



Service Quality and Reliability Reporting Plan

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Chapter 1 – Introduction

Avista's Service Quality and Reliability Report details the annual results, from the prior calendar year, of the Company's Service Quality Measures (SQM) Program and overall electric reliability information as required by WAC 480-100-393 and 480-100-398.

The introduction will include a general overview of the Company's electric and natural gas service profile.

Executive Summary

The executive summary will provide highlights of the information included in the report. Specifically, it will summarize the results of the SQM program and electric reliability information.

Background

Per WAC 480-100-398, Avista must submit an annual electric service reliability report to the Commission at least once per year. Avista has selected to submit its annual report, known as its Service Quality and Reliability Report, on or before April 30th of each year. This date allows the Company time to finalize results from the prior calendar year and put the report together. As detailed in WAC 480-100-398, the contents of the report must include the following, at minimum:

(1) The report must be consistent with the electric service reliability monitoring and reporting plan filed under WAC [480-100-393](#). As set forth in the plan, in an identified year, baseline reliability statistics must be established and reported. In subsequent years, new reliability statistics must be compared to the baseline reliability statistics and to reliability statistics from all intervening years. The utility must maintain historical reliability information necessary to show trends for a minimum of seven years.

(2) The report must address any changes that the utility may make in the collection of data and calculation of reliability information after initial baselines are set. The utility must explain why the changes occurred and explain how the change is expected to affect comparisons of the newer and older information. Additionally, to the extent practical, the utility must quantify the effect of such changes on the comparability of new reliability statistics to baseline reliability statistics.

(3) The report must identify the utility's geographic areas of greatest reliability concern, explain their causes, and explain how the utility plans to address them.

(4) The report must identify the total number of customer complaints about reliability and power quality made to the utility during the year, and must distinguish between complaints about sustained interruptions and power quality. The report must also identify complaints that were made about major events.

Service Quality Measures Program

This section will provide a summary of the results of the SQM Program for the prior calendar year.

Customer Service Measures	Benchmark	20XX Performance	Achieved
Percent of customers satisfied with our Contact Center services, based on survey results	At least 90%		
Percent of customers satisfied with field services, based on survey results	At least 90%		
Number of complaints to the WUTC per 1,000 customers, per year	Less than 0.40		
Percent of calls answered live within 60 seconds by our Contact Center	At least 80%		
Average time from customer call to arrival of field technicians in response to electric system emergencies, per year	No more than 80 minutes		
Average time from customer call to arrival of field technicians in response to natural gas system emergencies, per year	No more than 55 minutes		

Electric System Reliability	5-Year Avg.	20XX Result
Frequency of non-major-storm power interruptions, per year, per customer		
Length of power outages per year, per customer		

Customer Service Guarantees	Quantity	# Missed	\$\$ Paid
Electric & Natural Gas service appointments			
Electric outage restoration within 24 hours of notification from Customer, excluding major events			
Switch on power within one business day of request			
Provide cost estimate for new electric or natural gas supply within 10 business days			
Investigate and respond to billing inquiries with 10 business days			
Investigate customer-reported problems with a meter, or conduct a meter test, and report results within 20 business days			
Provide notification at least 24 hours in advance of disconnecting service for scheduled electric interruptions			

Electric Reliability

This section will provide a summary of the results the electric reliability results for the prior calendar year. The following table is an example of the summarized results that will be included.

Index	2008-2013 Average (Excluding Major Events)	2005 Baseline	Reliability Target (Ave + 2 Standard Deviations)	2014 Results (Excluding Major Events)
SAIFI	1.24	0.97	1.61	1.11
MAIFI	3.12	3.58	4.89	2.2
SAIDI	149	108	200	139
CAIDI	120	112	138	125

Appendices

Appendix A: Definitions

Appendix B: Electric Index Calculations

Appendix C: Customer Reliability Complaints

Appendix D: SAIFI and SAIDI Historical Summary

Appendix E: Service Quality Measures Report Card

Chapter 2 – Service Quality Measures

Implemented in 2015, Avista’s Service Quality Measures (SQM) program was established to track the Company’s efforts on the quality of the service it provides to its customers, establish customer service guarantees, and provide a method for reporting results of the program to the Commission and its customers. The SQM Program includes six Customer Service Measures, two Electric Reliability Measures, and seven Customer Service Guarantees.

Per the Company’s approved tariffs for the program, Schedule 85 for electric service and Schedule 185 for natural gas service, in Dockets UE-140188 and UG-140189 (consolidated), Avista must include the results for the Customer Service and Electric Reliability measures in its 2016 Service Quality and Reliability Report. Beginning in 2017 the Company must also include the results of the Customer Service Guarantees in the annual report.

Customer Service Measures

Customer Satisfaction - Call Center

Customer Service Measures	Benchmark	20XX Performance	Achieved
Percent of customers satisfied with our Contact Center services, based on survey results	At least 90%		

About the Measure

The full details of the measure are as follow:

The level of Customer satisfaction with telephone service, as provided by the Company’s Contact Center, will be at least 90 percent, where:

- a. The measure of Customer satisfaction is based on Customers who respond to Avista’s quarterly survey of Customer satisfaction, known as the Voice of the Customer, as conducted by its independent survey contractor;
- b. The measure of satisfaction is based on Customers participating in the survey who report the level of their satisfaction as either “satisfied” or “very satisfied”; and
- c. The measure of satisfaction is based on the statistically-significant survey results for both electric and natural gas service for Avista’s entire service territory for the calendar year, and if possible, will also be reported for Washington customers only.

The results of this measure are based on the Company’s Voice of the Customer (VOC) survey, which is administered by a third-party vendor with oversight from our Avista’s External Communications Department.

Customer Satisfaction – Field Services

Customer Service Measures	Benchmark	20XX Performance	Achieved
Percent of customers satisfied with field services, based on survey results	At least 90%		

About the Measure

The full details of the measure are as follow:

The level of Customer satisfaction with the Company’s field services will be at least 90 percent, where:

- a. The measure of Customer satisfaction is based on Customers who respond to Avista’s quarterly survey of Customer satisfaction, known as the Voice of the Customer, as conducted by its independent survey contractor;
- b. The measure of satisfaction is based on Customers participating in the survey who report the level of their satisfaction as either “satisfied” or “very satisfied”; and
- c. The measure of satisfaction is based on the statistically-significant survey results for both electric and natural gas service for Avista’s entire service territory for the calendar year, and if possible, will also be reported for Washington customers only.

The results of this measure are based on the Company’s Voice of the Customer (VOC) survey, which is administered by a third-party vendor with oversight from our External Communications Department. At the conclusion of each year the External Communications Department will receive the annual VOC survey results on a system and WA only basis.

