KEY PERFORMANCE INDICATORS

YUKON ENERGY CORPORATION

2014 ANNUAL REPORT

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Yukon Energy directly serves approximately 2,000 customers (approximately 10% of all electrical customers in Yukon) at the distribution (retail) level, most of whom live in Dawson City, Mayo and Faro. Yukon Energy, through its Wholesale sales to ATCO Electric Yukon ("AEY"), also provides power indirectly to approximately 16,000 retail customers served on the inter-connected system.

During 2014 the only customer served under Rate Schedule 39 Primary Industrial was Capstone Mining Corp ("Minto mine") which operated for the whole year. As shown in Table 1 (following page), the number of retail customers in 2014 is comparative to 2013, while total Firm sales decreased by 4.2% in 2014 compared to 2013 due to Industrial sales to Minto mine being 10.4% lower and Wholesale sales to AEY being 4.1% lower.

Hydro generation remains the predominant source of generation supplemented by diesel generation as required. The hydro generation KPIs for 2014 reflect a normalization of operations compared to 2011 and 2012 when construction projects were in progress; diesel generation was reduced from prior years as not as much diesel was required for capital projects and winter peak generation was reduced due to the increased hydro capacity available from the Mayo B and AH3 projects completed in prior years.

As is typical, the Yukon Energy system experienced more outages than the CEA average (5-year average SAIFI index of 8.60 compared to 2.79 for CEA); however, they were of a shorter duration (5-year average SAIDI index of 4.44 compared to 7.55 for CEA); and customers experienced a shorter overall duration without power (5-year average CAIDI index of 0.50 compared to 2.71 for CEA).

During 2014, YEC experienced 1 Lost Time Injury of 1 day duration, compared to 1 Lost Time Injury of 20 days duration in 2013, and 1 Lost Time Injury of 2 days duration in 2012, and none in 2011 or 2010.

The Financial indicators reflect higher average costs due to relatively static annual costs being distributed over a lower sales base than the prior year.

Table 1: Summary of Customers, Energy Sales and Generation

Line No.		Description		2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual
		Residential						
1		Customers		1,472	1,515	1,529	1,559	1,561
2		Sales in MWh		11,398	12,834	13,289	13,593	13,201
3		MWh sales per customer		7.7	8.5	8.7	8.7	8.5
		General Service						
4		Customers		455	464	464	470	475
5		Sales in MWh		22,570	21,538	22,446	22,301	23,415
6		MWh sales per customer		49.6	46.4	48.4	47.4	49.3
		Industrial						
7		Sales in MWh		30,255	43,259	44,030	40,513	36,302
		Street lights						
8		Sales in MWh		283	283	283	283	287
		Space lights						
9		Sales in MWh		14	14	14	14	14
		Total - Firm Retail & Ind.						
10		Customers		1,927	1,979	1,992	2,029	2,036
11		Sales in MWh		64,520	77,927	80,062	76,704	73,219
		Wholesale sales						
12		Sales in MWh		276,345	290,541	310,264	307,927	295,284
		Total - Firm						
13		Sales in MWh		340,864	368,469	390,325	384,631	368,503
		Secondary						
14		Sales in MWh		10,489	552	1,993	3,959	5,415
		Total						
15		Sales in MWh		351,353	369,021	392,318	388,590	373,918
16		Losses – MWh		30,902	31,745	34,388	34,850	28,405
17		Losses - %		8.8%	8.7%	8.8%	9.0%	7.6%
18		Total Generation		382,255	400,766	426,706	423,440	402,323
		Source						
19		Hydro Generation		377,044	384,429	423,206	421,253	400,421
20		*% of total*		*98.6%*	*95.9%*	*99.2%*	*99.484%*	*99.5%*
21		Diesel Generation		5,127	15,935	3,055	1,910	1,566
22		*% of total*		*1.3%*	*4.0%*	*0.7%*	*0.451%*	*0.4%*
23		Wind Generation		85	402	445	277	337
24		*% of total*		*0.0%*	*0.1%*	*0.1%*	*0.065%*	*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 Rates.

