV 3750 kVA	16	19.28%	56.63%	16.67%	3750	\$381,179	\$6,098,869
UG 3 phase 34.5/12.47 kV 5000 kVA	11	13.25%	69.88%	11.46%	5000	\$194,366	\$2,138,021
UG 3 phase 34.5/4.16 kV 11250 kVA	4	4.82%	74.70%	4.17%	11250	\$1,143,538	\$4,574,152
<b>Number of Transformers and Cost of Transformers for 16 Remaining 3 Phase UG Transformer Configurations</b>	<b>21</b>	<b>25.30%</b>		<b>21.88%</b>		<b>\$220,386</b>	<b>\$4,628,103</b>
<b>Total UG 3 Phase</b>	<b>83</b>	<b>100.00%</b>		<b>86.46%</b>		<b>\$282,705</b>	<b>\$23,464,476</b>
<b>Total UG Step-Down Transformers</b>	<b>96</b>						<b>\$23,633,412</b>
<b>All OH &amp; UG Primary Step-Down Transfc</b>	<b>1,471</b>					<b>\$58,201</b>	<b>\$85,614,116</b>

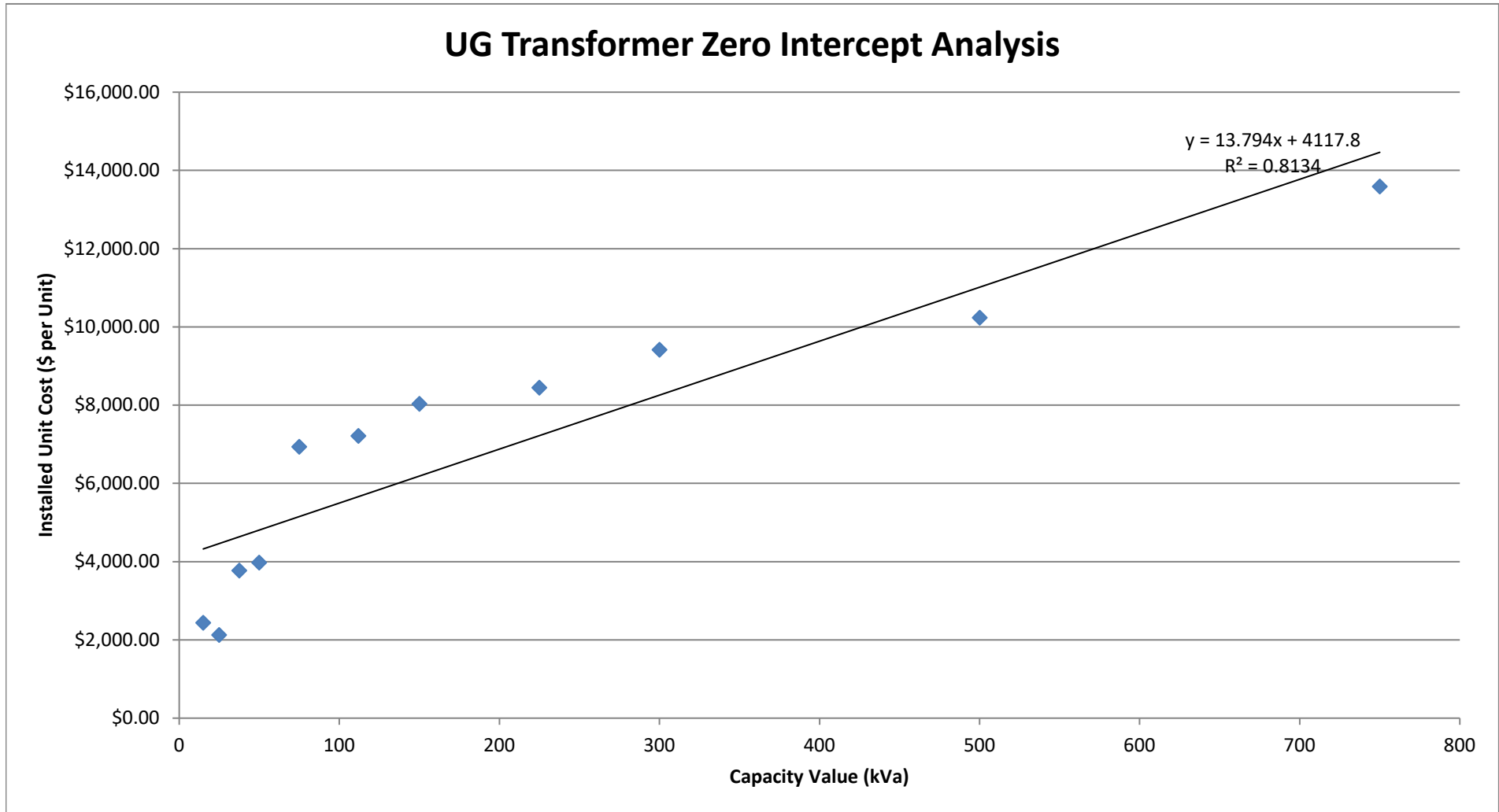












Minimum System / Zero Intercept Distribution System Cost Analysis

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9] = [4] x [8]	[10]	[11] = [4] x [10]	[12]	[13] = [4] x [12]	
Line	Property Unit	Phase	Config Details	Conductor Footage/Number Transformers	% of Total Population Footage/Transformers	Cumulative % of Total Population Footage/Transformers	Load Carrying Capacity (A, or kVA)	Installed Unit Cost	Total Cost	Y Intercept Minimum Cost per Unit	Total Cost Using Y Intercept Unit Cost	Minimum System Cost per Unit	Total Cost Using Minimum System Cost per Unit
1	OH Primary	1 ph	4 ACSR 1ph	10,779,829	15.3%	15.3%	150	\$15.68	\$169,056,584	\$6.92	\$74,596,418	\$12.49	\$134,647,411
2	OH Primary	1 ph	2 ACSR 1ph	9,980,490	14.1%	29.4%	200	\$12.49	\$124,663,116	\$6.92	\$69,064,988	\$12.49	\$124,663,116
3	OH Primary	1 ph	6A CUWD 1ph	7,738,000	11.0%	40.4%	140	\$7.45	\$57,634,222	\$6.92	\$53,546,957	\$12.49	\$96,652,887
4	OH Primary	1 ph	6 CU 1ph	7,002,819	9.9%	50.3%	140	\$7.45	\$52,171,003	\$6.92	\$48,459,509	\$12.49	\$87,469,983
5	OH Primary	1 ph	3/10 CU 1ph	<u>1,602,784</u>	2.3%	52.5%	165	<u>\$6.28</u>	<u>\$10,072,983</u>	\$6.92	<u>\$11,091,269</u>	\$12.49	<u>\$20,019,870</u>
6		<b>Total 1 Phase Primary in Sample</b>		37,103,922				<b>\$11.15</b>	\$413,597,907		\$256,759,141		\$463,453,267
7	OH Primary	3 ph	336 AL 3ph	6,544,945	9.3%	61.8%	1680	\$43.13	\$282,304,381	\$6.92	\$45,291,021	\$12.49	\$81,750,826