UTC Complaint Ratio

Customer Service Measures	Benchmark	20XX Performance	Achieved
Number of complaints to the WUTC per 1,000 customers, per year	Less than 0.40		

About the Benchmark

The full details of the measure are as follow:

The number of complaints filed with the Washington Utilities and Transportation Commission by Avista’s electric and natural gas Customers will not exceed the rate of 0.4 complaints per 1,000 Customers for the calendar year.

Customer Complaints filed with the WUTC will be monitored and tracked by Avista’s Customer Service Department.

The complaint ratio is calculated by dividing the sum of all electric and natural gas complaints to the WUTC by the average monthly number of Avista customers. The quotient is then multiplied by 1,000 to get the complaint ratio.

$$\text{Complaint Ratio} = \frac{\text{\# of complaints}}{\text{Avg. \# of electric + natural gas customers}} \times 1,000$$

Call Center Grade of Service

Customer Service Measures	Benchmark	20XX Performance	Achieved
Percent of calls answered live within 60 seconds by our Contact Center	At least 80%		

About the Benchmark

The full details of the measure are as follow:

The percentage of Customer calls answered by a live representative within 60 seconds will be at least 80 percent for the calendar year, where:

- a. The measure of response time is based on results from the Company’s Contact Center, and is initiated when the Customer requests to speak to a Customer service representative; and
- b. Response time is based on the combined results for both electric and natural gas Customers for Avista’s entire service territory.

The Call Center Grade of Service (GOS), or goal of answering 80% of calls within 60 seconds, will be managed by the Customer Service Scheduler with oversight of the Customer Service Management team.

When a customer calls Avista’s Call Center the call is received by the Interactive Voice Response (IVR) system where the customer can self-serve (i.e., check account balance, pay a bill, etc...) or choose to speak to a Customer Service Representative (CSR). The response time to phone calls is measured from the time a customer requests to speak to a CSR until a CSR answers the call.

The GOS for the calendar year is determined by dividing the total number of calls answered by a CSR within 60 seconds by the total number of calls received for the year.

$$\text{GOS} = \frac{\text{total number of calls answered within 60 seconds}}{\text{total number of calls}}$$

Electric Emergency Response Time

Customer Service Measures	Benchmark	20XX Performance	Achieved
Average time from customer call to arrival of field technicians in response to electric system emergencies, per year	No more than 80 minutes		

About the Benchmark

The full details of the measure are as follow:

The Company’s average response time to an electric system emergency in Washington will not exceed 80 minutes for the calendar year, where:

- a. Response time is measured from the time of the Customer call to the arrival of a field service technician;
- b. “Electric system emergency” is defined as an event when police/fire are standing by, or arcing/flashings wires down (unspecified location, pole to house, or pole to pole), or for feeder lockout; and
- c. Response times are excluded from the calculation for those periods of time when the Company is experiencing an outage that qualifies as a Major Event Day (“MED”), as defined by the IEEE, and which includes the 24 hour period following the MED.

Electric emergency response time is determined by the length of time it takes for Avista to respond onsite after receiving notice of an emergency. The Company begins tracking the time to respond after a field order has been created, which happens when a customer or individual reports an emergency. The average response time for the year is calculated by dividing the sum of all electric emergency response times by the total number of electric emergency incidents.

$$\text{Avg. Emergency Response Time} = \frac{\text{sum of electric emergency response times}}{\text{\# of electric emergency incidents}}$$

Natural Gas Emergency Response Time

Customer Service Measures	Benchmark	20XX Performance	Achieved
Average time from customer call to arrival of field technicians in response to natural gas system emergencies, per year	No more than 55 minutes		

About the Benchmark

The full details of the measure are as follow:

The Company’s average response time to a natural gas system emergency in Washington will not exceed 55 minutes for the calendar year, where:

- a. Response time is measured from the time of the customer call to the arrival of a field service technician; and
- b. “Natural gas system emergency” is defined as an event when there is a natural gas explosion or fire, fire in the vicinity of natural gas facilities, police or fire are standing by, leaks identified in the field as “Grade 1”, high or low gas pressure problems identified by alarms or customer calls, natural gas system emergency alarms, carbon monoxide calls, natural gas odor calls, runaway furnace calls, or delayed ignition calls.

Natural Gas emergency response time is determined by the length of time it takes for Avista to respond onsite after receiving notice of an emergency. The Company begins tracking the time to respond after a field order has been created, which happens when a customer or individual reports an emergency. The average response time for the year is calculated by dividing the sum of all electric emergency response times by the total number of electric emergency incidents.

$$\text{Avg. Emergency Response Time} = \frac{\text{sum of natural gas emergency response times}}{\text{\# of natural gas emergency incidents}}$$

Electric Reliability Measures

Frequency of Interruptions

Electric System Reliability	5-Year Avg.	20XX Result
Frequency of non-major-storm power interruptions, per year, per customer		

About the Benchmark

The full details of the measure are as follow:

The Company will report the frequency of electric system interruptions per Customer for the calendar year, where:

- a. The interruptions are measured as the System Average Interruption Frequency Index (“SAIFI”), as calculated by the IEEE;
- b. The calculation of SAIFI excludes interruptions associated with any MED;
- c. The report will provide a brief description of the predominant factors influencing the current-year results, and in the context of the Company’s historic five-year rolling average of SAIFI; and
- d. The results will be reported on a system basis for Washington and Idaho and will include the annual SAIFI for Washington only.

Full details of the SAIFI results are further described in Chapter 3.

Duration of Interruptions

Electric System Reliability	5-Year Avg.	20XX Result
Length of power outages per year, per customer		

About the Benchmark

The full details of the measure are as follow:

The Company will report the duration of electric system interruptions per Customer for the calendar year, where:

- a. The interruption duration is measured as the System Average Interruption Duration Index (“SAIDI”), as defined by the IEEE;
- b. The calculation of SAIDI excludes interruptions associated with any MED;
- c. The report will provide a brief description of the predominant factors influencing the current-year system results, and in the context of the Company’s historic five-year rolling average of SAIDI; and
- d. The results will be reported on a system basis for Washington and Idaho and will include the annual SAIDI for Washington only

Full details of the SAIFI results are further described in Chapter 3.

Customer Service Guarantees

Service Appointments

Customer Service Guarantees	Quantity	# Missed	\$\$ Paid
Electric & Natural Gas service appointments			

About the Benchmark

The full details of the measure are as follow:

The Company will keep mutually agreed upon appointments for electric or natural gas service, scheduled in the time windows of either 8:00 a.m. – 12:00 p.m. or 12:00 p.m. – 5:00 p.m., except for the following instances:

- a. When the Customer or Applicant cancels the appointment;
- b. The Customer or Applicant fails to keep the appointment; or
- c. The Company reschedules the appointment with at least 24 hours notice.