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.

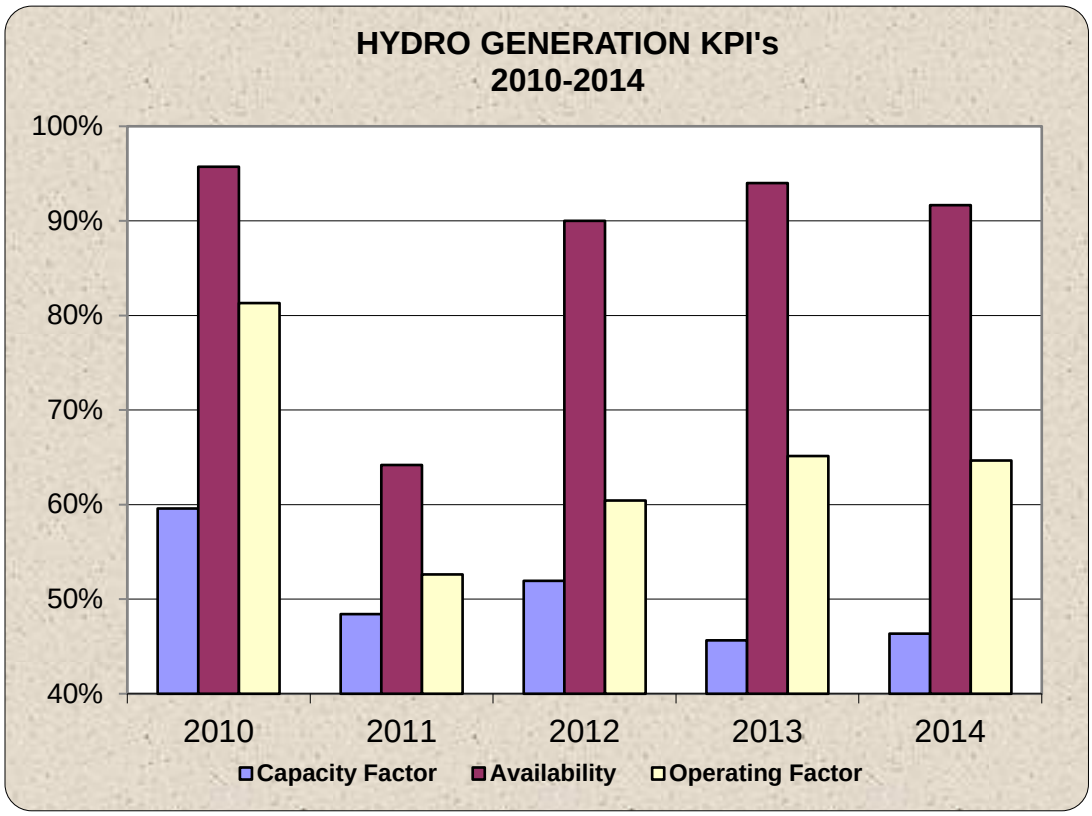
Summary of Results for Hydro Generation KPIs

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
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%
2013	45.66%	93.99%	65.12%	0.26%	5.75%
2014	46.37%	91.65%	64.67%	1.10%	7.25%

Figure 1-1: Hydro Generation KPIs



The hydro generation KPI results for 2010 characterize normal operation of units with minimal capital project impact. The 2011 KPI results were significantly affected by the Mayo B and Aishihik Third Turbine projects which required extended plant outages thereby reducing the Capacity Factor, Unit Availability and Operating Factor as the units were not run for as long of duration during the year. The Capacity and

Operating Factors for 2012 through 2014 are lower than 2010 values due to the increased capacity from the newly installed hydro generation units that went into service in late 2011 (7 MW turbine at Aishihik and two 5 MW hydro turbines at Mayo B). The additional units affect the Capacity and Operating Factors because less of the total hydro capacity is utilized to generate the same required amount of electricity.