8	OH Primary	3 ph	2 ACSR 3ph	5,900,093	8.4%	70.2%	600	\$20.63	\$121,747,785	\$6.92	\$40,828,642	\$12.49	\$73,696,179
9	OH Primary	3 ph	336 ACSR 3ph	4,863,151	6.9%	77.1%	1695	\$49.41	\$240,279,084	\$6.92	\$33,653,007	\$12.49	\$60,744,073
10	OH Primary	3 ph	2/0 ACSR 3ph	2,366,505	3.4%	80.4%	885	\$21.57	\$51,053,227	\$6.92	\$16,376,214	\$12.49	\$29,559,260
11	OH Primary	3 ph	4 ACSR 3ph	1,862,263	2.6%	83.0%	450	\$21.17	\$39,424,099	\$6.92	\$12,886,857	\$12.49	\$23,260,929
12	OH Primary	3 ph	6 CU 3ph	1,325,050	1.9%	84.9%	420	\$10.06	\$13,330,000	\$6.92	\$9,169,344	\$12.49	\$16,550,774
13	OH Primary	3 ph	6A CUWD 3ph	774,047	1.1%	86.0%	420	\$10.06	\$7,785,340	\$6.92	\$5,356,406	\$12.49	\$9,668,376
14	OH Primary	3 ph	1/0 ACSR 3ph	803,837	1.1%	87.2%	780	\$18.44	\$14,825,621	\$6.92	\$5,562,551	\$12.49	\$10,040,470
15	OH Primary	3 ph	4/0 CU 3ph	817,258	1.2%	88.3%	1680	\$24.41	\$19,945,516	\$6.92	\$5,655,426	\$12.49	\$10,208,111
16	OH Primary	3 ph	556 AL 3ph	444,492	0.6%	88.9%	2295	\$43.77	\$19,457,033	\$6.92	\$3,075,883	\$12.49	\$5,552,005
17	OH Primary	3 ph	556 ACSR 3ph	<u>343,150</u>	0.5%	89.4%	2295	\$44.06	<u>\$15,118,255</u>	\$6.92	<u>\$2,374,595</u>	\$12.49	<u>\$4,286,171</u>
18	OH Primary	3 ph	336 AAC 3ph	284,217	0.4%	89.8%	1680	\$45.14					
19	OH Primary	3 ph	556 AAC 3ph	<u>200,338</u>	0.3%	90.1%	2295	<u>\$51.19</u>					
20	OH Primary	<b>Total 3 Phase Primary in Sample</b>		26,529,345				<b>\$31.11</b>	\$825,270,341		\$180,229,947		\$325,317,174
19	OH Primary	<b>Total 1 Ph &amp; 3 Ph OH Primary in Sample</b>		63,633,268				<b>\$19.47</b>	\$1,238,868,249		\$436,989,088		\$788,770,441
20										<b>% Customer Related Costs Using Zero Intercept =</b>	<b>35.27%</b>	<b>% Customer Related Costs Using Minimum System =</b>	<b>63.67%</b>
21	OH Secondary		2 ACSR Open Wire	20,659,710	15.1%	15.1%	200	\$4.26	\$88,059,428	\$3.13	\$64,664,893	\$3.95	\$81,590,435
22	OH Secondary		4 ACSR Open Wire	9,593,567	7.0%	22.1%	150	\$3.61	\$34,654,866	\$3.13	\$30,027,866	\$3.95	\$37,887,431
23	OH Secondary		1/0 ACSR Open Wire	18,464,472	13.5%	35.6%	260	\$4.34	\$80,052,652	\$3.13	\$57,793,798	\$3.95	\$72,920,884
24	OH Secondary		6 CU Open Wire	10,042,139	7.3%	43.0%	140	\$4.12	\$41,399,445	\$3.13	\$31,431,894	\$3.95	\$39,658,952
