YUKON ENERGY

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Our file: 2703-05-06

January 20, 2014

Yukon Utilities Board
Box 31728
Whitehorse, YT
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Attention: Mr. Bruce McLennan, Chair

Re: 2012 Yukon Energy Annual Report of Key Performance Indicators

The attached report details the key performance indicators (KPI) for Yukon Energy 2012. Comparisons, where relevant, have been made to the key performance indicators of the prior year and explanations provided for positive or negative changes.

For comparative purposes, the YEC indices are illustrated against Canadian Electricity Association averages for 2012 and 5 year averages.

If you have any questions regarding this report we would be pleased to respond.

Yours truly,

for Ed Mollard, CGA
Chief Financial Officer

YUKON ENERGY

KEY PERFORMANCE INDICATORS

YUKON ENERGY CORPORATION

2012 ANNUAL REPORT

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EXECUTIVE SUMMARY

Yukon Energy directly serves about two thousand customers at the distribution (retail) level (approximately 11% of all electrical retail customers in Yukon), most of whom live in and around Dawson City, Mayo and Faro. Indirectly, Yukon Energy also provides power to Yukon retail customers served on the inter-connected system through its wholesale sales to the Yukon Electrical Company Limited ("YECL"). During 2012 industrial sales under Rate Schedule 39 Primary Industrial included sales to the Capstone Mining Corp ("Minto mine") and Alexco Resource Corp. ("Alexco mine").

As shown in Table 1 (following page), the number of retail customers in 2012 is comparative to 2011 while total firm sales increased by 6.4% in 2012 over 2011 due to the increase in wholesales to YECL.

Hydro generation remains the predominant source of generation supplemented by diesel generation as required. The hydro generation KPIs for 2012 reflect normal operations compared to 2011 which registered lower Capacity, Availability and Operating factors due to interruptions in service caused by the Mayo B and Aishihik Third Turbine projects. Diesel generation decreased significantly compared to 2011 as diesel was not required for capital projects and winter peak generation was reduced due to increased hydro capacity and less severe weather than the prior year.

In the past three years the Yukon Energy system experienced more outages than the CEA average (5-year average SAIFI index of 7.62 compared to 2.68 for CEA); however, they were of a shorter duration (5-year average SAIDI index of 4.91 compared to 6.83 for CEA); and customers experienced a shorter overall duration without power (5-year average CAIDI index of 0.68 compared to 2.53 for CEA). The reliability index has remained higher than 99.9% (refer to Table 2.1).

During 2012 YEC experienced 1 Lost Time Injury of 2 days duration after 2 years with no Lost Time injuries. The Financial indicators reflect a lower average unit energy cost of 5.79 cents/kWh generated compared to 6.20 cents/kWh in 2011 due to reduced diesel generation as there were fewer capital projects and a milder winter during 2012.

Table 1: Summary of Customers, Energy Sales and Generation

Line No.	Description		2009 Actual	2010 Actual	2011 Actual	2012 Actual
	Residential					
1	Customers		1,457	1,472	1,515	1,526
2	Sales in MWh		11,676	11,386	12,710	13,102
3	MWh sales per customer		8.0	7.7	8.4	8.1
	General Service					
4	Customers		442	455	464	460
5	Sales in MWh		19,672	22,719	21,305	22,432
6	MWh sales per customer		44.5	50.0	45.9	47.1
	Industrial					
7	Sales in MWh		29,355	30,255	43,259	44,030
	Street lights					
8	Sales in MWh		280	283	283	283
	Space lights					
9	Sales in MWh		14	14	14	14
	Total - Firm Retail & Ind.					
10	Customers		1,899	1,927	1,979	1,986
11	Sales in MWh		60,997	64,658	77,571	79,861
	Wholesale sales					
12	Sales in MWh		267,229	276,345	290,541	310,264
	Total - Firm					
13	Sales in MWh		328,227	341,003	368,112	390,125
	Secondary					
14	Sales in MWh		17,384	10,489	552	1,993
	Total					
15	Sales in MWh		345,611	351,492	368,665	392,118
16	Losses - MWh		28,235	30,764	32,101	34,588
17	Losses - %		8.2%	8.8%	8.7%	8.8%
18	Total Generation		373,846	382,255	400,766	426,706
	Source					
19	Hydro Generation		370,962	377,044	384,429	423,206
20		*% of total*	*99.2%*	*98.6%*	*95.9%*	*99.2%*
21	Diesel Generation		2,645	5,127	15,935	3,055
22		*% of total*	*0.7%*	*1.3%*	*4.0%*	*0.7%*
23	Wind Generation		238	85	402	445
24		*% of total*	*0.1%*	*0.0%*	*0.1%*	*0.1%*

1.0 GENERATION KPIs

Operational Performance Indicators

The operational performance of generation units is gauged on the basis of Capacity Factor, Unit Availability Operating Factor and Forced and Planned Outage Rate.

