

# Energy Division Central Files Document Coversheet

**Directions:** Submit all documents and submittal questions to Energy Division Central Files via email [EnergyDivisionCentralFiles@cpuc.ca.gov](mailto:EnergyDivisionCentralFiles@cpuc.ca.gov)

1. Fill out coversheet completely. Coversheet can be embedded as page 1 of the electronic compliance filing, or can be submitted as a separate document that is attached to the email that delivers the compliance filing.
2. If the coversheet is submitted as separate document, please name the coversheet file with the same document name used in your primary document (see Section A) + plus the word "cov" (for coversheet). For example, the name of the coversheet file will be something like: **PacifiCorp Monthly Gas Report 201602 COV.docx**
3. If the document is confidential, add CONF (for confidential). For example, the name of the coversheet file will be something like: **PacifiCorp Monthly Gas Report 201602 CONF.docx** and **PacifiCorp Monthly Gas Report 201602 COV CONF.docx**
4. All documents are required to be submitted in an electronically *searchable* format.
5. Documents need to reference the reason for the mandate that ordered the filing in Section B or C. If you are unable to reference a proceeding or explain the origin of your filing, please contact Energy Division Central Files.
6. To find a proceeding number (if you only have a decision number), go to <http://docs.cpuc.ca.gov/DecisionsSearchForm.aspx>; enter the decision number, and the results shown include the proceeding number.

## A. Document Name

Today's Date: 7/13/2017

1. Utility Name: PacifiCorp d/b/a Pacific Power (U 901 E)
2. Document Submission Frequency (Annual, Semi-Annual, YTD, Quarterly, Monthly, Weekly, Ad-hoc, Once, Other Event): Annual
3. Report Name: Electric Reliability Report
4. Reporting Interval (for this submission, e.g. 2015 Q1 – that data date): CY 2016
5. Document File Name (format as 1+2 + 3 + 4): 1 - PacifiCorp Annual Electric Reliability Report CY 2016
6. Append the confidential and/or cover sheet notation, as appropriate. PUBLIC

*Sample Document Names:*

*Utility Name + Submittal Frequency + Report Name + Year + Reporting Interval + (COV or CONF or both or neither)*

<i>PacifiCorp Annual Electric Reliability Report CY 2016 PUBLIC</i>	

7. Identify whether this filing is  original or  revision to a previous filing.
  - a. If revision, identify date of the original filing: [Click here to enter text.](#)

## B. Documents Related to a Proceeding

All submittals should reference both a proceeding and a decision, if applicable. If not applicable, leave blank and fill out Section C.

1. Proceeding Number (starts with R, I, C, A, or P plus 7 numbers): R.14-12-014
2. Decision Number (starts with D plus 7 numbers): 16-01-008
3. Ordering Paragraph (OP) Number from the decision: Ordering Paragraph 1

# Energy Division Central Files Document Coversheet

## C. Documents Submitted as Requested by Other Requirements

If the document submitted is in compliance with something other than a proceeding, (e.g. Resolution, Ruling, Staff Letter, Public Utilities Code, or sender's own motion), please explain:

## D. Document Summary

Provide a Document Summary that explains why this report is being filed with the Energy Division. This information is often contained in the cover letter, introduction, or executive summary.

D.16-01-008 OP 1 requires all electric utilities to submit system level and district or division level electric reliability information to the Commission on July 15 of each year.

## E. Sender Contact Information

1. Sender Name: Jennifer Angell
2. Sender Organization: PacifiCorp d/b/a Pacific Power (U 901 E)
3. Sender Phone: 503-331-4414
4. Sender Email: jennifer.angell@pacificcorp.com

## F. Confidentiality

1. Is this document confidential?  No  Yes

a. If Yes, provide an explanation of why confidentiality is claimed and identify the expiration of the confidentiality designation (e.g. Confidential until December 31, 2020.)

On January 14, 2016, the Commission approved D.16-01-008 updating the electric reliability reporting requirements for California electric utilities. D.16-01-008 requires utilities to submit annual information about planned outages to the Energy Division and the Safety and Enforcement Division on a confidential basis. As noted in D.16-01-008, "making planned outage data should be confidential to protect the public from potential harmful activities that could damage the grid and electric reliability." See D.16-01-008 at p.19. A signed declaration for confidential treatment is provided with submission of the annual electric reliability report for 2016.