25	OH Secondary		6A CUWD Open Wire	6,529,682	4.8%	47.7%	140	\$3.79	\$24,729,601	\$3.13	\$20,437,903	\$3.95	\$25,787,369
26	OH Secondary		4 CU Open Wire	15,421,282	11.3%	59.0%	185	\$3.43	\$52,841,488	\$3.13	\$48,268,613	\$3.95	\$60,902,554
27	OH Secondary		2 CU Open Wire	15,133,733	11.1%	70.1%	245	\$3.72	\$56,266,499	\$3.13	\$47,368,586	\$3.95	\$59,766,952
28	OH Secondary		1/0 AL Triplex	7,529,615	5.5%	75.6%	205	\$3.95	\$29,736,358	\$3.13	\$23,567,694	\$3.95	\$29,736,358
29	OH Secondary		6 ACSR Duplex	4,816,255	3.5%	79.1%	90	\$3.65	\$17,566,983	\$3.13	\$15,074,878	\$3.95	\$19,020,612
30	OH Secondary		1/0 AL Triplex, Lashed	6,462,163	4.7%	83.8%	205	\$4.44	\$28,667,046	\$3.13	\$20,226,571	\$3.95	\$25,520,721
31	OH Secondary		3/10 CU Open Wire	1,561,406	1.1%	85.0%	165	\$3.81	\$5,954,036	\$3.13	\$4,887,200	\$3.95	\$6,166,387
32	OH Secondary		1/0 CU Open Wire	2,553,956	1.9%	86.8%	300	\$4.90	\$12,520,647	\$3.13	\$7,993,883	\$3.95	\$10,086,221
33	OH Secondary		2 AL Triplex	2,563,679	1.9%	88.7%	150	\$3.85	\$9,866,366	\$3.13	\$8,024,316	\$3.95	\$10,124,619
34	OH Secondary		2/0 ACSR Open Wire	794,643	0.6%	89.3%	295	\$4.86	\$3,861,966	\$3.13	\$2,487,233	\$3.95	\$3,138,247
35	OH Secondary		6 AL Duplex	1,363,325	1.0%	90.3%	90	\$3.77	\$5,145,197	\$3.13	\$4,267,207	\$3.95	\$5,384,116
36	OH Secondary		1/0 AL Open Wire	<u>1,266,940</u>	0.9%	91.2%	265	<u>\$4.23</u>	<u>\$5,357,966</u>	\$3.13	<u>\$3,965,521</u>	\$3.95	<u>\$5,003,466</u>
37		<b>Total OH Secondary in Sample</b>		124,756,567				<b>\$3.98</b>	\$496,680,543		\$390,488,056		\$492,695,327



Minimum System / Zero Intercept Distribution System Cost Analysis

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9] = [4] x [8]	[10]	[11] = [4] x [10]	[12]	[13] = [4] x [12]	
Line	Property Unit	Phase	Config Details	Conductor Footage/Number Transformers	% of Total Population Footage/ Transformers	Cumulative % of Total Population Footage/ Transformers	Load Carrying Capacity (A, or kVA)	Installed Unit Cost	Total Cost	Y Intercept Minimum Cost per Unit	Total Cost Using Y Intercept Unit Cost	Minimum System Cost per Unit	Total Cost Using Minimum System Cost per Unit
38										% Customer Related Costs Using Zero Intercept =	<b>78.62%</b>	% Customer Related Costs Using Minimum System =	<b>99.20%</b>
