

# ATCO Electric

## YUKON

July 26, 2017

Ms. Deana Lemke  
Executive Assistant  
Yukon Utilities Board  
P.O. Box 31728  
Whitehorse, Yukon Y1A 6L3

Dear Ms. Lemke:

**Re: ATCO Electric Yukon Key Performance Indicators**

Please find attached the 2016 Key Performance Indicators for ATCO Electric Yukon.

If you have any questions, please contact the undersigned at (867) 633-7080.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Jay Massie", is written over a circular stamp or mark.

Jay Massie  
Manager

Encl.



**Report to the Yukon Utilities Board**

**2016**

**Key Performance Indicators**

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**ATCO Electric Yukon  
2016 Generation Performance**

Plant	2016	CUL Number	Unit Size (kW)	Engine Hours	Actual Generation (kWh)	Total Available Generation (kWh)	Unit Availability	Capacity Factor	Operating Factor
Beaver Creek	Unit #1	CUL585	285	4,723	898,038	1,346,055	99.04%	66.72%	53.77%
	Unit #2	CUL547	365	3,326	740,881	1,213,990	98.06%	61.03%	37.86%
	Unit #3	CUL354	400	634	152,814	253,600	99.95%	60.26%	7.22%
Carmacks	Unit #1	CUL310	1,600	40	17,862	64,000	99.45%	27.91%	0.46%
Destruction Bay	Unit #1	CUL467	400	1,381	238,918	552,400	74.87%	43.25%	15.72%
	Old Unit #2	CUL372	300	3,906	785,629	1,171,800	99.00%	67.04%	44.47%
	New Unit #2	CUL592	400	937	136,720	374,800	98.26%	36.48%	10.67%
	Unit #3	CUL584	315	2,681	395,189	844,515	93.65%	46.79%	30.52%
Haines Junction	Unit #1	CUL416	1,750	12	7,509	21,000	99.41%	35.76%	0.14%
Old Crow	Unit #1	CUL414	600	1,921	642,726	1,152,600	94.04%	55.76%	21.87%
	Unit #2	CUL355	400	5,713	1,335,002	2,285,200	97.26%	58.42%	65.04%
	Old Unit #3	CUL384	170	278	30,733	47,260	99.90%	65.03%	3.16%
	New Unit #3	CUL591	680	178	44,146	121,040	99.12%	36.47%	2.03%
	Unit #4	CUL586	400	1,167	314,390	466,800	97.48%	67.35%	13.29%
Pelly Crossing	Unit #1	CUL375	275	2	320	550	96.16%	58.18%	0.02%
	Unit #2	CUL470	400	9	2,170	3,600	96.78%	60.28%	0.10%
	Unit #3	CUL405	300	28	2,810	8,400	100.00%	33.45%	0.32%
Ross River	Unit #1	CUL265	1,000	64	21,069	64,000	96.11%	32.92%	0.73%
Stewart Crossing	Unit #3	CUL186	150	9	255	1,350	100.00%	18.89%	0.10%
Teslin	Unit #1	CUL376	1,500	39	13,669	58,500	99.58%	23.37%	0.44%
Watson Lake	Unit #1	CUL422	800	3,674	2,343,600	2,939,200	98.16%	79.74%	41.83%
	Unit #2	CUL595	800	3,421	2,030,400	2,736,800	82.65%	74.19%	38.95%
	Unit #3	CUL352	1,000	2,252	1,826,400	2,252,000	99.36%	81.10%	25.64%
	Unit #4	CUL545	1,200	5,952	6,000,000	7,142,400	94.85%	84.01%	67.76%
	Unit #5	CUL466	600	2,548	2,367,600	1,528,800	98.07%	154.87%	29.01%
	Unit #6	CUL423	800	2,564	1,623,600	2,051,200	95.83%	79.15%	29.19%
Swift River	Unit #1	CUL460	80	7,309	178,553	584,720	99.51%	30.54%	83.21%
	Unit #2	CUL544	80	1,468	40,968	117,440	99.90%	34.88%	16.71%
Fish Lake	Unit #1	CUL542	815	8,744	5,953,197	7,126,360	100.00%	83.54%	99.54%
	Unit #2	CUL108	600	4,880	2,097,240	2,928,000	55.60%	71.63%	55.56%

