ATCO Electric
YUKON

April 29, 2022

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

Dear Ms. Lemke:

Re: ATCO Electric Yukon 2021 Key Performance Indicators

Please find attached the 2021 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.

ATCO Electric
YUKON

Report to the Yukon Utilities Board

2021

Key Performance Indicators

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ATCO Electric Yukon
2021 Generation Performance

Plant	2021	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	2,969	439,701	846,279	62.1%	52.6%	33.9%
	Unit #2	CUL547	365	4,375	904,625	1,596,875	90.1%	57.2%	49.9%
	Unit #3	CUL354	400	1,704	474,175	681,600	46.7%	70.4%	19.5%
Carmacks	Unit #1	CUL310	1,600	120	61,125	192,000	98.9%	32.2%	1.4%
Destruction Bay	Unit #1	CUL467	600	617	126,689	369,900	96.4%	34.6%	7.0%
	Unit #2	CUL592	400	5,747	1,315,972	2,298,920	74.3%	57.9%	65.6%
	Unit #3	CUL584	312	3,028	513,381	944,736	61.7%	55.0%	34.6%
Haines Junction	Unit #1	CUL416	1,750	7	6,264	12,250	96.2%	61.4%	0.1%
Old Crow	Unit #1	CUL414	600	3,356	1,149,910	2,013,600	97.1%	57.7%	38.3%
	Unit #2	CUL355	400	3,111	730,701	1,244,400	62.3%	59.4%	35.5%
	Unit #3	CUL591	680	496	211,370	337,287	15.4%	63.4%	5.7%
	Unit #4	CUL586	450	2,696	718,314	1,213,110	83.8%	59.8%	30.8%
Pelly Crossing	Unit #1	CUL375	275	21	20	5,638	98.9%	0.4%	0.2%
	Unit #2	CUL470	600	163	460	97,860	98.9%	0.5%	1.9%
	Unit #3	CUL405	300	159	210	47,580	98.9%	0.4%	1.8%
Ross River	Unit #1	CUL265	1,000	47	13,133	47,000	98.9%	28.9%	0.5%
Stewart Crossing	Unit #3	CUL186	150	1	0	150	98.9%	6.7%	0.0%
Teslin	Unit #1	CUL376	1,500	63	27,525	94,500	98.9%	29.4%	0.7%
Watson Lake	Unit #1	CUL609	1,050	4,091	2,692,800	4,295,550	72.1%	63.3%	46.7%
	Unit #2	CUL595	895	3,976	2,611,200	3,558,520	96.5%	74.2%	45.4%
	Unit #3	CUL601	1,350	5,665	4,768,000	7,647,750	97.9%	63.0%	64.7%
	Unit #4	CUL545	1,450	2,513	2,623,200	3,643,850	32.1%	72.7%	28.7%
	Unit #5	CUL466	650	270	132,000	175,500	99.0%	76.0%	3.1%
	Unit #6	CUL423	800	3,579	2,256,000	2,863,200	47.6%	79.6%	40.9%
Swift River	Unit #1	CUL596	100	2,251	62,545	225,100	99.6%	27.8%	25.7%
	Unit #2	CUL544	88	6,520	167,962	573,760	98.8%	29.3%	74.4%
Fish Lake	Unit #1	CUL542	815	8,646	6,496,316	7,046,490	99.1%	92.5%	98.7%
	Unit #2	CUL108	600	7,975	3,028,440	4,785,150	93.7%	63.3%	91.0%

