

April 23, 2021

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

Dear Ms. Lemke:

Re: ATCO Electric Yukon 2020 Key Performance Indicators

Please find attached the 2020 Key performance Indicators for ATCO Electric Yukon.

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

Yours truly,



Bill Cullen PLT
Manager
ATCO Electric Yukon

Encl.



Report to the Yukon Utilities Board

2020

Key Performance Indicators

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**ATCO Electric Yukon
2020 Generation Performance**

Plant	2020	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	4,808	732,632	1,370,280	96.3%	55.5%	54.7%
	Unit #2	CUL547	365	2,540	585,104	927,100	95.3%	66.2%	28.9%
	Unit #3	CUL354	400	1,667	493,354	666,800	92.8%	79.7%	19.0%
Carmacks	Unit #1	CUL310	1,600	81	74,459	129,600	99.5%	57.8%	0.9%
Destruction Bay	Unit #1	CUL467	600	721	277,067	432,600	97.5%	65.7%	8.2%
	Unit #2	CUL592	400	3,494	1,037,205	1,397,600	96.7%	76.8%	39.8%
	Unit #3	CUL584	312	3,965	666,007	1,237,080	96.6%	55.7%	45.1%
Haines Junction	Unit #1	CUL416	1,750	178	106,836	311,500	99.7%	34.4%	2.0%
Old Crow	Unit #1	CUL414	600	2,745	1,005,120	1,647,000	92.8%	65.8%	31.3%
	Unit #2	CUL355	400	1,473	312,722	589,200	82.8%	64.1%	16.8%
	Unit #3	CUL591	680	1,078	412,941	733,040	99.6%	56.6%	12.3%
	Unit #4	CUL586	450	4,106	1,051,003	1,847,700	97.2%	58.5%	46.7%
Pelly Crossing	Unit #1	CUL375	275	9	10	2,475	94.0%	0.4%	0.1%
	Unit #2	CUL470	600	34	90	20,400	99.6%	0.4%	0.4%
	Unit #3	CUL405	300	32	40	9,600	85.3%	0.5%	0.4%
Ross River	Unit #1	CUL265	1,000	173	90,826	173,000	98.1%	53.5%	2.0%
Stewart Crossing	Unit #3	CUL186	150	47	498	7,050	92.3%	7.7%	0.5%
Teslin	Unit #1	CUL376	1,500	106	67,492	159,000	99.7%	42.6%	1.2%
Watson Lake	Unit #1	CUL422	800	4,187	2,624,400	3,349,600	82.9%	94.5%	47.7%
	Unit #2	CUL595	895	6,023	3,734,400	5,390,585	96.9%	71.5%	68.6%
	Unit #3	CUL601	1,350	4,430	3,408,000	5,980,500	99.2%	57.4%	50.4%
	Unit #4	CUL545	1,450	2,881	2,601,600	4,177,450	94.3%	66.0%	32.8%
	Unit #5	CUL466	650	1,680	820,800	1,092,000	93.4%	80.4%	19.1%
	Unit #6	CUL423	800	2,561	1,579,200	2,048,800	83.4%	92.4%	29.2%
Swift River	Unit #1	CUL596	100	7,373	203,599	737,300	97.3%	28.4%	83.9%
	Unit #2	CUL544	88	1,424	46,276	125,312	95.1%	38.8%	16.2%
Fish Lake	Unit #1	CUL542	815	8,639	5,033,664	7,040,581	99.3%	71.5%	98.3%
	Unit #2	CUL108	600	54	25,200	32,250	0.6%	78.1%	0.6%