Detailed definitions are as provided below:

- ***Capacity Factor*** – Defined as the actual energy produced by the generators, divided by the maximum possible energy production in a year. This indicator ignores the fact that there may not be sufficient fuel (e.g., water or wind) to run the generation unit at its maximum for 365 days. It is useful as an indication of the utilization of the generators as useful assets, especially in terms of providing energy (kWh's). The higher the percentage the more the units are being run at closer to their maximum capacity.

- ***Unit Availability*** – Defined as the actual number of hours the generators were available for use in the year, divided by the total number of hours in the years (8,760 except in a leap year). This number, expressed as a percentage, is useful in monitoring the overall reliability of the generators but does not consider whether the units were available when they were needed the most, (i.e., hydro in the summer and diesel in the winter).

- ***Operating Factor*** – Defined as the hours that the generators were on-line and generating power, divided by the total number of hours in the year. It is useful in assessing the value of the generation required on the grid.

- ***Forced Outage*** – Defined as the occurrence of a component failure or other condition which requires that the generation unit be removed from service immediately or up to and including the very next weekend. It represents the percentage of time that a unit is not available for operation due to an unscheduled removal from service.

- ***Planned Outage*** – Defined as the removal of a generating unit from service for inspection and/or general overhaul usually scheduled well in advance. It is the overall percentage of hours less Unit Availability and Forced Outages rates.

The graphs and tables on the pages following provide the Capacity Factor, Unit Availability, Operating Factor, and Forced & Planned Outage rates for Yukon Energy owned hydro and diesel generators.

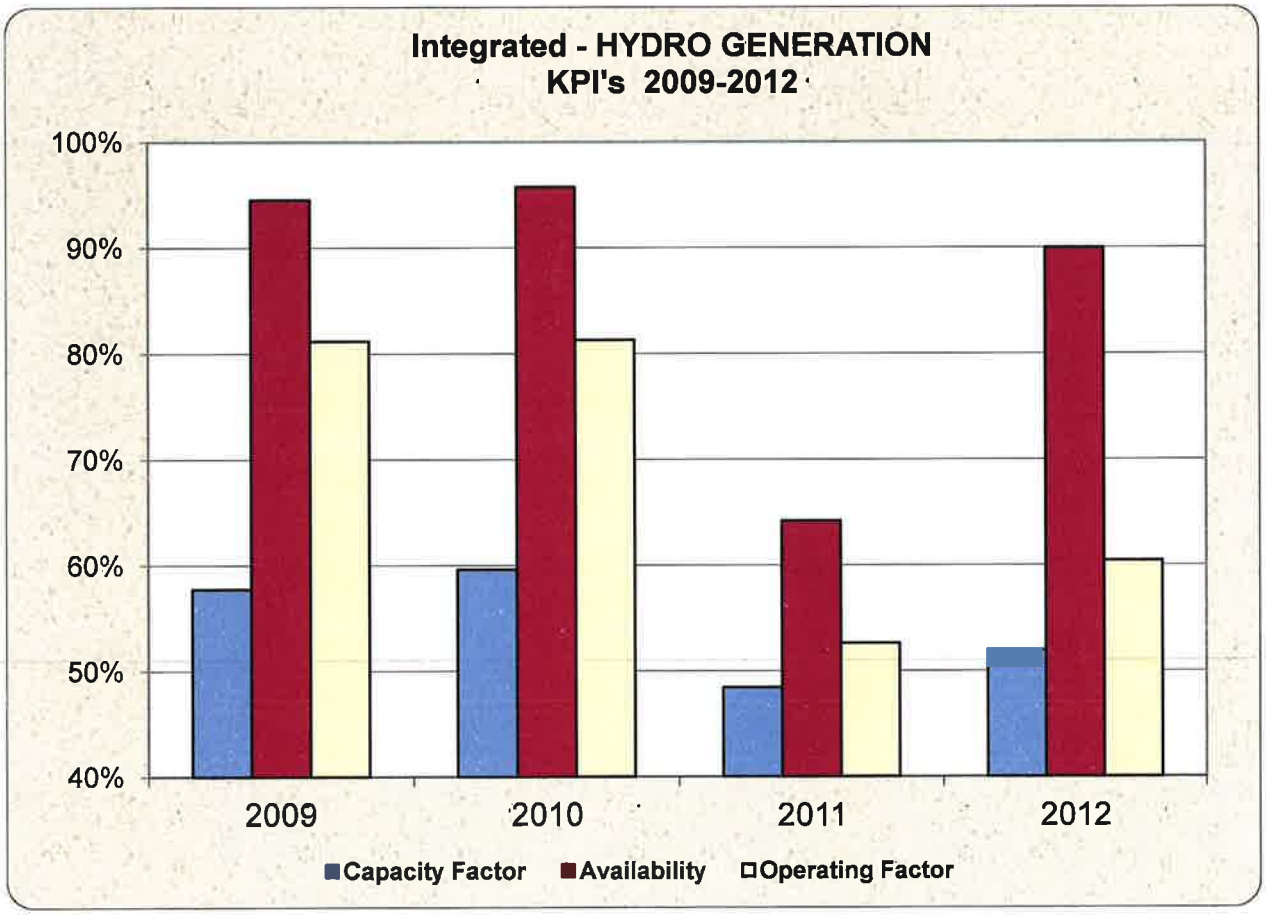
A Summary of Results for Hydro Generation KPI's