39	OH Transformers		1 Phase Wye 25 kVA	33,645	29.4%	29.4%	25	\$2,737	\$92,087,348	\$2,140	\$72,000,300	\$2,253	\$75,802,185
40	OH Transformers		1 Phase Wye 10 kVA	18,868	16.5%	45.8%	10	\$2,253	\$42,503,217	\$2,140	\$40,377,520	\$2,253	\$42,509,604
41	OH Transformers		1 Phase Wye 37.5 kVA	16,272	14.2%	60.0%	37.5	\$3,851	\$62,671,592	\$2,140	\$34,822,080	\$2,253	\$36,660,816
42	OH Transformers		1 Phase Wye 15 kVA	17,020	14.9%	74.9%	15	\$2,052	\$34,930,407	\$2,140	\$36,422,800	\$2,253	\$38,346,060
43	OH Transformers		1 Phase Wye 50 kVA	13,415	11.7%	86.6%	50	\$3,617	\$48,518,100	\$2,140	\$28,708,100	\$2,253	\$30,223,995
44	OH Transformers		3 Phase Wye/Wye 75 kVA	1,300	1.1%	87.7%	75	\$3,645	\$4,738,163	\$2,140	\$2,782,000	\$2,253	\$2,928,900
45	OH Transformers		3 Phase Wye/Wye 150 kVA	1,034	0.9%	88.6%	150	\$6,155	\$6,364,154	\$2,140	\$2,212,760	\$2,253	\$2,329,602
46	OH Transformers		3 Phase Wye/Wye 112 kVA	594	0.5%	89.2%	112	\$5,789	\$3,438,656	\$2,140	\$1,271,160	\$2,253	\$1,338,282
47	OH Transformers		3 Phase Wye/Wye 45 kVA	767	0.7%	89.8%	45	\$4,008	\$3,073,902	\$2,140	\$1,641,380	\$2,253	\$1,728,051
48	OH Transformers		1 Phase Wye 100 kVA	<u>607</u>	0.5%	90.4%	100	<u>\$4,776</u>	<u>\$2,899,329</u>	\$2,140	<u>\$1,298,980</u>	\$2,253	<u>\$1,367,571</u>
49		<b>Total OH Transformers in Sample</b>		103,522				<b>\$2,909.77</b>	<b>\$301,224,867</b>		<b>\$221,537,080</b>		<b>\$233,235,066</b>
50										% Customer Related Costs Using Zero Intercept =	<b>73.55%</b>	% Customer Related Costs Using Minimum System =	<b>77.43%</b>
51	UG Primary	1 ph	1/0 AL 1ph	16,001,972	29.0%	29.0%	275	\$14.98	\$239,683,496	\$9.63	\$154,098,992	\$11.32	\$181,080,066
52	UG Primary	1 ph	2 AL 1ph	<u>14,328,983</u>	25.9%	54.9%	225	<u>\$11.32</u>	<u>\$162,148,341</u>	\$9.63	<u>\$137,988,109</u>	<u>\$11.32</u>	<u>\$162,148,341</u>
53		<b>Total 1 Phase Primary in Sample</b>		30,330,955				<b>\$13.25</b>	<b>\$401,831,837</b>		<b>\$292,087,100</b>		<b>\$343,228,408</b>
54													
55	UG Primary	3 ph	1/0 AL 3ph	13,798,626	25.0%	79.9%	645	\$19.40	\$267,672,674	\$9.63	\$132,880,769	\$11.32	\$156,146,761