The Forced Outage Rates for 2010 through 2014 reflect multiple minor incidents all of relatively short duration; there was no event which incapacitated any unit for an extended period of time. The higher Planned Outage Rate in 2011 is due to hydro units being out of service during the installation of new units. The Planned Outage Rates for 2012 through 2014 are due to annual planned maintenance programs and unit overhauls.

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
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%
2013	0.50%	93.21%	0.95%	1.41%	5.38%
2014	0.45%	93.29%	1.06%	1.06%	5.65%

Diesel generation remains minimal as it continues to fulfill the role of back-up generation. The 2014 Capacity Factor and Operating Factor were low as there were fewer capital projects causing diesel generation than in prior years and less peaking diesel was required during winter months due to the increased hydro capacity on the inter-connected grid. The Unit Availability rate in 2014 was reduced by planned work on WD3 and DD3; and a forced outage due to a water leak on WD2 from 2013 which carried over into 2014 then became a Maintenance Outage when additional parts proved difficult to procure.

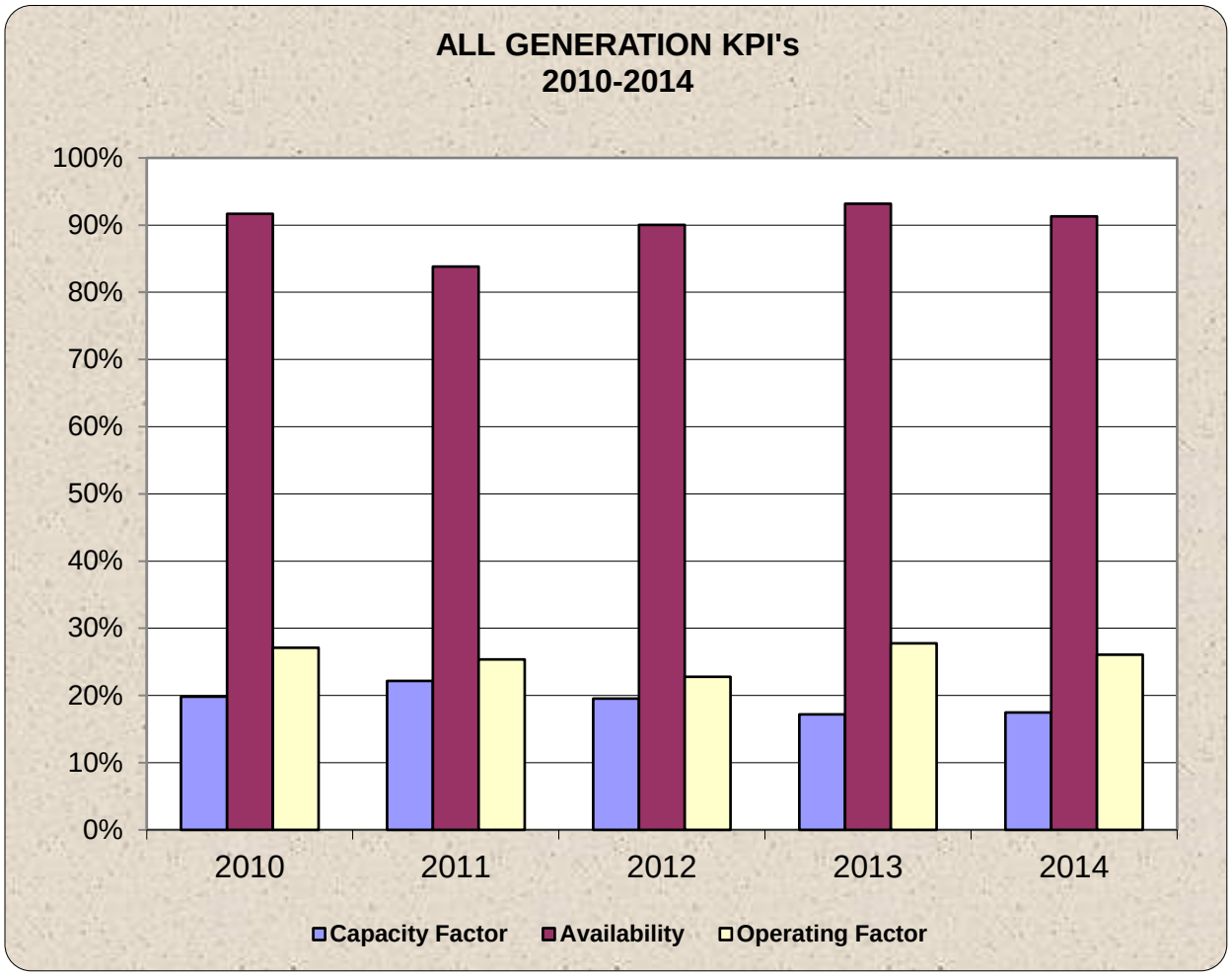
Wind Turbine