A summary of Hydro generation KPIs is provided in Table 1-1 and Figure 1-1 below:

Table 1-1: Hydro Generation KPI's

Year	Capacity Factor	Unit Availability	Operating Factor	Forced Outage Rate	Planned Outage Rate
2009	57.74%	94.54%	81.20%	0.45%	5.01%
2010	59.60%	95.73%	81.30%	0.38%	3.89%
2011	48.42%	64.19%	52.62%	0.22%	35.59%
2012	51.94%	89.99%	60.42%	0.99%	9.02%

Figure 1-1: Hydro Generation KPIs



The hydro generation KPIs for 2009 and 2010 reflect normal operation of the units with minimal capital project impact. The 2011 results were affected by the Mayo B and Aishihik Third Turbine projects which required extended plant outages resulting in lower Unit Availability and a decreased Operating Factor as the units could not be run for as long of duration as in the two prior years.

The Capacity Factor for 2012 is higher than 2011 but lower than 2009 and 2010 due to increased capacity from the newly installed hydro generating units that went into service in late 2011 (7 MW new turbine at Aishihik and two 5 MW hydro turbines at Mayo B). This results in a reduction in Capacity Factor in the near term as less of the total capacity is utilized to generate the required amount of electricity. Unit Availability was lowered in 2012 due to capital projects during summer 2012 at both the Aishihik[1] and Mayo hydro facilities[2]. A lower Operating Factor is as expected as the Mayo B hydro units require fewer operating hours to generate the same amount of electricity as Mayo A. The hydro Capacity and Operating Factors will rise with future growth on the integrated grid.

Summary of Results for Diesel Generation KPIs

A summary of diesel generation KPIs is provided in Table 1-2 below:

Table 1-2: Diesel Generation KPI's

Year	Capacity Factor	Unit Availability	Operating Factor	Forced Outage Rate	Planned Outage Rate
2009	0.84%	89.53%	1.21%	4.79%	5.68%
2010	2.13%	89.88%	3.01%	0.85%	9.27%
2011	6.15%	95.84%	8.71%	3.07%	1.09%
2012	0.78%	90.04%	1.00%	2.05%	7.91%

The Capacity Factor for diesel generation remains low as it continues to fulfill the role of back-up generation. During 2011, it increased significantly as diesel generation was required while the Aishihik and Mayo hydro facilities out of service to construct the two new hydro projects and the inter-connection of the WAF and MD grids. The 2012 Capacity Factor was lower than 2009 & 2010 as less peaking diesel was required for winter months.

[1] Required work at Aishihik generation plant is for scheduled 10 yr overhauls of AH1 and AH2 which may make each unit unavailable for up to 8 weeks during summer 2012 & 2013

[2] Mayo intake gate is work took place in summer 2012 for approximately 6 weeks

The lower Unit Availability rates in 2009 and 2010 reflect the rebuild of diesel units in Faro and Whitehorse which rendered units unavailable for extended periods of time. The lower Unit Availability rate for 2012 was due to planned work on DD5 and a Forced Outage on FD5.