Outage Restoration

Customer Service Guarantees	Quantity	# Missed	\$\$ Paid
Electric outage restoration within 24 hours of notification from Customer, excluding major events			

About the Benchmark

The full details of the measure are as follow:

When the Customer experiences an electric interruption, the Company will restore the service within 24 hours of notification from the Customer, except for the following instances:

- a. During periods of time when the outage is associated with a MED, which includes the 24-hour period following the MED; or
- b. When an action or default by someone other than a utility employee that is outside the control of the company prevented the Company from restoring supply.

Switching on Power

Customer Service Guarantees	Quantity	# Missed	\$\$ Paid
Switch on power within one business day of request			

About the Benchmark

The full details of the measure are as follow:

The Company will switch on power within one business day of the Customer or Applicant's request for service, except for the following instances:

- a. When construction is required before the service can be energized;
- b. When the Customer does not provide evidence that all required government inspections have been satisfied;
- c. When required payments to the Company have not been received; or
- d. The service has been disconnected for nonpayment or theft/diversion of service.

Cost Estimates for New Supply

Customer Service Guarantees	Quantity	# Missed	\$\$ Paid
Provide cost estimate for new electric or natural gas supply within 10 business days			

About the Benchmark

The full details of the measure are as follow:

The Company will provide a cost estimate to the Customer or Applicant for new electric or natural gas supply within 10 business days upon receipt of all the necessary information from the Customer or Applicant.

Billing Inquires

Customer Service Guarantees	Quantity	# Missed	\$\$ Paid
Investigate and respond to billing inquiries with 10 business days			

About the Benchmark

The full details of the measure are as follow:

Meter Investigations and Tests

Customer Service Guarantees	Quantity	# Missed	\$\$ Paid
Investigate customer-reported problems with a meter, or conduct a meter test, and report results within 20 business days			

About the Benchmark

The full details of the measure are as follow:

The Company will respond to most billing inquiries at the time of the initial contact, and for those inquires that require further investigation, the company will investigate and respond to the Customer within 10 business days.

Notification of Scheduled Interruptions

Customer Service Guarantees	Quantity	# Missed	\$\$ Paid
Provide notification at least 24 hours in advance of disconnecting service for scheduled electric interruptions			

About the Benchmark

The full details of the measure are as follow:

The Company will investigate Customer-reported problems with a meter, or conduct a meter test, and report the results to the Customer within 20 business days.

Chapter 3 – Electric Reliability

In this section the Company will provide a brief overview of reliability for the year and explain any changes or significant events that occurred.

Data Collection and Calculation Changes

WAC 480-100-398(2) requires the Company to report changes made in data collection or calculation of reliability information after initial baselines are set. This section addresses changes that the Company has made to data collection or calculations.

Baseline Statistics

WAC 480-100-393 (3)(b) requires the establishment of baseline reliability statistics. The Company's baseline statistics will be included in the report and compare the reporting year data to the baseline year of 2005 and years in between. The Company will also provide a statistical target that represents an analysis based on an average over a time period and adding two standard deviations. Year to year variations should be below this target, but may provide information that shows continuing trends.

System Indices

The System Indices section will show indices for Avista's Washington and Idaho ("system") electric service territory by year. Each chart will show eight years of data along with the baseline reliability statistic. The Company also has calculated a reliability target that is the average over the previous five years plus two standard deviations.

The reliability targets have been adjusted by removing Major Event Days, MED's, as defined in Appendix A.

The following are examples of the charts that will be included for each system indice.

Table - Reliability Statistic Target by Index

Index	2008-2013 Average (Excluding Major Events)	2005 Baseline	Reliability Target (Ave + 2 Standard Deviations)
SAIFI	1.24	0.97	1.61
MAIFI	3.12	3.58	4.89
SAIDI	149	108	200
CAIDI	120	112	138

Chart - SAIFI - Sustained Interruptions / Customer

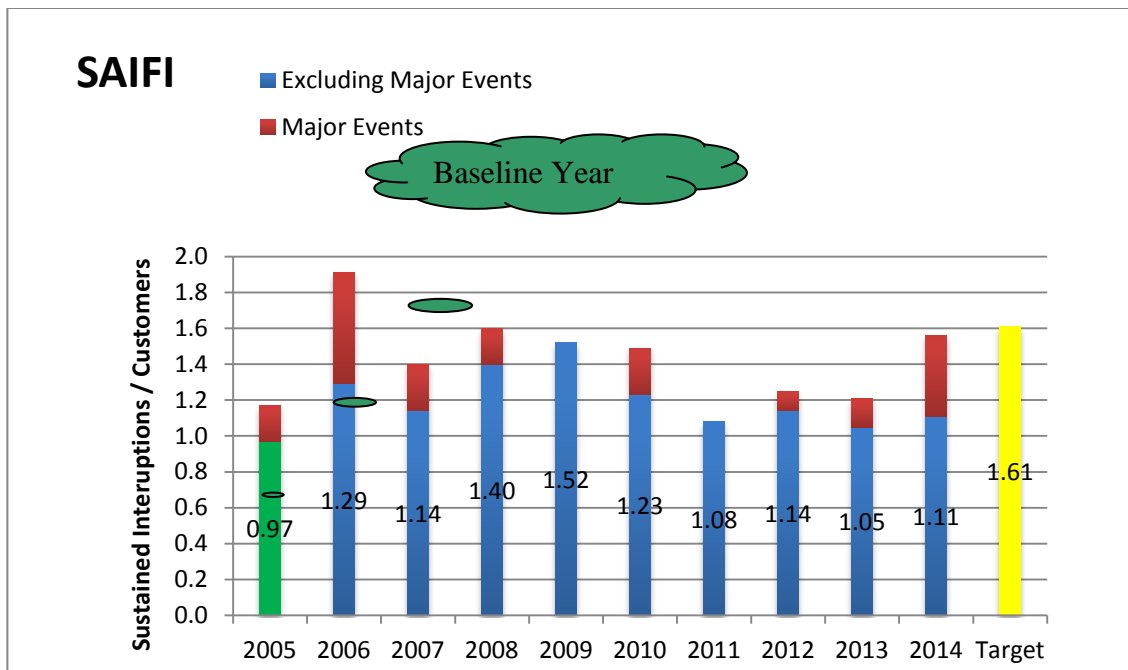
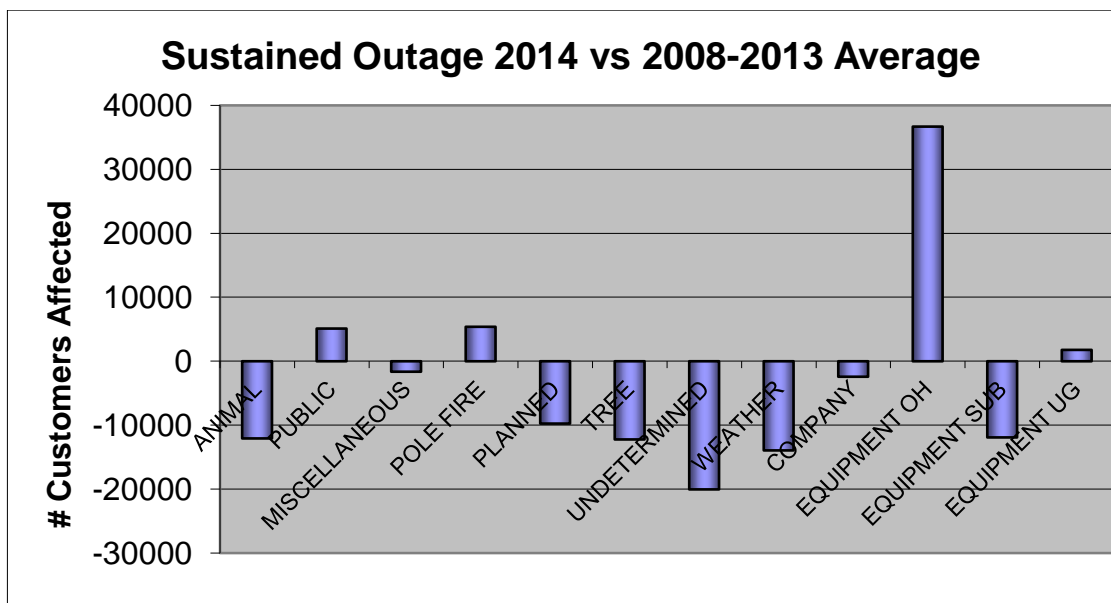