During 2014 the Vestus wind turbine achieved a Capacity Factor of 5.83% on a Unit Availability rate of 51.01%. The unit was in Forced Outage status for 48.99% of the year due to a hole in one blade that was identified in spring but not fixed until late summer (134 days) and due to icing conditions (50 days).

Summary of Results for All Generation KPIs

A summary of all generation KPIs for the period from 2010 to 2014 is provided in Figure 1-2 below:

Figure 1-2: All Generation KPIs: 2010 to 2014



As mentioned in the Hydro KPIs section, 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 through 2014 Unit Availability returns closer to historical norms of +90% as capital programs have less of an impact that in 2011. The combined (hydro + diesel) Forced Outage rate for 2014 was 1.08% and the Planned Outage Rate was 6.25%.

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 AEY 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.

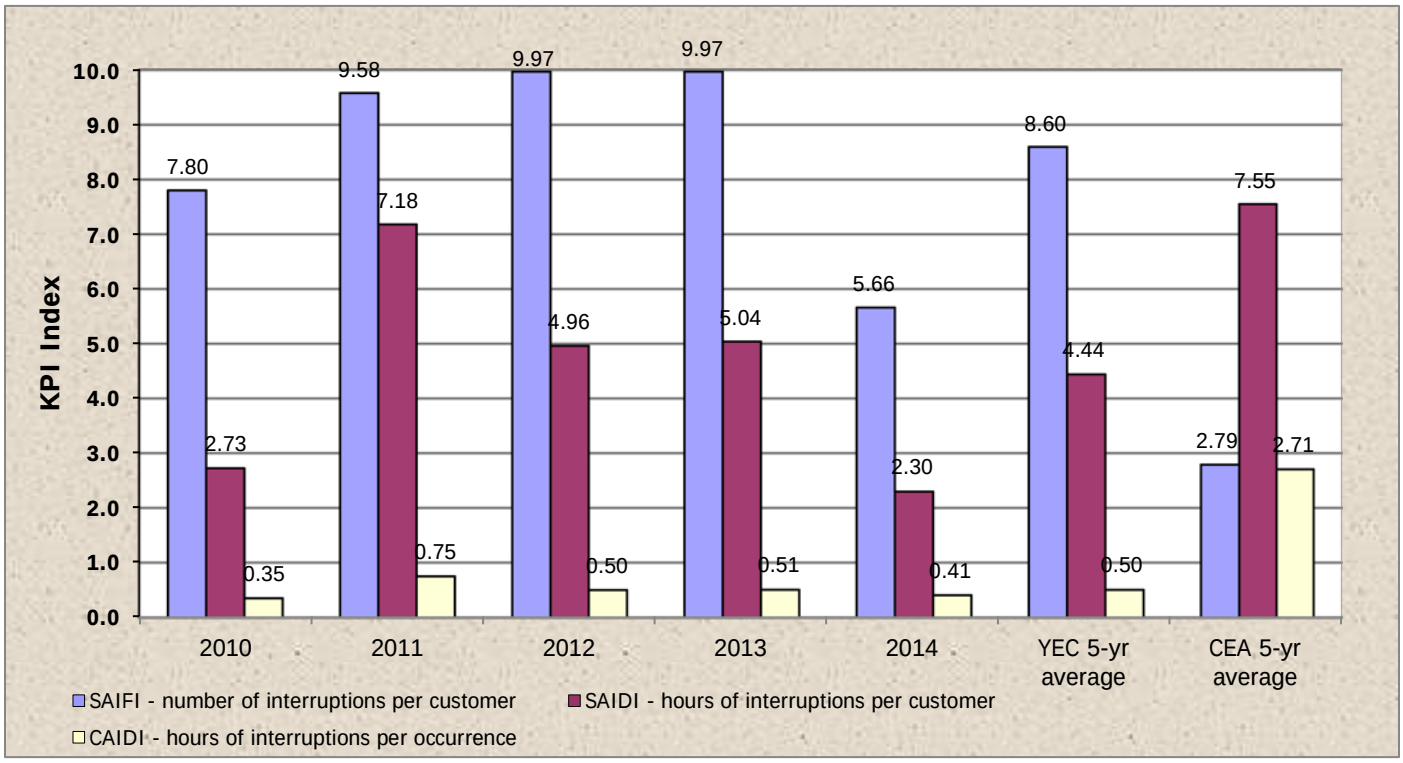
- ***Customer Average Interruption Duration Index (CAIDI) -*** CAIDI is the average customer interruption duration for customers interrupted. It is a measure of how long the "average" outage lasted for the customers affected. CAIDI is the total number of customer hour interruptions divided by the total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