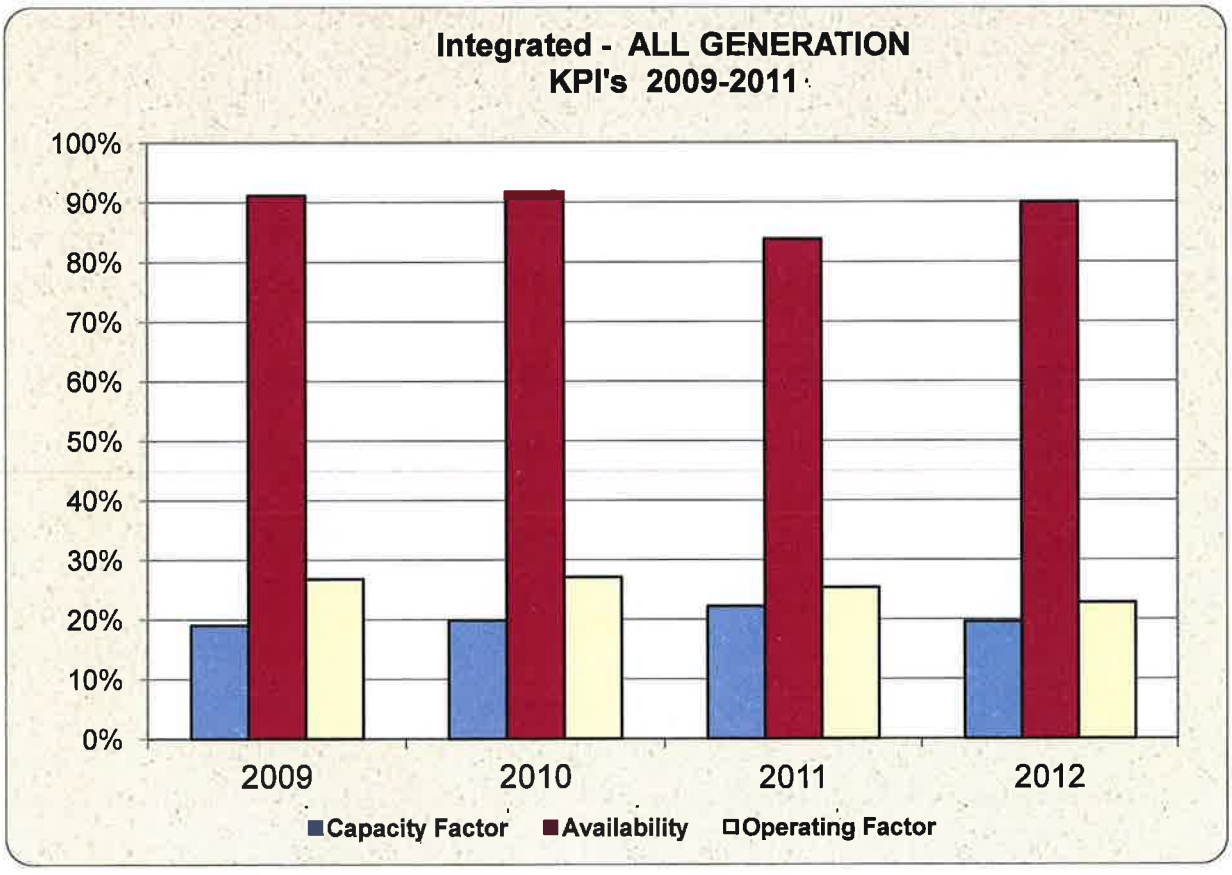
The Operating Factor is higher in 2011 when compared to 2009 and 2010 as diesel units ran for more hours due to hydro units not being available during the construction phase of the Aishihik Third Turbine and Mayo Hydro Enhancement (Mayo B) projects. The lower Operating Factor for 2012 reflects less peak diesel generation during winter months.

The only performance indicator determined for the wind turbines is Capacity Factor. The two wind turbines combined to produce a net Capacity Factor of 3.36% in 2009; 1.19% in 2010 and 5.67% in 2011. During 2012 only the Vestas turbine delivered energy at a capacity rate of 7.70%.

Summary of Results for All Generation KPIs

A summary of all general KPIs for the period from 2009 to 2012 Actual is provided in Figure 1-2 below:

Figure 1-2: All Generation KPIs: 2009 to 2012



As observed in the hydro KPIs, the overall Unit Availability dips in 2011 due to reduced availability of hydro units during the Mayo B and Aishihik Third Turbine construction projects. During 2012 Unit Availability returned closer to historical norms approaching +95% as capital programs did not affect Unit Availability as it did during 2009 through 2011.

Table 1-3: Forced Outages

Forced Outage Rates by Generation				
	2009	2010	2011	2012
Hydro	0.45%	0.38%	0.22%	0.99%
Diesel	4.79%	0.85%	3.07%	2.05%
Combined	3.40%	7.10%	1.99%	1.66%

Forced Outages for hydro generation during 2009 through 2012 were the result of various minor occurrences all with short duration. Notable Diesel Forced Outages were a failed exciter unit and post overhaul issues on WD3 in 2009; a failed breaker on FD5; a valve failure on WD6 in 2011; and breaker issues on FD5 in 2012.

2.0 DISTRIBUTION KPIs

The reliability indices on the following pages report distribution performance for Yukon Energy service areas and include all outages of any duration that affect greater than 50 customers, a complete YEC or YECL service area or result in an interruption in service to an industrial customer.

Reliability Performance Indicators

Reliability of the distribution system is assessed based on the following indicators that define distribution performance:

- ***System Average Interruption Frequency Index (SAIFI)*** - SAIFI is the average number of interruptions per customer for the period (a year in this case). It is a measure of how many outages an "average" customer experienced throughout the year. SAIFI is calculated by taking the total number of customer interruptions divided by the total number of customers served.