Chart - Sustained Interruptions / Customer Historic Comparison



Following the graphical information about each system indice the report will also contain further explanations and details about the results for the year.

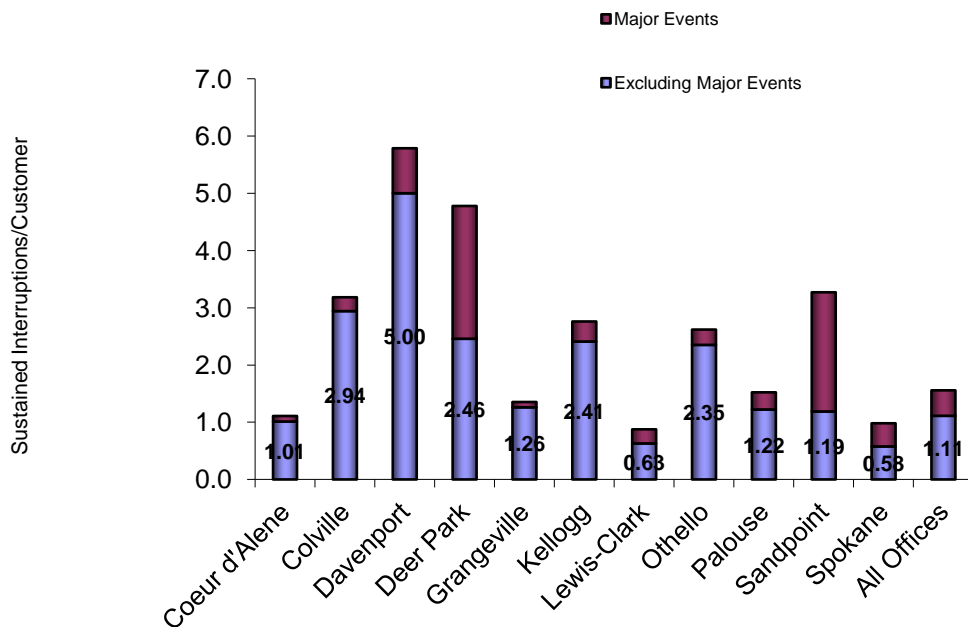
Office Areas Indices

The Office Areas Indices section will include charts showing the system indices results for each of the Company’s office areas. The Company has eleven different office areas it provides data on, which are the following.

CDC	Coeur d’Alene	LCC	Lewiston-Clarkston
COC	Colville	OTC	Othello
DAC	Davenport	PAC	Palouse
DPC	Deer Park	SAC	Sandpoint
GRC	Grangeville	SPC	Spokane
KEC	Kellogg/ St. Maries		

An example of the charts to be included for the system indices of each office area are as follows.

Chart – SAIFI – Sustained Interruptions / Customer



Major Event Days

Major Events and Major Event Days as used in this report are defined per the IEEE Guide for Electric Power Distribution Reliability Indices, IEEE P1366-2012. The definitions are taken from the IEEE Guide and can be found in Appendix A. The Company will use the process defined in IEEE P1366 to calculate the threshold value of T_{MED} and to determine MED’s. All indices will be reported both including and excluding MED’s. The comparisons of service reliability to the baseline statistics in subsequent years will be made using the indices calculated without MED’s.

The Company will include a list of the Major Event Days that occurred during the year as shown in the following example.

Major Event Days	SAIDI (Customer-Minutes)	Cause
2014 Major Event Day Threshold	8.72	
July 23, 2014	92.95	Wind
July 24, 2014	35.66	Wind
August 2, 2014	121.05	Wind
August 3, 2014	38.52	Wind
August 12, 2014	9.84	Wind

Customers Experiencing Multiple Interruptions

The IEEE Standard 1366P-2003 provides for two methods to analyze data associated with customers experiencing multiple momentary interruptions and/or sustained interruptions. Avista’s Outage OMT and Geographical Information System GIS provide the ability to geospatially associate an outage to individual customer service points. This association allows for graphically showing Customers Experiencing Multiple sustained Interruptions (CEMI_n) with Major Event Day data included onto GIS produced areas. Data can be exported to MS Excel to also create graphs representing different values of n.

This section will provide the results for CEMI_n and an explanation of the results. Charts showing the results will be provided, similar to the following examples.