**The following factors were measured:**

<b>Unit Size:</b>	This is the generator capacity in kW.
<b>Engine Hours:</b>	This is the number of hours the generator was on-line.
<b>Actual Generation:</b>	This is the amount of real power (energy) that the generating unit produced for the year in kW.h
<b>Total Available Generation:</b>	This is the amount of real power (energy) that the generating unit could have produced based on the hours the generator was on-line during the year.
<b>Unit Availability:</b>	This is defined as the number of hours the generator is available for production divided by the hours in the period. This factor is displayed in percentile and is useful in monitoring the overall reliability of the machine without regard to whether it was available when it was most needed.
<b>Capacity Factor:</b>	This is defined as the actual energy produced divided by the amount of energy the unit had the potential to produce for the year. Displayed as a percentile, it is useful as an indication of the utilization of the generator especially in terms of providing energy (kW.h).
<b>Operating Factor:</b>	This is defined as the hours the generator was on-line divided by the total hours in the year. Displayed as a percentile, this factor is useful in monitoring how much the machine was used without regard to its defined benefit such as energy production (kW.h) or capacity factor.

**ATCO Electric Yukon**  
**Summary of Customers, Energy Sales and Revenue**

Line No.	Description	Actual 2010	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Actual 2015	Actual 2016
1	<b>Residential</b>							
2	Customers (average during year)	13,169	13,482	13,857	14,194	14,409	14,631	14,858
3	Sales in MWh	131,265	141,696	150,350	148,780	147,133	148,605	151,351
4	MWh sales per customer	10.0	10.5	10.9	10.5	10.2	10.2	10.2
5	Revenue (\$000s)	16,802	18,928	21,611	21,070	20,629	20,839	21,452
6	Cents per KWh	12.80	13.36	14.37	14.16	14.01	14.02	14.17
7	<b>Commercial</b>							
8	Customers (average during year)	2,692	2,774	2,841	2,918	2,938	2,988	3,000
9	Sales in MWh	145,769	150,591	159,562	159,322	154,709	155,346	157,662
10	MWh sales per customer	54.1	54.3	56.2	54.6	52.7	52.0	52.6
11	Revenue (\$000s)	21,653	23,374	26,583	27,305	25,509	25,534	25,798
12	Cents per KWh	14.85	15.52	16.66	16.51	16.49	16.44	16.36
13	<b>Street lights</b>							
14	Sales in MWh	3,647	3,598	3,771	3,719	3,765	3,886	3,923
15	Revenue (\$000s)	849	881	976	961	962	992	997
16	Cents per KWh	23.28	24.47	25.87	25.84	25.54	25.52	25.42
17	<b>Sentinel lights</b>							
18	Sales in MWh	594	581	560	551	544	519	496
19	Revenue (\$000s)	139	144	149	145	142	138	133
20	Cents per KWh	23.40	24.73	26.54	26.33	26.05	26.58	26.71
21	<b>Total Company - Retail - Primary</b>							
22	Customers	15,861	16,256	16,698	17,112	17,347	17,619	17,858
23	Sales in MWh	281,275	296,466	314,243	312,372	306,272	308,356	313,432
24	Revenue (\$000s)	39,443	43,327	49,319	48,481	47,241	47,503	48,380
25	Cents/KWh	14.02	14.62	15.52	15.52	15.42	15.41	15.44
26	<b>Secondary Sales</b>							
27	Customers (average during year)	21	15	15	1	2	3	3
28	Sales in MWh	10,153	552	1,993	3,959	5,415	7,030	4,835
29	MWh sales per customer	483.5	36.8	132.9	1,979.5	2,707.5	2,812.0	1,511.0
30	Revenue (\$000s)	665	41	164	336	474	532	296
31	Cents per KWh	6.55	7.43	8.23	8.49	8.75	7.57	6.13
32	<b>Wholesale Sales</b>							
33	Customers (average during year)	1	2	2	2	2	2	2
34	Sales in MWh	364	427	338	361	494	430	548
35	MWh sales per customer	364.0	213.5	169.0	180.7	247.0	215.0	273.8
36	Revenue (\$000s)	37	38	28	30	41	36	45
37	Cents per KWh	10.16	8.80	8.30	8.30	8.30	8.30	8.30
38	<b>Total Company</b>							
39	Customers	15,883	16,273	16,715	17,116	17,351	17,624	17,863
40	Sales in MWh	291,792	297,445	316,574	316,692	312,181	315,816	318,815
41	Revenue (\$000s)	40,145	43,406	49,511	48,847	47,756	48,071	48,722
42	Cents/KWh	13.76	14.59	15.47	15.42	15.30	15.22	15.28
43	Retail Revenues	40,145	43,406	49,511	48,847	47,756	48,071	48,722
44	<b>YEC Revenue Shortfall (Rider J + Rider R1)</b>	4,353	2,479	1,437	5,829	6,259	5,266	5,273
	<b>Rider R</b>				1,634	3,672	4,139	3,792
45	<b>TOTAL REVENUES</b>	<u>44,498</u>	<u>45,885</u>	<u>50,948</u>	<u>56,310</u>	<u>57,687</u>	<u>57,476</u>	<u>57,787</u>