- ***System Average Interruption Duration Index (SAIDI)*** - SAIDI is the system average interruption duration for customers served for the period (a year in this case). It is a measure of how long all customers were affected (i.e., the last customer to be restored power). SAIDI

is calculated by totalling the customer hour interruptions and dividing by the total number of customers served.

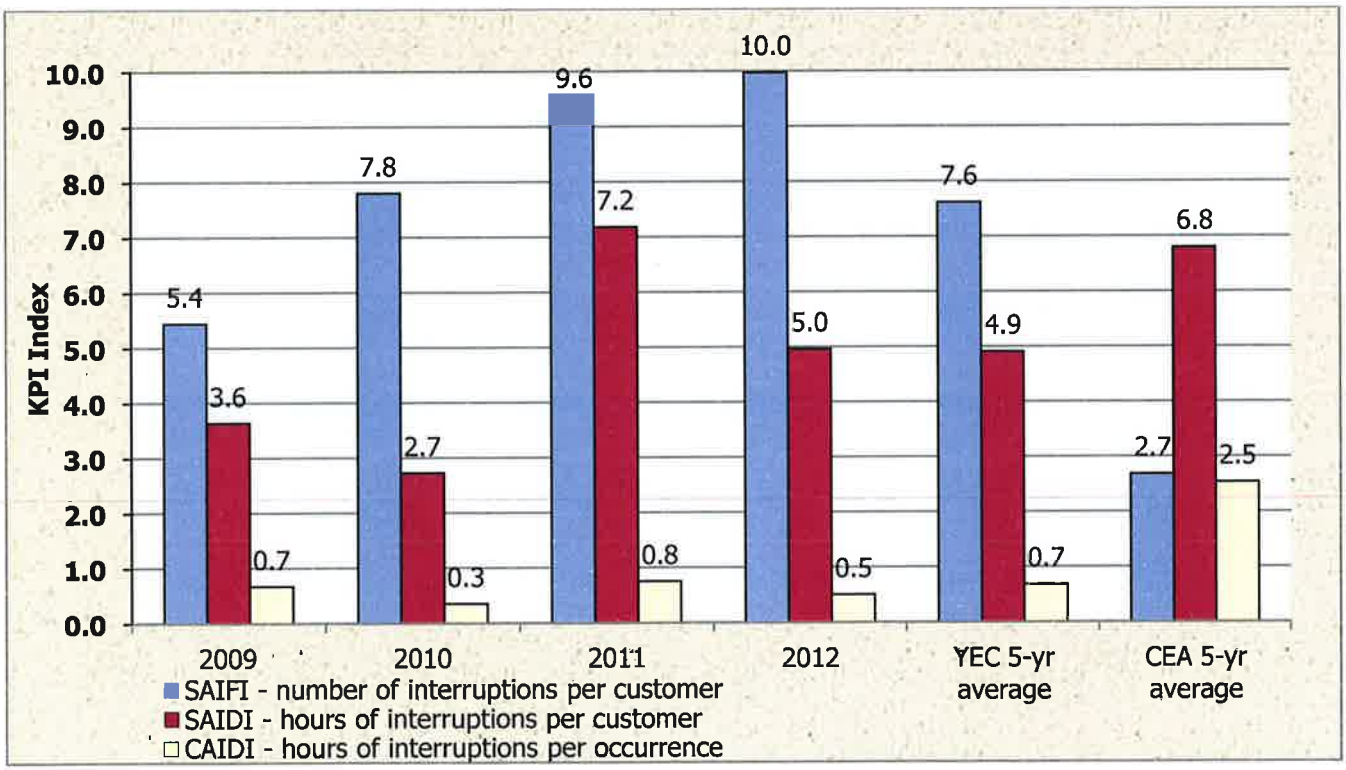
- ***Customer Average Interruption Duration Index (CAIDI)*** - CAIDI is the average customer interruption duration for customers interrupted. It is a measure of how long the "average" outage lasted for the customers affected. CAIDI is the total number of customer hour interruptions divided by the total number of customer interruptions.

- ***Index of Reliability (IOR)*** - IOR is the annual customer-hours that service is available measured as a percentage. It is determined by (8,760 hours/year – SAIDI) divided by 8,760 hours/year.

Summary of Results for Distribution KPIs

Figure 2-1 illustrates the reliability indicators using YEC data for 2009 through 2012 along with a 5-year average for YEC compared to the most current 5-year CEA average[3].

Figure 2-1: Yukon Energy Distribution KPIs: 2009 to 2012



[3] The Canadian Electrical Association (CEA) compiles data from member utilities across the country which differentiates urban utilities (Region 1) from urban/rural (Region 2) utilities. For comparative purposes, Yukon Energy is more similar to Region 2 utilities. 5-year CEA averages are calculated based on 2008-2012 numbers.