Chart 5.1 - Avista Service Territory - CEMI_n

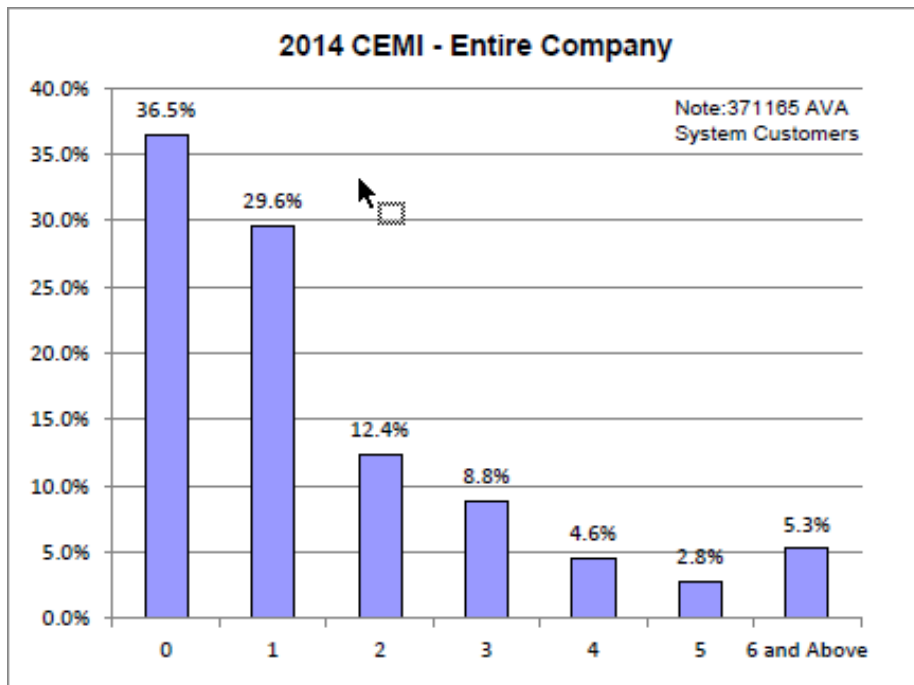
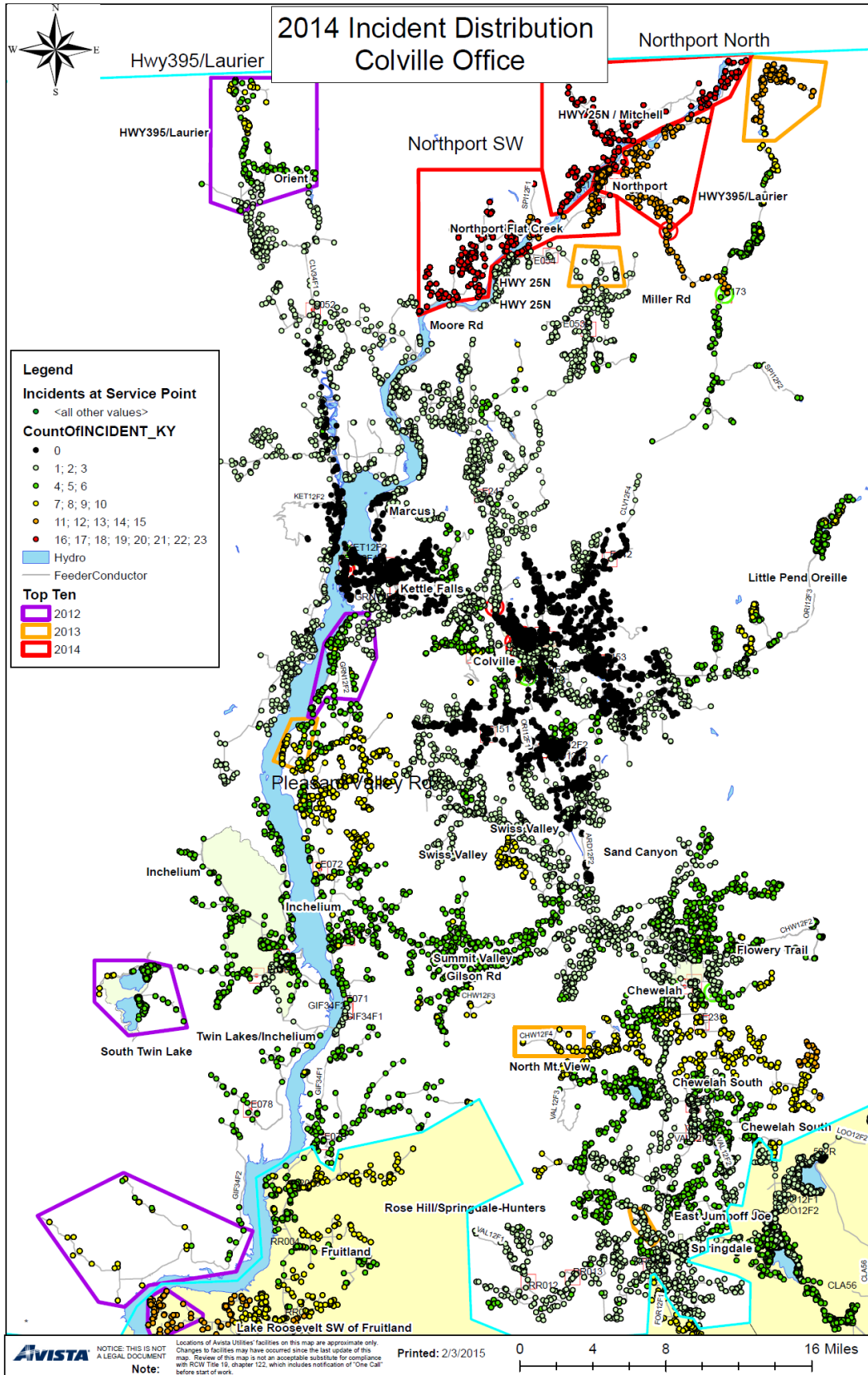


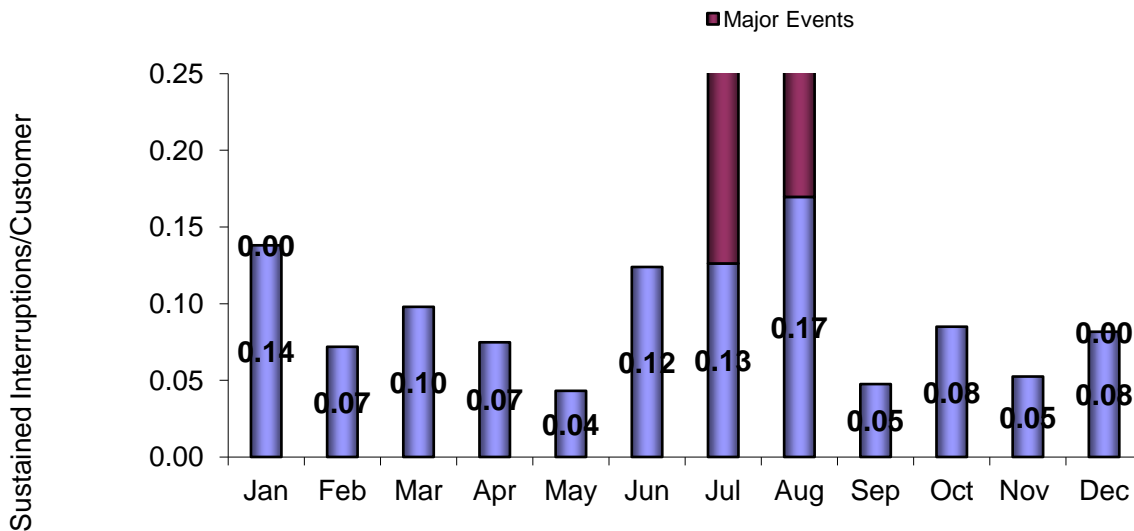
Chart - Colville Office - CEMIn



Monthly Indices

This section will provide the system indices by month in order to show the monthly variation in system results. An example of the charts that may be included is as follows.