## Reliability Performance

**ATCO Electric Yukon tracks the following reliability indices as defined below:**

**SAIFI** refers to the System Average Interruption Frequency Index. This index is defined as the average number of interruptions per customer served per year. SAIFI is calculated by taking the total number of customers affected by interruptions divided by the total number of customers served.

**SAIDI** refers to the System Average Interruption Duration Index. This index is defined as the system average interruption duration for customers served per year. SAIDI is calculated by taking the total customer hours of interruptions divided by total customers served.

**CAIDI** refers to the Customer Average Interruption Duration Index. This index is defined as the customer average interruption duration for customers interrupted during the year. CAIDI is calculated by taking the total customer hours of interruptions divided by total customer interruptions.

**IOR** refers to the Index of Reliability which defines the annual customer-hours that service is available measured as a percentage.

**ATCO Electric Yukon's 2016 results (including and excluding loss of supply from Yukon Energy) are as follows:**

	Including Loss of Supply From Yukon Energy	Excluding Loss of Supply From Yukon Energy
SAIFI	3.13	1.65
SAIDI	6.58	2.66
CAIDI	2.10	1.61
IOR	99.925%	99.970%

## Health, Safety and Environment Performance

ATCO Electric Yukon's 2016 Health, Safety and the Environment Performance measures as follows:

Worker Lost Time Frequency	1.75
Worker Lost Time Severity	10.48
Contractor Lost Time Incidents	0
Preventable Vehicle Incident Frequency	1.75
Number of Reportable Releases	1



## Financial Performance

The table below notes a number of highlights from ATCO Electric Yukon's 2016 Approved 2016-2017 Compliance Filing as well as a number of other 2016 Financial Performance indicators.

Regulated Return on Equity (ROE)	10.44%
Net Rate Base (\$000's)	\$98,513
Average Inventory (\$000's)	\$2,175
Capital Additions (\$000's)	\$12,079
Customers per Employee	279
Sales (MW.h) per Employee	4,985
Total labour expense per Customer	\$335
Ave. Consumption per Res. Customer (MW.h)	10.19
Ave. Consumption per Comm. Customer (MW.h)	52.55