The SAIFI index is consistent with a year by year increase in outages. Refer to the Classification of Distribution Outages section (below) for analysis and comment regarding causation of outages. As a small grid, YEC typically experiences a higher frequency rate than the CEA index. Some of the increased frequency is attributable to the YEC reporting standard of including all outages that affect a whole YEC service area or a YECL community receiving power from YEC or an industrial customer even though there may be fewer than 50 customers affected by the outage.

The SAIDI index is a function of the duration of the outages. The nature of the outage often affects the duration. For example, outage incidents caused by trees, lightning or snow affecting transmission lines contribute most to the customer hour interruptions because they affect a larger segment of the grid than other types of smaller more localized outages. Typically YEC customers experience fewer customer hour interruptions than the CEA average. This is due to having diesel back-up in communities which is readily available when an outage occurs that impacts the transmission infrastructure.

The CAIDI Index is lower than the CEA average which reflects YEC's ability to restore power on its grid more quickly than southern grids resulting in shorter outage durations being experienced by its customers.

IOR is the annual customer-hours that service is available measured as a percentage. It is determined by (8,760 hours/year – SAIDI) divided by 8,760 hours/year. On a year-to-year and 5-year comparison basis YEC is equal to or higher than the CEA reporting utilities.

Table 2-1: Index of Reliability

Index Of Reliability					
2009	2010	2011	2012	YEC 5 yr	CEA 5 Yr
99.96%	99.97%	99.92%	99.94%	99.94%	99.92%

Classification of Distribution Outages

Yukon Energy classifies the primary cause of its customer interruptions to match the following CEA classification codes and descriptions:

0 – Unknown/Other - Customer interruptions with no apparent cause or reason which could have contributed to the outage.

1 - Scheduled Outage - Customer interruptions due to the disconnection at a selected time for the purpose of construction or preventive maintenance.

2 – Loss of Supply - Customer interruptions due to problems in the bulk electricity supply system such as under frequency load shedding, transmission system transients, or system frequency excursions. During a rotating load shedding cycle, the duration is the total outage time until normal operating conditions resume, while the number of customers affected is the average number of customers interrupted per rotating cycle.

3 – Tree Contacts - Customer interruptions caused by faults due to trees or tree limbs contacting energized circuits.

4 – Lightning - Customer interruptions due to lightning striking the Electrical System, resulting in an insulation breakdown and/or flashover.

5 – Defective Equipment - Customer interruptions resulting from equipment failure due to deterioration from age, incorrect maintenance, or imminent failures detected by maintenance.

6 – Adverse Weather - Customer interruptions resulting from rain, ice storms, snow, winds, extreme ambient temperatures, freezing fog, or frost and other extreme conditions.

7 – Adverse Environment - Customer interruptions due to equipment being subjected to abnormal environment such as salt spray, industrial contamination, humidity, corrosion, vibration, fire or flooding.

8 – Human Element - Customer interruptions due to the interface of the utility staff with the system such as incorrect records, incorrect use of equipment, incorrect construction or

installation, incorrect protection settings, switching errors, commissioning errors, deliberate damage.

9 – Foreign Interference - Customer interruptions beyond the control of the utility such as birds, animals, vehicles, dig-ins, vandalism, sabotage (by others) and foreign objects.

Yukon Energy reports all outages of any duration that affects greater than 50 customers or a complete YEC or YECL service area or results in an interruption in service to an industrial customer. Table 2-2 lists the number and causes of interruptions from 2009 to 2012.

Table 2-2: Cause of Interruption: 2009 to 2012

Cause of Interruption	2009	2010	2011	2012
Unknown	3	4	6	3
Scheduled	-	2	3	15
Loss of Supply	7	3	6	4
Tree Contact	4	4	3	6
Lightning	8	5	7	0
Defective Equipment	2	3	6	12
Weather	6	9	12	16
Human Element	5	12	7	1
Foreign Interference	5	4	4	3
Total	40	46	54	60