Chart – SAIFI – Sustained Interruptions / Customer by Month



Sustained Interruption Causes

This section will provide further explanation and detail for the causes of sustained interruptions. The following table is an example of what will be included.

Table - % SAIFI per Cause by Office

Reason	CDC	COC	DAC	GRC	KEC	LCC	OTC	PAC	SAC	SPC	DPC	All
ANIMAL	12.0%	5.0%	3.1%	8.4%	2.5%	3.2%	1.5%	6.3%	1.4%	6.2%	0.7%	5.4%
MISC	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
POLE FIRE	1.8%	7.6%	0.5%	10.4%	0.1%	10.1%	8.4%	4.4%	0.2%	10.7%	40.6%	8.1%
WEATHER	14.1%	24.4%	47.8%	13.7%	35.0%	11.0%	13.4%	9.9%	20.0%	16.5%	13.7%	19.9%
UNKNOWN	17.1%	4.8%	9.1%	3.4%	21.6%	1.2%	8.5%	12.1%	11.4%	10.6%	0.4%	10.3%
TREE	11.2%	10.8%	4.1%	7.6%	14.3%	6.9%	0.5%	16.5%	36.7%	3.2%	1.9%	9.4%
PUBLIC	20.2%	8.2%	2.7%	9.9%	5.9%	11.2%	1.4%	20.7%	6.7%	4.1%	15.5%	10.0%
COMPANY	2.3%	0.0%	4.7%	0.0%	0.2%	17.7%	4.5%	4.0%	0.0%	8.4%	0.0%	4.0%
EQUIP OH	5.0%	24.9%	24.5%	11.2%	16.2%	10.4%	49.7%	10.6%	18.6%	27.3%	21.5%	19.8%
EQUIP UG	0.1%	0.2%	0.1%	0.8%	0.4%	11.8%	0.0%	1.6%	0.4%	2.5%	4.4%	1.7%
EQUIPSUB	8.0%	0.0%	0.0%	0.0%	0.0%	11.9%	0.0%	6.5%	0.1%	0.0%	0.0%	2.3%
PLANNED	8.2%	14.1%	3.5%	34.6%	3.8%	4.7%	12.1%	7.4%	4.6%	10.6%	1.3%	9.0%

Momentary Interruption Causes

The cause for many momentary interruptions is unknown. Because faults are temporary, the cause goes unnoticed even after the line is patrolled. Momentary outages are recorded using our SCADA system (System Control and Data Acquisition). On average, about 88% of Avista’s customers are served from SCADA controlled stations. The following table is an example of what will be included in this section.

Table - % MAIFI per Cause by Office in Washington

Reason	COC	DAC	DPC	LCC - WA	OTC	PAC - WA	SPC	All Offices
ANIMAL	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
COMPANY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
EQUIPMENT	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.9%	0.0%
PUBLIC	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	0.0%
TREE	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
UNDETERMINED	0.0%	47.8%	28.6%	16.2%	57.9%	43.4%	22.0%	35.6%
WEATHER	0.0%	37.2%	48.4%	0.2%	27.8%	37.7%	53.2%	25.8%
EQUIPMENT OH	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.8%
EQUIPMENT UG	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%	0.0%
PLANNED	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
UNKNOWN	100.0%	14.8%	15.6%	83.7%	11.5%	15.3%	18.0%	12.9%
FORCED	0.0%	0.0%	7.4%	0.0%	0.0%	3.6%	2.7%	0.0%

Interruption Cause Codes

Cause code information is provided in this report to give readers a better understanding of outage sources. Further, the Company uses cause information to analyze past outages and, if possible, reduce the frequency and duration of future outages. Cause code information will be provided in a table similar to the following example.

MAIN CATEGORY	Proposed (Changes Only)	SUB CATEGORY	Proposed (Changes Only)	Definition
ANIMAL		Bird Squirrel Underground		Outages caused by animal contacts. Specific animal called out in sub category.

Areas of Concern

The Areas of Concern section will include the area or areas that experience the lowest reliability in the Company’s Washington operating areas. Causal information along with work plans to improve the reliability of the greatest areas of concern will be documented.

System Wide Work Plans

In this section the Company will document system wide work plans currently being implemented to improve overall reliability. Programs such as wildlife guards or wood pole management or those similar will be explained.

Grid Modernization Program

Avista has initiated a Grid Modernization Program that is designed to reduce energy losses, improve operation, and increase the long-term reliability of its overhead and underground electric distribution system. The program will include replacing the following item: poles, transformers, cross arms, arresters, air switches with steel arms, grounds, cutouts, riser wire, insulators, and conductors to address concerns related to age, capacity, high electrical resistance, strength, and mechanical ability. Changes, including the addition of wildlife guards, smart grid devices, switch capacitor banks, balancing feeders, removing unauthorized attachments, replacing open wire secondary, and reconfigurations are included in the Program.

This section will provide a brief explanation of specific work being done as part of the Grid Modernization Program.

System Wide Vegetation Management Plan

Avista has an annual vegetation management plan and budget to accomplish the plan. The budget is allocated into distribution, transmission, administration, and gas line re-clearing. This section will provide a brief explanation of both the distribution and transmission vegetation management efforts.

Appendix A - Definitions

"Baseline reliability statistic" – Avista will compare its reliability statistics to the year 2005.

"Commission Complaint" – When a customer is not satisfied with the Company as it relates to Electric Reliability and files a complaint directly with the Commission.

"Customer Complaint" - When a customer is not satisfied with the Company as it relates to Electric Reliability and makes a complaint directly to a Company representative.

"Electric Service Reliability" - The continuity of electric service experienced by retail customers.

"Full-system" - All equipment and lines necessary to serve retail customers whether for the purpose of generation, transmission, distribution or individual service.

"Interruption Cause Code" – Used to describe the cause of an interruption (i.e., animal, tree, public, etc...).

"Major Event" – Designates an event that exceeds reasonable design and or operation limits of the electric power system. A Major Event includes at least one Major Event Day (MED).

"Major Event Day" – A day in which the daily system SAIDI exceeds a threshold value, T_{MED} . For the purposes of calculating daily system SAIDI, any interruption that spans multiple calendar days is accrued to the day on which the interruption began. Statistically, days having a daily system SAIDI greater than T_{MED} are days on which the energy delivery system experienced stresses beyond that normally expected (such as severe weather). Activities that occur on major event days should be separately analyzed and reported.

"Momentary Event Interruption" – An interruption(s) of duration 5 minutes or less. Each event consists of one trip and one reclose operation that occur within 5 minutes. For example, if an interrupting device operates three times and then holds, this would be counted as three events with the number of customers affected as three times the N_i .