56	UG Primary	3 ph	750 AL 3ph	4,716,848	8.5%	88.5%	1890	\$35.25	\$166,287,861	\$9.63	\$45,423,243	\$11.32	\$53,376,364
57	UG Primary	3 ph	2 AL 3ph	1,079,318	2.0%	90.4%	510	\$20.62	\$22,255,542	\$9.63	\$10,393,834	\$11.32	\$12,213,683
58	UG Primary	3 ph	1000 AL 3ph	541,370	1.0%	91.4%	2190	\$39.34	\$21,295,087	\$9.63	\$5,213,389	\$11.32	\$6,126,197
59	UG Primary	3 ph	500 AL 3ph	465,879	0.8%	92.2%	1545	\$36.51	\$17,009,235	\$9.63	\$4,486,413	\$11.32	\$5,271,936
60	UG Primary	3 ph	500 CU 3ph	745,916	1.4%	93.6%	1830	\$59.31	\$44,239,878	\$9.63	\$7,183,168	\$11.32	\$8,440,863
61	UG Primary	3 ph	750 CU 3ph	<u>416,228</u>	0.8%	94.3%	2340	<u>\$53.50</u>	<u>\$22,269,593</u>	\$9.63	<u>\$4,008,273</u>	\$11.32	<u>\$4,710,078</u>
62		<b>Total 3 Phase Primary in Sample</b>		21,298,305				<b>\$25.54</b>	<b>\$544,020,635</b>		<b>\$209,589,088</b>		<b>\$246,285,881</b>
63													
64		<b>Total 1 Ph &amp; 3 Ph UG Primary in Sample</b>		51,629,260					<b>\$945,852,472</b>		<b>\$501,676,188</b>		<b>\$589,514,289</b>
65										% Customer Related Costs Using Zero Intercept =	<b>53.04%</b>	% Customer Related Costs Using Minimum System =	<b>62.33%</b>
66	UG Secondary		6 AL Duplex	10,661,412	38.0%	38.0%	90	\$7.55	\$80,507,317	\$6.00	\$63,968,471	\$11.63	\$123,971,012
67	UG Secondary		4/0 AL Triplex	8,422,109	30.0%	68.0%	340	\$12.97	\$109,209,956	\$6.00	\$50,532,652	\$11.63	\$97,932,371
68	UG Secondary		2/0 AL Triplex	2,703,807	9.6%	77.6%	280	\$10.72	\$28,993,248	\$6.00	\$16,222,844	\$11.63	\$31,439,901
69	UG Secondary		1/0 AL Triplex	1,572,271	5.6%	83.2%	220	\$11.63	\$18,282,381	\$6.00	\$9,433,624	\$11.63	\$18,282,381
70	UG Secondary		6 CU Open Wire	1,230,243	4.4%	87.6%	140	\$7.18	\$8,837,212	\$6.00	\$7,381,458	\$11.63	\$14,305,278
71	UG Secondary		350 AL Triplex	<u>574,237</u>	2.0%	89.7%	450	<u>\$13.20</u>	<u>\$7,580,359</u>	\$6.00	<u>\$3,445,419</u>	\$11.63	<u>\$6,677,229</u>
72		<b>Total UG Secondary in Sample</b>		25,164,078				<b>\$10.07</b>	<b>\$253,410,473</b>		<b>\$150,984,467</b>		<b>\$292,608,172</b>

Minimum System / Zero Intercept Distribution System Cost Analysis

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9] = [4] x [8]	[10]	[11] = [4] x [10]	[12]	[13] = [4] x [12]	