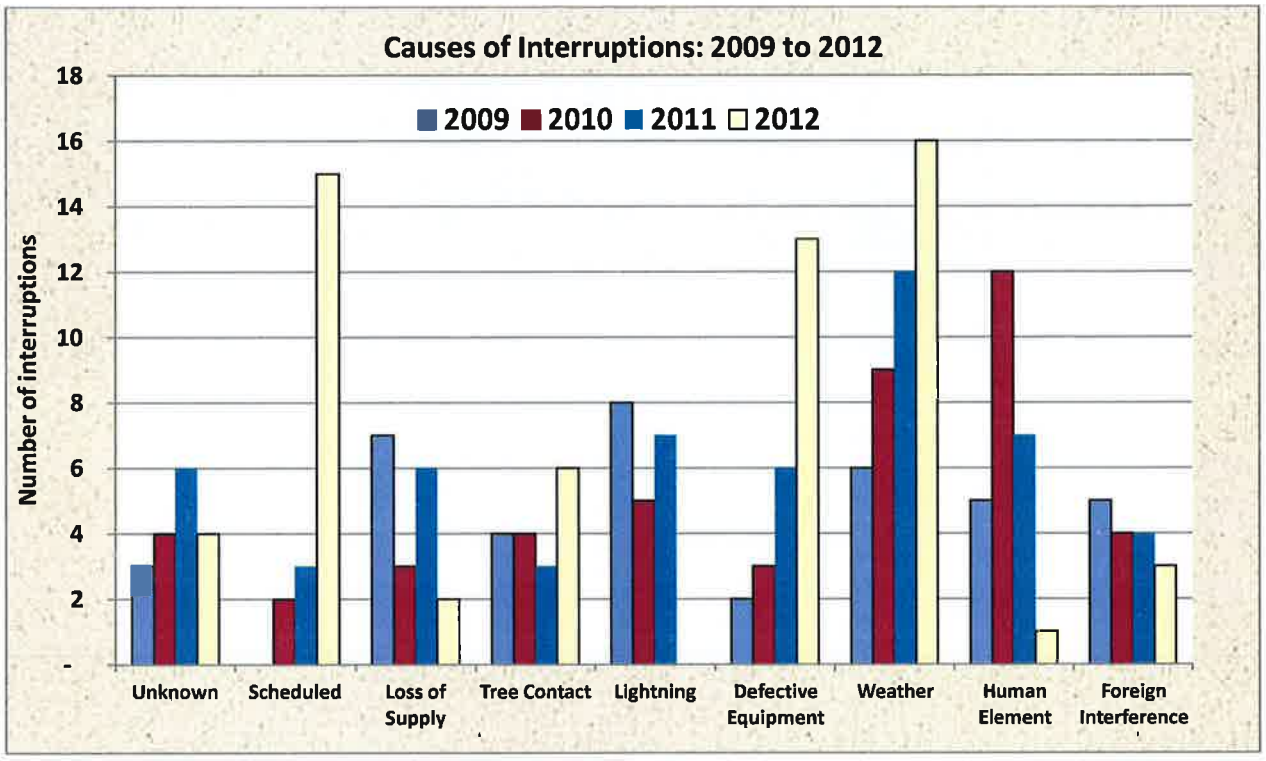
During 2012 there were 43 outages related to transmission lines and equipment. Scheduled & Defective Equipment accounted for 18 outages associated with transmission line maintenance activities. 22 outages were due to Tree Contacts and Weather (snow). There was 1 Unknown (protection settings suspected) and 2 Loss of Supply-Transmission (blown transformer and cross-arm failure).

Of the 15 outages that occurred on distribution, 8 were for Defective Equipment (includes 4 YECL equipment failures affecting only YECL customers); 3 Foreign Interference contacts; 2 Unkown and 1 Scheduled and 1 Human Element.

There were 2 Loss of Supply-Generation outages (WH4 unstable and AH1 tripped by faulty temperature switch).

Figure 2-2 (following page) illustrates the number of interruptions by cause from 2009 to 2012.

Figure 2-2: Causes of Interruptions: 2009 to 2012



Unknown, Scheduled, Tree Contacts, Lightning, Weather and Foreign Interference contribute towards the majority of outages each year and are usually attributable to events beyond the immediate control of the utility.

Loss of Supply, Defective Equipment and Human Element are categories where the YEC strives to reduce outages through preventative maintenance and training activities. For example, much of the spike in Human Element occurrences in 2010 was due to an incident where multiple attempts to reclose a switch resulted in a series of short outages on the same day – with each attempt recorded as an interruption in service. Training and improved procedures can reduce occurrences of this type of outage. In 2012 Defective Equipment includes 7 incidents where a back-up generator quit serving a service area during transmission line maintenance activities. These were short outages each affecting a small pocket of customers.

Environmental Performance

As part of its Environmental Management System, YEC reports all spill incidents greater than 5 litres. There were no incidents to report for 2012.

Health and Safety Performance

The following definitions are used in describing Health and Safety Performance. All the definitions are based on the exposure hours or hours worked adjusted to a 100 employee company that averages 200,000 person-hours of work per year with a vehicle fleet that averages 1,000,000 km per year.

In 2012 there were 93 employees or full time equivalents at Yukon Energy and the vehicle fleet mileage was 858,745 km.