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 is 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	Actual 2021
1	**Residential**									
2	Customers (average during year)	14,194	14,409	14,631	14,858	15,114	15,430	15,775	16,155	16,567
3	Sales in MWh	148,780	147,133	148,605	151,351	165,654	167,596	166,455	185,235	188,526
4	MWh sales per customer	10.5	10.2	10.2	10.2	11.0	10.9	10.6	11.5	11.38
5	Revenue ($000s)	21,070	20,629	20,839	21,452	23,262	23,491	23,506	25,960	26,443
6	Cents per KWh	14.16	14.01	14.02	14.17	14.04	14.02	14.12	14.01	14.03
7	**Commercial**									
8	Customers (average during year)	2,918	2,938	2,988	3,000	3,036	3,095	3,145	3,178	3,219
9	Sales in MWh	159,322	154,709	155,346	157,662	165,924	168,285	168,680	163,933	166,022
10	MWh sales per customer	54.6	52.7	52.0	52.6	54.6	54.4	53.6	51.6	51.57
11	Revenue ($000s)	27,305	25,509	25,534	25,798	27,102	27,353	27,589	27,110	27,170
12	Cents per KWh	16.51	16.49	16.44	16.36	16.33	16.25	16.36	16.54	16.37
13	**Street lights**									
14	Sales in MWh	3,719	3,765	3,886	3,923	3,942	3,951	3,876	3,889	3,937
15	Revenue ($000s)	961	962	992	997	1,009	1,021	1,014	1,037	1,079
16	Cents per KWh	25.84	25.54	25.52	25.42	25.59	25.85	26.17	26.66	27.41
17	**Sentinel lights**									
18	Sales in MWh	551	544	519	496	495	486	480	452	452
19	Revenue ($000s)	145	142	138	133	132	130	128	121	122
20	Cents per KWh	26.33	26.05	26.58	26.71	26.66	26.76	26.59	26.84	27.10
17	**Old Crow Solar**									
22	Sales in MWh									(211)
23	Revenue ($000s)									(143)
24	Cents per kWh									67.98
21	**Total Company - Retail - Primary**									
22	Customers	17,112	17,347	17,619	17,858	18,150	18,525	18,919	19,334	19,786
23	Sales in MWh	312,372	306,272	308,356	313,432	336,016	340,318	339,491	353,508	358,726
24	Revenue ($000s)	48,481	47,241	47,503	48,380	51,504	51,995	52,237	54,228	54,671
25	Cents/KWh	15.52	15.42	15.41	15.44	15.33	15.28	15.39	15.34	15.24
26	**Secondary Sales**									
27	Customers (average during year)	1	2	3	3	5	5	5	5	10
28	Sales in MWh	3,959	5,415	7,030	4,835	8,385	258	1	479	4,430
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	458
30	Revenue ($000s)	336	474	532	296	553	21	0	34	361
31	Cents per KWh	8.49	8.75	7.57	6.13	6.59	7.99	8.37	7.07	8.15
32	**Wholesale Sales**									
33	Customers (average during year)	2	2	2	2	2	2	2	2	2
34	Sales in MWh	361	494	430	548	584	636	693	704	487
35	MWh sales per customer	180.7	247.0	215.0	273.8	292.1	317.9	346.3	351.9	243.41
36	Revenue ($000s)	30	41	36	45	48	53	57	58	40
37	Cents per KWh	8.30	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	19,798
40	Sales in MWh	316,692	312,181	315,816	318,815	344,985	341,212	340,184	354,691	363,643
41	Revenue ($000s)	48,847	47,756	48,071	48,722	52,106	52,068	52,295	54,320	55,073
42	Cents/KWh	15.42	15.30	15.22	15.28	15.10	15.26	15.37	15.31	15.14
43	Retail Revenues	48,847	47,756	48,071	48,722	52,106	52,068	52,295	54,320	55,073
44	**YEC Revenue Shortfall (Rider J + Rider R1)**	5,829	6,259	5,266	5,273	6,487	8,680	8,920	17,028	19,529
	Rider R	1,634	3,672	4,139	3,792	5,349	5,363	5,259	5,759	6,115
45	**TOTAL REVENUES**	56,310	57,687	57,476	57,787	63,942	66,111	66,474	77,107	80,717

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

Line No.	Description	Actual 2014	Actual 2015	Actual 2016	Actual 2017	Actual 2018	Actual 2019	Actual 2020	Actual 2021
1	**Sales and Losses**								
2	Total energy sales - MWh	312,182	315,816	318,815	344,985	341,212	340,184	354,691	363,643
3	Losses and company used - MWh	19,880	19,019	17,535	18,871	19,919	18,265	19,854	21,935
4	Losses -%	6.4%	6.0%	5.5%	5.5%	5.8%	5.4%	5.6%	6.0%
5	Total generation and purchases (MWh)	332,062	334,835	336,350	363,856	361,131	358,450	374,545	385,578
6	**Sources - MWh**								
7	Hydro generation	10,247	9,180	8,051	7,103	5,458	4,964	5,059	9,843
8	Hydro grid standby diesel generation	66	41	44	91	111	185	346	212
9	Diesel generation	21,050	20,623	20,837	22,069	22,024	21,810	21,715	21,801
10	Purchases	300,699	304,991	307,418	334,593	333,538	331,491	347,426	353,722
11		332,062	334,835	336,350	363,856	361,131	358,450	374,545	385,578
12	**Sources - %**								
13	Hydro generation	3.1%	2.8%	2.4%	2.0%	1.5%	1.4%	1.4%	2.6%
14	Diesel generation	6.3%	6.2%	6.2%	6.1%	6.1%	6.1%	5.8%	5.7%
15	Purchases	90.6%	91.1%	91.4%	92.0%	92.4%	92.5%	92.8%	91.7%
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

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 tota number of customers affected by interruptions divided by the total number of customers servied.

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 2021 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	1.970	1.300
SAIDI	2.810	2.090
CAIDI	1.430	1.610
IOR	99.97%	99.98%

Health, Safety and Environment Performance

ATCO Electric Yukon's 2021 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	0
Number of Reportable Releases	3

Financial Performance

The table below notes a number of highlights from ATCO Electric Yukon's 2021 Approved 2016-2017 Compliance Filing as well as a number of other 2021 Financial Performance indicators.

Regulated Return on Equity (ROE)	12.06%
Net Rate Base ($000's)	$109,463
Average Inventory ($000's)	$2,584
Capital Additions ($000's)	$10,558
Customers per Employee	309
Sales (MW.h) per Employee	5,685
Total labour expense per Customer	$359
Ave. Consumption per Res. Customer (MW.h)	11.38
Ave. Consumption per Comm. Customer (MW.h)	51.57