Line	Property Unit	Phase	Config Details	Conductor Footage/Number Transformers	% of Total Population Footage/ Transformers	Cumulative % of Total Population Footage/ Transformers	Load Carrying Capacity (A, or kVA)	Installed Unit Cost	Total Cost	Y Intercept Minimum Cost per Unit	Total Cost Using Y Intercept Unit Cost	Minimum System Cost per Unit	Total Cost Using Minimum System Cost per Unit
73										% Customer Related Costs Using Zero Intercept =	<b>59.58%</b>	% Customer Related Costs Using Minimum System =	<b>100.00%</b>
74	UG Transformers		1 Phase Wye 50 kVA	27,634	32.3%	32.3%	50	\$3,977	\$109,901,575	\$4,118	\$113,796,812	\$2,440	\$67,437,807
75	UG Transformers		1 Phase Wye 25 kVA	18,283	21.4%	53.7%	25	\$2,129	\$38,929,413	\$4,118	\$75,289,394	\$2,440	\$44,617,696
76	UG Transformers		1 Phase Wye 37.5 kVA	9,017	10.5%	64.2%	37.5	\$3,770	\$33,989,685	\$4,118	\$37,132,006	\$2,440	\$22,005,019
77	UG Transformers		3 Phase Wye/Wye 150 kVA	3,764	4.4%	68.6%	150	\$8,036	\$30,248,403	\$4,118	\$15,500,152	\$2,440	\$9,185,637
78	UG Transformers		3 Phase Wye/Wye 300 kVA	3,671	4.3%	72.9%	300	\$9,417	\$34,568,758	\$4,118	\$15,117,178	\$2,440	\$8,958,681
79	UG Transformers		3 Phase Wye/Wye 75 kVA	3,535	4.1%	77.1%	75	\$6,936	\$24,516,999	\$4,118	\$14,557,130	\$2,440	\$8,626,788
80	UG Transformers		3 Phase Wye/Wye 500 kVA	3,161	3.7%	80.8%	500	\$10,233	\$32,345,801	\$4,118	\$13,016,998	\$2,440	\$7,714,081
81	UG Transformers		1 Phase Wye 15 kVA	2,399	2.8%	83.6%	15	\$2,440	\$5,854,502	\$4,118	\$9,879,082	\$2,440	\$5,854,502
82	UG Transformers		3 Phase Wye/Wye 112 kVA	2,030	2.4%	85.9%	112	\$7,217	\$14,649,674	\$4,118	\$8,359,540	\$2,440	\$4,953,997
83	UG Transformers		3 Phase Wye/Wye 225 kVA	1,829	2.1%	88.1%	225	\$8,446	\$15,448,447	\$4,118	\$7,531,822	\$2,440	\$4,463,478
84	UG Transformers		3 Phase Wye/Wye 750 kVA	<u>1,812</u>	2.1%	90.2%	750	<u>\$13,586</u>	<u>\$24,618,211</u>	\$4,118	<u>\$7,461,816</u>	\$2,440	<u>\$4,421,991</u>
85		<b>Total UG Transformers in Sample</b>		77,135				<b>\$4,732.89</b>	<b>\$365,071,467</b>		<b>\$317,641,930</b>		<b>\$188,239,676</b>
86										% Customer Related Costs Using Zero Intercept =	<b>87.01%</b>	% Customer Related Costs Using Minimum System =	<b>51.56%</b>