"Power Quality" – Characteristics of electricity, primarily voltage and frequency, that must meet certain specifications for safe, adequate and efficient operations.

"Reliability Statistic" – Standard Statistics measures and calculation methods are per the IEEE Standard 1366-2003 (or latest version) Titled "IEEE Guide for Electric Power Distribution Reliability Indices". Same as Reliability Indices.

"Reliability Target" - A statistical method was developed in 2004 for baseline statistics. The method is defined as the average over a specific timeframe and 2 times the standard deviation. For 95% of the time, the Reliability Statistic should be below the target.

"Sustained Interruption" - An interruption lasting longer than 5 minutes.

Appendix B - Index Calculations

SAIFI – System Average Interruption Frequency Index

- The average number of sustained interruptions per customer
- =
$$\frac{\text{The number of customers which had *sustained interruptions*}}{\text{Total number of customers served}}$$
- =
$$\frac{\sum N_i}{N_T}$$

MAIFI_E – Momentary Average Interruption Event Frequency Index

- The average number of momentary interruption events per customer
- =
$$\frac{\text{The number of customers which had *momentary interruption events*}}{\text{Total number of customers served}}$$
- =
$$\frac{\sum ID_E N_i}{N_T}$$
- MAIFI can be calculated by one of two methods. Using the number of momentary interruptions or the number momentary events. This report calculates MAIFI_E using momentary events. The event includes all momentary interruptions occurring within 5 minutes of the first interruption. For example, when an automatic interrupting device opens and then recloses two, or three times before it remains closed, it is considered a single event.

SAIDI – System Average Interruption Duration Index

- Average sustained outage time per customer
- =
$$\frac{\text{Outage duration multiplied by the customers effected for all *sustained interruptions*}}{\text{Total number of customers served}}$$
- =
$$\frac{\sum r_i N_i}{N_T}$$

CAIDI – Customer Average Interruption Duration Index

- Average restoration time
- =
$$\frac{\text{Outage duration multiplied by the customers effected for all *sustained interruptions*}}{\text{The number of customers which had *sustained interruptions*}}$$
- =
$$\frac{\sum r_i N_i}{\sum N_i}$$

Quantities

i = An interruption event;

r_i = Restoration time for each interruption event;

T = Total;

ID_E = Number of interrupting device events;

N_i = Number of interrupted customers for each interruption event during the reporting period;

N_T = Total number of customers served for the area being indexed;

CEMI_n – Customers Experiencing Multiple Sustained Interruptions more than n.

- CEMI_n
- = $\frac{\text{Total Number of Customers that experience more than } n \text{ sustained interruptions}}{\text{Total Number of Customers Served}}$
- = $\frac{CN_{(k>n)}}{N_T}$

CEMSMI_n – Customers experiencing multiple sustained interruption and momentary interruption events.

- CEMSMIn
- = $\frac{\text{Total Number of Customers experiencing more than } n \text{ interruptions}}{\text{Total Number of Customers Served}}$
- = $\frac{CNT_{(k>n)}}{N_T}$

MED - Major Event Day

A major event day is a day in which the daily system SAIDI exceeds a threshold value. Its purpose is to allow major events to be studied separately from daily operation, and in the process, to better reveal trends in daily operation that would be hidden by the large statistical effect of major events.

T_{MED} is calculated (taken from the IEEE 1366-2003 Standard)

The major event day identification threshold value, T_{MED}, is calculated at the end of each reporting period (typically one year) for use during the next reporting period as follows:

- Collect values of daily SAIDI for five sequential years ending on the last day of the last complete reporting period. If fewer than five years of historical data are available, use all available historical data until five years of historical data are available.
- Only those days that have a SAIDI/Day value will be used to calculate the T_{MED} (do not include days that did not have any interruptions).
- Take the natural logarithm (ln) of each daily SAIDI value in the data set.
- Find a(Alpha), the average of the logarithms (also known as the log-average) of the data set.
- Find b(Beta), the standard deviation of the logarithms (also known as the log-standard deviation) of the data set.
- Compute the major event day threshold, TMED, using equation (25).

$$T_{MED} = e^{(a+ 2.5 b)} \tag{25}$$

- Any day with daily SAIDI greater than the threshold value TMED that occurs during the subsequent reporting period is classified as a major event day. Activities that occur on days classified as major event days should be separately analyzed and reported.

When an event has reached the threshold to constitute a MED described in subpart (f) above, all outage incidents associated with the MED will be flagged in the Company’s Outage Management Tool. As the Company further assesses damage in the field while making repairs, new subsequent outage incidents that were a result of the MED may be created as more accurate information is made available. The subsequent incidents will be flagged and included as part of original outage event and MED.

Appendix C - Customer Reliability Complaints

Commission Complaints

Commission Complaints are complaints received by the Washington Utilities and Transportation Commission specifically related to the Company's SQM Program, power quality, electric reliability, or Major Events.

Customer / Feeder	Complaint	Complaint Category	Resolution

Customer Complaints

Customer Complaints are complaints received by the Company specifically related to the Company's SQM Program, power quality, electric reliability, or Major Events.

Office /State /Feeder	Complaint	Complaint Category	Resolution

Appendix D – SAIFI and SAIDI Historical Summary

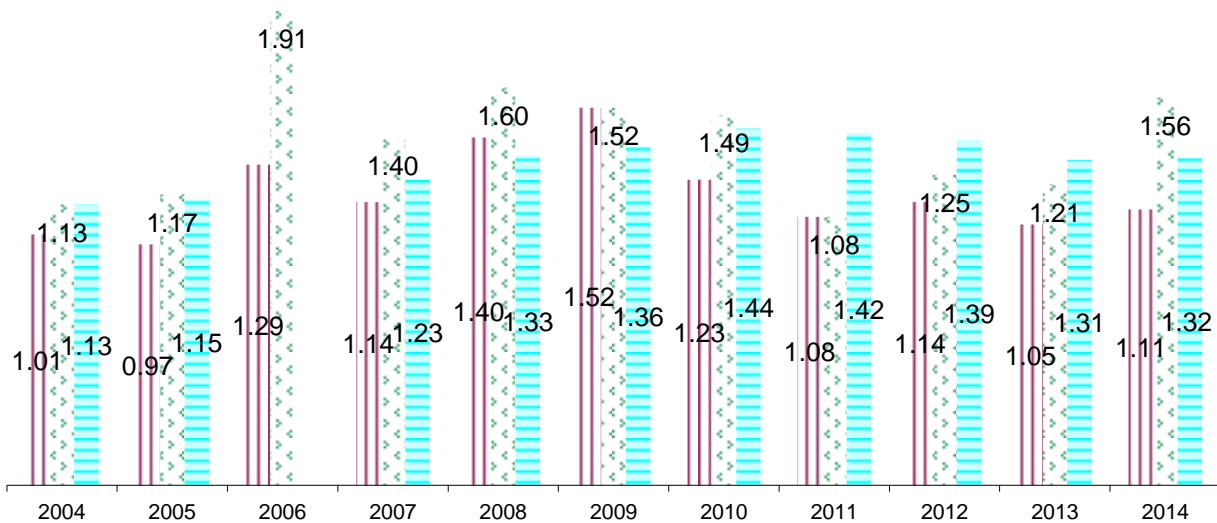
2004 - 2014 AVA SAIFI Performance by Measurement by Year