Summary of Results for Distribution KPIs

Figure 2-1 (following page) illustrates the reliability indicators using YEC data for 2010 through 2014 along with a 5-year average for YEC compared to the most current 5-year CEA average[1].

[1] 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 2010-2014 numbers.

Figure 2-1: Yukon Energy Distribution KPIs: 2010 to 2014



The SAIFI index is a function of the number of outages that occur on the system each year. 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. Part of this increased frequency is due to the YEC reporting standard which includes any outage that affects a whole YEC service area, or a AEY 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 an 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 indicates the average duration of outages experienced by customers. It is typically 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.

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.

YEC Outages for 2014

Yukon Energy reports all outages of any duration that affects greater than 50 customers or interrupts service to a complete YEC or AEY service area or results in an interruption in service to an industrial customer. Table 2-2 lists the number of interruptions by cause from 2010 to 2014.

Table 2-1: Cause of Interruption: 2010 to 2014

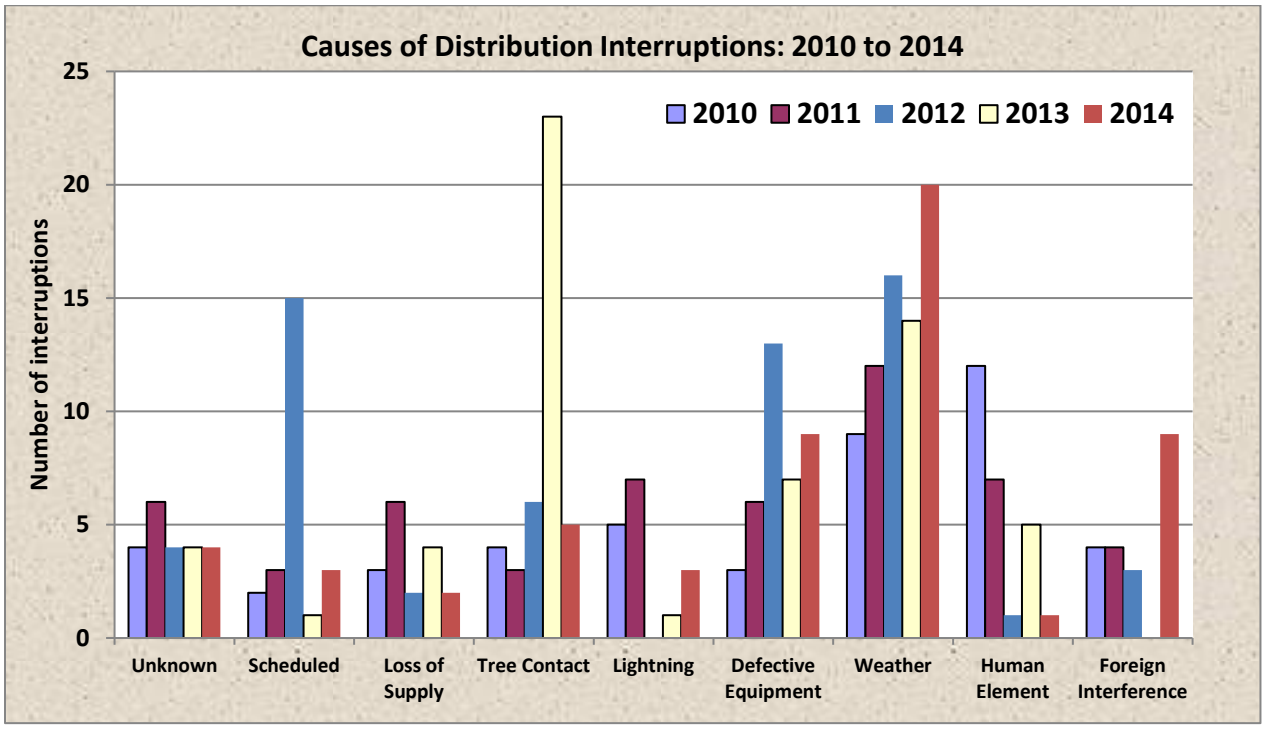
Cause of Interruption	2010	2011	2012	2013	2014
Unknown	4	6	4	4	4
Scheduled	2	3	15	1	3
Loss of Supply	3	6	2	4	2
Tree Contact	4	3	6	23	5
Lightning	5	7	0	1	3
Defective Equipment	3	6	13	7	9
Weather	9	12	16	14	20
Human Element	12	7	1	5	1
Foreign Interference	4	4	3	0	9
Total	46	54	60	59	56

During 2014 there were:

- 33 Transmission outages caused by Weather (20), Tree Contacts (5), Lightning (3), Defective Equipment (2), Loss of Supply (1) Unknown (1), Scheduled (1).