87		<b>Total OH and UG Transformers in Sample</b>		180,657				<b>\$3,688</b>	<b>\$666,296,334</b>		<b>\$539,179,010</b>		<b>\$421,474,742</b>
88										% Customer Related Costs Using Zero Intercept =	<b>80.92%</b>	% Customer Related Costs Using Minimum System =	<b>63.26%</b>

Northern States Power Company  
 Minimum System / Zero Intercept Analysis Results  
 Distribution Plant Cost Classification: Capacity Vs Customer Classification  
 Hybrid Method

		[1]	[2]	[3] = [1] x [2]	[4] = % of Line 11	[5] = [Col 5 Line 11 - Line 10] x [4]	[6] = (Customer % from Attachment N)	[7]	[8]
<u>Line</u>	<u>Overhead Distribution Plant</u>	<u>Total Footage</u>	<u>Average Cost per Foot</u>	<u>Total Replacement Cost (\$000)</u>	<u>% of Total Replacement Cost</u>	<u>Test Year Plant in Service (\$000)</u>	<u>% Customer or Capacity Related</u>	<u>Final Test Year Plant in Service (\$000)</u>	<u>% of Total Overhead Dist Costs</u>
1	OH Primary Single Phase Capacity						64.73%	\$16,783	14.92%
2	OH Primary Single Phase Customer						35.27%	\$9,146	8.13%
3	Total OH Primary Single Phase	40,629,520	\$11.15	\$452,898	23.46%	\$25,928	100.00%	\$25,928	
4	OH Primary Multi Phase Capacity						64.73%	\$34,565	30.74%
5	OH Primary Multi Phase Customer						35.27%	\$18,836	16.75%
6	Total OH Primary Multi Phase	29,985,424	\$31.11	\$932,781	48.33%	\$53,402	100.00%	\$53,402	
7	OH Secondary Capacity						21.38%	\$6,665	5.93%
8	OH Secondary Customer						78.62%	\$24,509	21.79%
9	Total OH Secondary	136,774,689	\$3.98	\$544,527	28.21%	\$31,174	100.00%	\$31,174	
10	Street Lighting (see Line 9 of Schedule XX)					\$1,949		\$1,949	1.73%
11	Total Overhead (see Schedule X, Page 4, Column 1, Line XX)			\$1,930,206	100.00%	\$112,453		\$112,453	100.00%

		[1]	[2]	[3] = [1] x [2]	[4] = % of Line 22	[5] = [Col 5 Line 22 - Line 21] x [4]	[6] = (Customer % from Attachment N)	[7]	[8]
<u>Line</u>	<u>Underground Distribution Plant</u>	<u>Total Footage</u>	<u>Average Cost per Foot</u>	<u>Total Replacement Cost (\$000)</u>	<u>% of Total Replacement Cost</u>	<u>Test Year Plant in Service (\$000)</u>	<u>% Customer or Capacity Related</u>	<u>Final Test Year Plant in Service (\$000)</u>	<u>% of Total Underground Distr Costs</u>