Year	Calendar Year	Annual IEEE SAIFI Excluding Daily Results over TMED	Annual Total SAIFI Results: All Minutes w/o Exclusion	Annual Total SAIFI Results Excluding 2006	Total SAIFI 5-Year Rolling Annual Average Excluding 2006	
1	2004	1.01	1.13	1.13	1.13	
2	2005	0.97	1.17	1.17	1.15	Baseline
3	2006	1.29	1.91			
4	2007	1.14	1.40	1.40	1.23	
5	2008	1.40	1.60	1.60	1.33	
6	2009	1.52	1.52	1.52	1.36	
7	2010	1.23	1.49	1.49	1.44	
8	2011	1.08	1.08	1.08	1.42	
9	2012	1.14	1.25	1.25	1.39	
10	2013	1.05	1.21	1.21	1.31	
11	2014	1.11	1.56	1.56	1.32	
		1.17				Target

■ Annual IEEE SAIFI Excluding Daily Results over TMED

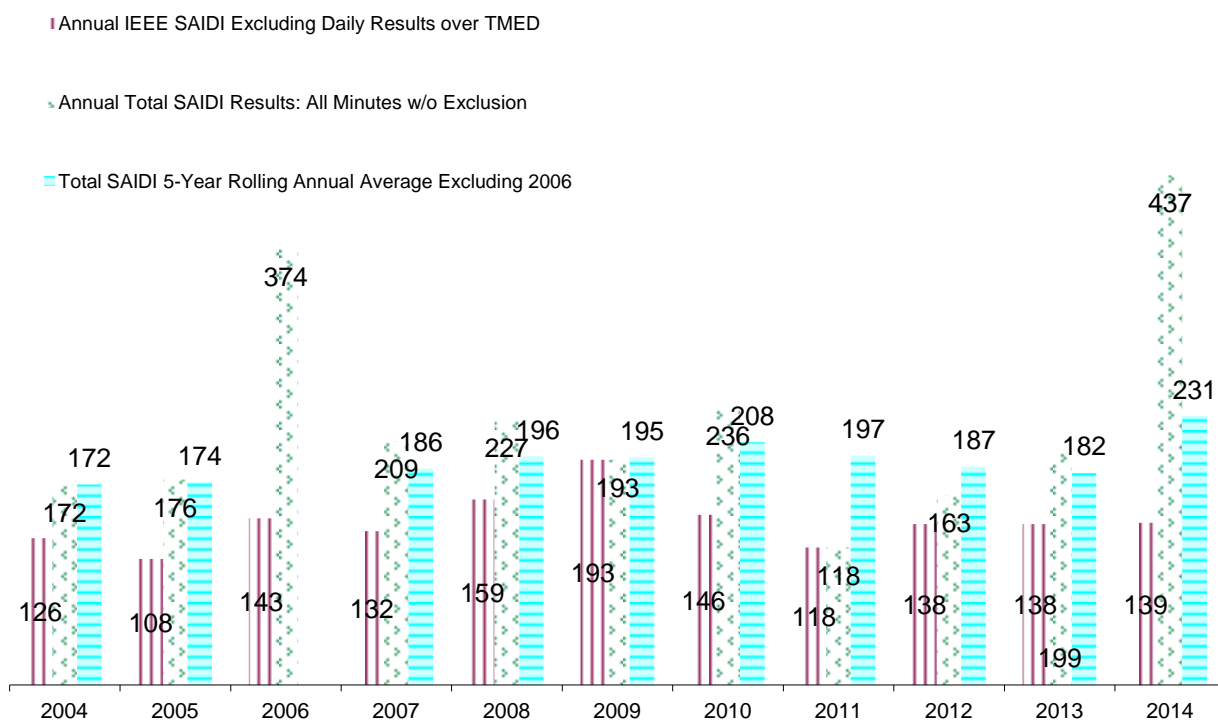
■ Annual Total SAIFI Results: All Minutes w/o Exclusion

■ Total SAIFI 5-Year Rolling Annual Average Excluding 2006



2004-2014 AVA SAIDI Performance by Measurement by Year

Year	Calendar Year	Annual IEEE SAIDI Excluding Daily Results over T _{MED}	Annual Total SAIDI Results: All Minutes w/o Exclusion	Annual Total SAIDI Results Excluding 2006	Total SAIDI 5-Year Rolling Annual Average Excluding 2006	
1	2004	126	172	172	172	
2	2005	108	176	176	174	Baseline
3	2006	143	374			
4	2007	132	209	209	186	
5	2008	159	227	227	196	
6	2009	193	193	193	195	
7	2010	146	236	236	208	
8	2011	118	118	118	197	
9	2012	138	163	163	187	
10	2013	138	199	199	182	
11	2014	139	437	437	231	
		144				Target



Appendix E – Service Quality Measures Report Card

The following is an example of the annual report card that will be sent to customers within 90 days of filing the Service Quality and Reliability Report.

20XX Service Quality Measures Report Card

Each year Avista measures how well we deliver our services to you and all of our customers in three key areas: Customer

Customer Service Measures	Benchmark	20XX Performance	Achieved
Percent of customers satisfied with our Contact Center services, based on survey results	At least 90%		
Percent of customers satisfied with field services, based on survey results	At least 90%		
Number of complaints to the WUTC per 1,000 customers, per year	Less than 0.40		
Percent of calls answered live within 60 seconds by our Contact Center	At least 80%		
Average time from customer call to arrival of field technicians in response to electric system emergencies, per year	No more than 80 minutes		
Average time from customer call to arrival of field technicians in response to natural gas system emergencies, per year	No more than 55 minutes		

Electric System Reliability	Performance
Frequency of non-major-storm power interruptions, per year, per customer	
Length of power outages per year, per customer	

Customer Service Guarantees	Quantity	# Missed	\$\$ Paid
Electric & Natural Gas service appointments			
Electric outage restoration within 24 hours of notification from Customer, excluding major events			
Switch on power within one business day of request			
Provide cost estimate for new electric or natural gas supply within 10 business days			
Investigate and respond to billing inquiries with 10 business days			
Investigate customer-reported problems with a meter, or conduct a meter test, and report results within 20 business days			
Provide notification at least 24 hours in advance of disconnecting service for scheduled electric interruptions			

20XX Performance Highlights

Include highlights for the year or reasons for shortfalls in this section. Also, can utilize this space to elaborate on results for reliability.