The following factors were measured

Unit Size:	This is the generator capacity in kW.
Engine Hours:	This is the number of hours the generator was on-line.
Actual Generation:	This is the amount of real power (energy) that the generating unit produced for the year in kW.h
Total Available Generation:	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.
Unit Availability:	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.
Capacity Factor:	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).
Operating Factor:	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 2013	Actual 2014	Actual 2015	Actual 2016	Actual 2017	Actual 2018	Actual 2019	Actual 2020
1	Residential								
2	Customers (average during year)	14,194	14,409	14,631	14,858	15,114	15,430	15,775	16,155
3	Sales in MWh	148,780	147,133	148,605	151,351	165,654	167,596	166,455	185,235
4	MWh sales per customer	10.5	10.2	10.2	10.2	11.0	10.9	10.6	11.5
5	Revenue (\$000s)	21,070	20,629	20,839	21,452	23,262	23,491	23,506	25,960
6	Cents per KWh	14.16	14.01	14.02	14.17	14.04	14.02	14.12	14.01
7	Commercial								
8	Customers (average during year)	2,918	2,938	2,988	3,000	3,036	3,095	3,145	3,178
9	Sales in MWh	159,322	154,709	155,346	157,662	165,924	168,285	168,680	163,933
10	MWh sales per customer	54.6	52.7	52.0	52.6	54.6	54.4	53.6	51.6
11	Revenue (\$000s)	27,305	25,509	25,534	25,798	27,102	27,353	27,589	27,110
12	Cents per KWh	16.51	16.49	16.44	16.36	16.33	16.25	16.36	16.54
13	Street lights								
14	Sales in MWh	3,719	3,765	3,886	3,923	3,942	3,951	3,876	3,889
15	Revenue (\$000s)	961	962	992	997	1,009	1,021	1,014	1,037
16	Cents per KWh	25.84	25.54	25.52	25.42	25.59	25.85	26.17	26.66
17	Sentinel lights								
18	Sales in MWh	551	544	519	496	495	486	480	452
19	Revenue (\$000s)	145	142	138	133	132	130	128	121
20	Cents per KWh	26.33	26.05	26.58	26.71	26.66	26.76	26.59	26.84
21	Total Company - Retail - Primary								
22	Customers	17,112	17,347	17,619	17,858	18,150	18,525	18,919	19,334
23	Sales in MWh	312,372	306,272	308,356	313,432	336,016	340,318	339,491	353,508
24	Revenue (\$000s)	48,481	47,241	47,503	48,380	51,504	51,995	52,237	54,228
25	Cents/KWh	15.52	15.42	15.41	15.44	15.33	15.28	15.39	15.34
26	Secondary Sales								
27	Customers (average during year)	1	2	3	3	5	5	5	5
28	Sales in MWh	3,959	5,415	7,030	4,835	8,385	258	1	479
29	MWh sales per customer	1,979.5	2,707.5	2,812.0	1,511.0	1,705.4	51.6	0.1	97.5
30	Revenue (\$000s)	336	474	532	296	553	21	0	34
31	Cents per KWh	8.49	8.75	7.57	6.13	6.59	7.99	8.37	7.07
32	Wholesale Sales								
33	Customers (average during year)	2	2	2	2	2	2	2	2
34	Sales in MWh	361	494	430	548	584	636	693	704
35	MWh sales per customer	180.7	247.0	215.0	273.8	292.1	317.9	346.3	351.9
36	Revenue (\$000s)	30	41	36	45	48	53	57	58
37	Cents per KWh	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.30
38	Total Company								
39	Customers	17,116	17,351	17,624	17,863	18,157	18,532	18,926	19,341
40	Sales in MWh	316,692	312,181	315,816	318,815	344,985	341,212	340,184	354,691
41	Revenue (\$000s)	48,847	47,756	48,071	48,722	52,106	52,068	52,295	54,320
42	Cents/KWh	15.42	15.30	15.22	15.28	15.10	15.26	15.37	15.31
43	Retail Revenues	48,847	47,756	48,071	48,722	52,106	52,068	52,295	54,320
44	YEC Revenue Shortfall (Rider J + Rider J1)	5,829	6,259	5,266	5,273	6,487	8,680	8,920	17,028
	Rider R	1,634	3,672	4,139	3,792	5,349	5,363	5,259	5,759
45	TOTAL REVENUES	56,310	57,687	57,476	57,787	63,942	66,111	66,474	77,107

ATCO Electric Yukon
Schedule of Energy Balances and Losses
(MW.h)

Line No.	Description	Actual 2013	Actual 2014	Actual 2015	Actual 2016	Actual 2017	Actual 2018	Actual 2019	Actual 2020
1	Sales and Losses								
2	Total energy sales - MWh	316,687	312,182	315,816	318,815	344,985	341,212	340,184	354,691
3	Losses and company used - MWh	20,191	19,880	19,019	17,535	18,871	19,919	18,265	19,854
4	Losses -%	6.4%	6.4%	6.0%	5.5%	5.5%	5.8%	5.4%	5.6%
5	Total generation and purchases (MWh)	<u>336,878</u>	<u>332,062</u>	<u>334,835</u>	<u>336,350</u>	<u>363,856</u>	<u>361,131</u>	<u>358,450</u>	<u>374,545</u>
6	Sources - MWh								
7	Hydro generation	3,687	10,247	9,180	8,051	7,103	5,458	4,964	5,059
8	Hydro grid standby diesel generation	3	66	41	44	91	111	185 **	346
9	Diesel generation	21,302	21,050	20,623	20,837	22,069	22,024	21,810 **	21,715
10	Purchases	<u>311,886</u>	<u>300,699</u>	<u>304,991</u>	<u>307,418</u>	<u>334,593</u>	<u>333,538</u>	<u>331,491</u>	<u>347,426</u>
11		<u>336,878</u>	<u>332,062</u>	<u>334,835</u>	<u>336,350</u>	<u>363,856</u>	<u>361,131</u>	<u>358,450</u>	<u>374,545</u>
12	Sources - %								
13	Hydro generation	1.1%	3.1%	2.8%	2.4%	2.0%	1.5%	1.4%	1.4%
14	Diesel generation	6.3%	6.3%	6.2%	6.2%	6.1%	6.1%	6.1%	5.8%
15	Purchases	<u>92.6%</u>	<u>90.6%</u>	<u>91.1%</u>	<u>91.4%</u>	<u>92.0%</u>	<u>92.4%</u>	<u>92.5%</u>	<u>92.8%</u>
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

** After further review, the 2019 hydro grid diesel generation and diesel generation MWh have been updated.

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 2020 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	2.900	1.490
SAIDI	4.790	2.520
CAIDI	1.650	1.690
IOR	99.95%	99.97%

Health, Safety and Environment Performance

ATCO Electric Yukon's 2020 Health, Safety and the Environment Performance measures as follows:

Worker Lost Time Frequency	0
Worker Lost Time Severity	0
Contractor Lost Time Incidents	0
Preventable Vehicle Incident Frequency	1.16
Number of Reportable Releases	2

Financial Performance

The table below notes a number of highlights from ATCO Electric Yukon's Approved 2016-2017 Compliance Filing as well as a number of other 2020 Financial Performance indicators.

Regulated Return on Equity (ROE)	13.19%
Net Rate Base (\$000's)	\$107,486
Average Inventory (\$000's)	\$2,565
Capital Additions (\$000's)	\$11,893
Customers per Employee	302
Sales (MW.h) per Employee	5,546
Total labour expense per Customer	\$324
Ave. Consumption per Res. Customer (MW.h)	11.47
Ave. Consumption per Comm. Customer (MW.h)	51.58