12	UG Primary Single Phase Capacity						46.96%	\$21,722	14.73%
13	UG Primary Single Phase Customer						53.04%	\$24,534	16.63%
14	Total UG Primary Single Phase	31,045,217	\$13.25	\$411,295	31.36%	\$46,257	100.00%	\$46,257	
15	UG Primary Multi Phase Capacity						46.96%	\$32,616	22.11%
16	UG Primary Multi Phase Customer						53.04%	\$36,838	24.97%
17	Total UG Primary Multi Phase	24,177,202	\$25.54	\$617,556	47.09%	\$69,454	100.00%	\$69,454	
18	UG Secondary Capacity						40.42%	\$12,849	8.71%
19	UG Secondary Customer						59.58%	\$18,941	12.84%
20	Total UG Secondary	28,068,796	\$10.07	\$282,662	21.55%	\$31,790	100.00%	\$31,790	
21	Street Lighting					\$0		\$0	0.00%
22	Total Underground			\$1,311,513		\$147,501		\$147,501	100.00%

		[1]	[2]	[3] = [1] x [2]	[4] = % of Line 27	[5] = [Col 5 Line 27] x [4]	[6] = (Customer % from Attachment N)	[7]	[8]
<u>Line</u>	<u>Transformers</u>	<u>Number of Transformers</u>	<u>Average Cost Per Transformer</u>	<u>Total Replacement Cost (\$000)</u>	<u>% of Total Replacement Cost</u>	<u>Test Year Plant in Service (\$000)</u>	<u>% Customer or Capacity Related</u>	<u>Final Test Year Plant in Service (\$000)</u>	<u>% of Total Transformer Costs</u>
23	Primary	1,471	\$58,201	\$85,614	10.40%	\$3,362	100% Capacity	\$3,362	10.40%
24	Secondary Capacity						35.84%	\$10,386	32.11%
25	Secondary Customer						64.16%	\$18,593	57.49%
26	Total Secondary	200,081	\$3,688	\$737,936	89.60%	\$28,979	100.00%	\$28,979	89.60%
27	Total Transformers			\$823,550		\$32,341		\$32,341	100.00%

**Northern States Power Company**  
**Minimum System Analysis for Distribution Services**

[1]	[2]	[3]	[4]	[5]	[6] = [3] x [4] x [5] / 1000	[7]	[8] = [6] / [7]	[9] = 1 - [8]
<u>Services</u>	<u>Minimum Conductor Configuration</u>	<u>Minimum Footage per Service</u>	<u>Installed Cost per Foot</u>	<u>Number of Customers</u>	<u>Total Minimum Installed Cost (\$000)</u>	<u>Test Year Plant Investment Distribution Services (\$000)</u>	<u>Customer Component Distribution Services</u>	<u>Capacity Component Distribution Services</u>
1 OH Services	2 ACSR Triplex	50	\$4.03	45,653	\$9,199			
2 <u>UG Services</u>	1/0 Triplex	50	\$2.81	<u>44,887</u>	<u>\$6,307</u>			
3 Total Services				90,540	\$15,506	\$31,771	48.80%	51.20%