- 18 Distribution outages caused by Foreign Interference (9), Defective Equipment (3), Unknown (3), Scheduled (2) and Human Element (1).
- 5 Generation outages occurred all of which were caused by PLCs, sensors or alarms taking units out of service with no major damages or repairs required to restart the generation units.

Figure 2-2 (following page) illustrates the number of interruptions by cause from 2010 to 2014.

Figure 2-2: Causes of Interruptions: 2010 to 2014



Unknown, Scheduled, Tree Contacts, Lightning, Weather and Foreign Interference contribute towards the majority of outages each year and are often due to events beyond the immediate control of the utility. The high number of Tree Contacts in 2013 caused the company to adopt a 10 year brushing cycle program which will address problem areas on right-of-ways first, then manage brushing on a more proactive basis later. During 2014, the Weather incidents include 12 Snow and Wind events on the L250 (Elsa) line. The 9 Foreign Interference incidents were 6 ravens, 2 squirrels and one vehicle.

Loss of Supply, Defective Equipment, and Human Element are categories where YEC attempts to reduce outages through preventative maintenance and training activities. For example, many of the Human Element occurrences in 2010 were 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 are intended to reduce occurrences of this type of outage. During 2014, of the dozen incidents that occurred in these three categories, 3 incidents were due to failure of PLCs controlling the operation of hydro units; 2 incidents were due to the failure of ancillary equipment; and 7 incidents requiring replacement of insulators, fuses or pole structural components.