All Injury is any work related injury or illness suffered by an employee. An injury is work related if any event or exposure in the work environment either caused or contributed to the resulting condition or aggravated a pre-existing condition. It is based on the total number of disabling injuries combined with the total number of medical aid injuries.

$$\text{All Injury Frequency Rate} = \frac{(\#\text{ of Disabling Injuries} + \#\text{ of Medical Aid Injuries}) \times 200{,}000}{\text{Exposure Hours (Hours Worked)}}$$

Disabling Injury (Lost Time Injury) is a work injury that results in a fatality, permanent total disability, permanent partial disability, or temporary total disability. In the case of temporary partial disability, a day of disability is any day on which an employee is unable, because of injury and with medical authorization, to perform effectively through a full shift. The day on which the injury occurs is not counted as a day of disability.

$$\text{Lost Time Injury Frequency} = \frac{(\#\text{ of Lost Time Injuries/Illnesses}) \times 200{,}000}{\text{Exposure Hours (Hours Worked)}}$$

Medical Aid injury is a classification for any medical care or treatment beyond first aid but does not include a Disabling Injury as defined above.

Severity Rate is calculated by combining the calendar days of disability lost and days charged for fatalities and permanent (total and partial) disabilities.

$$\text{Lost Time Injury Severity Rate} = \frac{(\#\text{ of Calendar Days Lost} + \#\text{ of Scheduled Days Charged}) \times 200{,}000}{\text{Exposure Hours (Hours Worked)}}$$

Recordable Motor Vehicle Accident is any occurrence involving a company vehicle or vehicles which results in death, injury or property damage, unless such vehicle is properly parked or is being positioned in an area not designated or used for regular vehicular traffic.

$$\text{Motor Vehicle Incident Freq Rate} = \frac{\text{Number of Recordable Accidents x 1,000,000}}{\text{Kilometers driven}}$$

The table below is a record of Yukon Energy's safety performance in for 2010 through 2012 according to the CEA accident definitions and comparing them against the CEA utility statistics from the 2012 CEA Group III – Under 300 Employees category.

CATEGORY	2010	2011	2012	CEA
All Injury/Illness Frequency Rate	4.03	1.26	2.64	2.36
Lost Time Injury Frequency Rate	0.00	0.00	1.32	.99
Lost Time Injury Severity Rate	0.00	0.00	2.64	5.58
Motor Vehicle Incident Frequency Rate	1.06	3.13	0.00	.52

During 2012 there were 2 injuries: 1 Medical/First Aid Injury and 1 Lost Time Injury resulting in 2 days of Lost Time. This results in an All-Injury Rate of 2.64. The Lost Time Injury and Frequency rates reflect the single injury lost time of 2 days of work. There were no Lost Time injuries to report for 2010 or 2011.

The CEA criteria defines a vehicle incident as "any incident involving a motor vehicle being operated by an employee that would meet the Recordable Injury criteria or costing more than $1,000 in total property damage." Applying this CEA criteria to the 4 motor vehicle incidents in 2012 results in a Motor Vehicle Incident Frequency Rate of 0.00 compared to 6 incidents in 2011 resulting in a Motor Vehicle Incident Frequency Rate of 3.13.

Financial and Cost-Efficiency Performance

The following table lists the common utility financial performance indicators that measure the financial health of the utility and the cost-effectiveness of its operations.

MEASURE	2010	2011	2012
Regulated Return on Equity (ROE)	7.45%	6.58%	6.75%
Cents per kWh Generated (avg unit energy cost)	5.27	6.20	5.79
Total System Losses (as % of sales)	8.75%	8.71%	8.82%
Customers per Employee	21.45	21.25	21.33
Total MWh Sales per Employee	3,994	4,051	4,216
Non-Industrial Sales per Employee	3,650	3,576	3,743
Avg Consumption per Residential Customer (MWh/yr)	7.73	8.39	8.57
Avg Consumption per Commercial Customer (MWh/yr)	49.98	45.92	48.38
Total Labour dollars per Customer *	$644	$701	$684
O&M Labour Dollars per Customer	$466	$498	$536
Total Labour Dollars per MWh Generation	$27.94	$29.39	$28.02
O&M Labour Dollars per MWh Generation	$20.20	$20.88	$21.95

* Total labour costs include YEC staff time spent on Capital Work. The number of customers includes all customers served directly and indirectly. Indirect customers are the customers YECL serves that are on the integrated grid.

Cents per KWh Generated was lower in 2012 due to less diesel generation than 2011 resulting in lower fuel, wages and maintenance costs.

Average Consumption per Residential Customer appears higher in 2012 and 2011 due to a temperate winter in 2010.

Average Consumption per Commercial Customer is higher in 2012 due to Dawson City and Mayo regions having a more active year and Faro mine site water treatment activities. The 2010 average was higher due to Alexco being a General Service customer while bringing the Bel Keno mine into production.

Labour Dollars per Customer/MWh reflect the increased costs of a higher employee compliment compared to a relatively static customer/sales base.