Environmental Performance

As part of its Environmental Management System, YEC reports all spill incidents greater than 5 litres. During 2014, there was one minor spill at P126 diesel plant when the vapour extractor surged and blew oil laden vapour out of a collection barrel disbursing approximately 5 litres of diesel engine oil onto the wall and ground surrounding the barrel. The incident was reported via the Yukon Spill Line and corrective actions were taken. There were no incidents to report for 2013 or 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. During 2014, there were 93 employees or full time equivalents at Yukon Energy and the vehicle fleet mileage was 988,701 km.

All Injury Frequency includes 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 Lost Time injuries combined with the total number of Medical Aid injuries.

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

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

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.

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

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

$$\text{Lost Time Injury Severity Rate} = \frac{(\#\text{ of Days Lost}) \text{ x } 200{,}000}{\text{Exposure Hours (Hours Worked)}}$$

Recordable Motor Vehicle Incident is any incident involving a motor vehicle being operated by an employee that would meet the Recordable Injury criteria or costing more than $5,000 in total property damage. This includes any motor vehicles that are operating but stationary in traffic when the incident occurs.

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

The table below is a record of Yukon Energy's safety performance for 2012 through 2014 according to the CEA injury and accident definitions, and comparing them against the 2014 CEA utility statistics for the Group III – Under 300 Employees category.

CATEGORY	2012	2013	2014	CEA
All Injury/Illness Frequency Rate	1.33	1.27	2.54	2.28
Lost Time Injury Frequency Rate	1.33	1.27	1.27	1.71
Lost Time Injury Severity Rate	2.65	22.94	1.27	17.00
Motor Vehicle Incident Frequency Rate	4.66	6.52	5.06	1.34

During 2014 there were 2 reportable injuries: 1 Medical Aid and 1 Lost Time injury of 1 day duration resulting in an All-Injury Frequency Rate of 2.54 and a Lost Time Injury Frequency Rate and Lost Time Severity Rate of 1.27. During 2013 there was only 1 reportable injury which was a Lost Time injury of 20 days duration resulting in both the All-Injury Frequency Rate and the Lost Time Injury Frequency Rate being 1.27 and the Lost Time Severity Rate being 22.94. During 2012 there was 1 Lost Time injury of 2 days duration.

Applying the CEA criteria for Recordable Vehicle Incidents to the 5 motor vehicle incidents experienced during 2014 results in a Motor Vehicle Incident Frequency Rate of 5.06; compared to 6 incidents during 2013 which equals a Motor Vehicle Incident Frequency Rate of 6.52, and 4 incidents during 2012 for a rate of 4.66.

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	2012	2013	2014
Regulated Return on Equity (ROE)	6.75%	7.33%	8.39%
Cents per kWh Generated (avg unit energy cost)	5.79	6.09	6.40
Total System Losses (as % of sales)	8.82%	9.01%	7.60%
Customers per Employee	21.33	21.44	21.27
Total MWh Sales per Employee	4,216	4,177	4,016
Non-Industrial Sales per Employee	3,743	3,742	3,626
Avg Consumption per Residential Customer (MWh/yr)	8.57	8.65	8.46
Avg Consumption per Commercial Customer (MWh/yr)	48.38	47.46	49.34
Total Labour Dollars per Customer *	$677	$723	$749
O&M Labour Dollars per Customer	$552	$598	$618
Total Labour Dollars per MWh Generation	$27.72	$30.31	$33.65
O&M Labour Dollars per MWh Generation	$22.58	$25.05	$27.78

* 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 AEY serves that are on the integrated grid.

Cents per KWh Generated was higher in 2014 as operating costs were essentially the same as 2013 but generation was 5% lower due to reduced sales to Wholesale and Industrial customers.

Average Consumption per Residential Customer was lower in 2014 than 2012/13 as the winter months were warmer resulting in reduced sales. Average Consumption per Commercial Customer was higher in 2014 due to Faro ARM water treatment activities being higher than the prior two years.

The increase in Labour Dollars per Customer is due to higher labour costs in 2014 being compared to a static customer base.

The increase in Labour Dollars per MWh Generation is due to higher labour costs being distributed over fewer MWh of generation than in 2013.