## G. CPUC Routing

Energy Division's Director, Ed Randolph, requests that you not copy him on filings sent to Energy Division Central Files. Identify below any Commission staff that were copied on the submittal of this document.

1. Names of Commission staff that sender copied on the submittal of this Document: Mr. Timothy Sullivan, Mr. Edward Randolph, and Mr. David Lee

ver.5/19/2016

July 13, 2017

***VIA ELECTRONIC FILING***

Timothy Sullivan  
Executive Director  
California Public Utilities Commission  
505 Van Ness Avenue  
San Francisco, California 94102-3298


**RE: PacifiCorp (U 901-E) Annual Electric Reliability Report in Compliance  
with D.16-01-008**

In compliance with California Public Utilities Commission Decision (D.) 16-01-008, enclosed is PacifiCorp's Annual Electric Reliability Report for January 1, 2016 – December 31, 2016.

Please note that the planned outage data is considered confidential subject to California Public Utilities Code Section 583, General Order 66-C and D.16-01-008. In compliance with D.16-01-008, this information is submitted under seal. A signed declaration in support of the request for confidential treatment is also provided with this submission.

If you have any questions, please contact Heide Caswell, Director of Transmission and Distribution Asset Performance, at (503) 813-6216, or Cathie Allen, Regulatory Affairs Manager, at (503) 813-5934.

Very truly yours,

  
Etta Lockey  
Vice President, Regulation

Enclosure

C: Edward Randolph  
David K. Lee



Pacific Power's  
Annual Report:

California  
Electric Reliability Report

**Public Version**

Calendar Year 2016 Review  
(January 1 – December 31, 2016)

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## Introduction

In rulemaking R.14-12-014, the California Public Utilities Commission developed rules regarding changes to the state's required reliability reporting requirements for California investor owned electric utilities (IOUs), as outlined in D 16-01-008<sup>1</sup> (the Order). The report is being filed in compliance with those rules. The scope of the rulemaking included the following tasks:

1. Review of current reliability reporting requirements;
2. Develop revised annual reporting requirements that include information about frequency and duration of outages;
3. Define the term "local area" for reliability reporting;
4. Clarify the term "major event day" (to align with definition of local area for reliability reporting);
5. Develop criteria and methodology for identifying worst performing circuits;
6. Develop an approach for demonstrating cost-effective remediation and determining cost recovery procedures;
7. Consider whether the IOUs should be allowed to set up memorandum accounts for remediation costs; and
8. Develop an annual outreach plan and related reporting to inform customers about planned and unplanned outages.

The Order includes the following requirements:

1. IOUs shall submit system level and district or division level electric reliability information to the Commission on July 15 of each year.
2. IOUs shall submit draft copies of the reports prepared for July 15, 2016 and July 15, 2017 to the Energy Division Director in electronic format at least 45 days prior to the July 15 deadline. Draft copies for subsequent reporting years shall be required at the discretion of the Energy Division Director.
3. Commission staff, in consultation with the IOUs, has the authority to require any necessary revisions to the draft reports before they are made public.
4. Pacific Gas and Electric Company shall combine in one single report the electric reliability reporting requirements pursuant to Decision (D.) 96-09-045 and D.04-10-034.
5. IOUs shall use the electric reliability reporting template at Appendix B of the Order to create their annual reports.
6. IOUs shall publish on their internet websites or provide to customers via U.S. mail, procedures for making requests about electric circuits that serve their homes or businesses.
7. IOUs shall conduct at least one annual public in-person presentation about the information in their annual electric reliability reports.
8. IOUs shall make webinar participation available for their annual in-person events so that their customers can attend the presentation remotely or in-person.
9. Pacific Gas and Electric Company, Southern California Edison Company and San Diego Gas & Electric Company shall annually report the worst performing one percent of the circuits among all the electric circuits in their respective service territories.
10. Bear Valley Electric Service, Liberty Utilities, LLC and PacifiCorp shall report the following number of circuits on their list of worst performing circuits: three circuits for PacifiCorp; two circuits for Liberty Utilities, LLC; and one circuit for Bear Valley Electric Service.
11. IOUs shall provide reliability data at both the system and the district level. Whatever major event days are determined for calculations at the system level shall also be used for reliability calculations at the district or division level.

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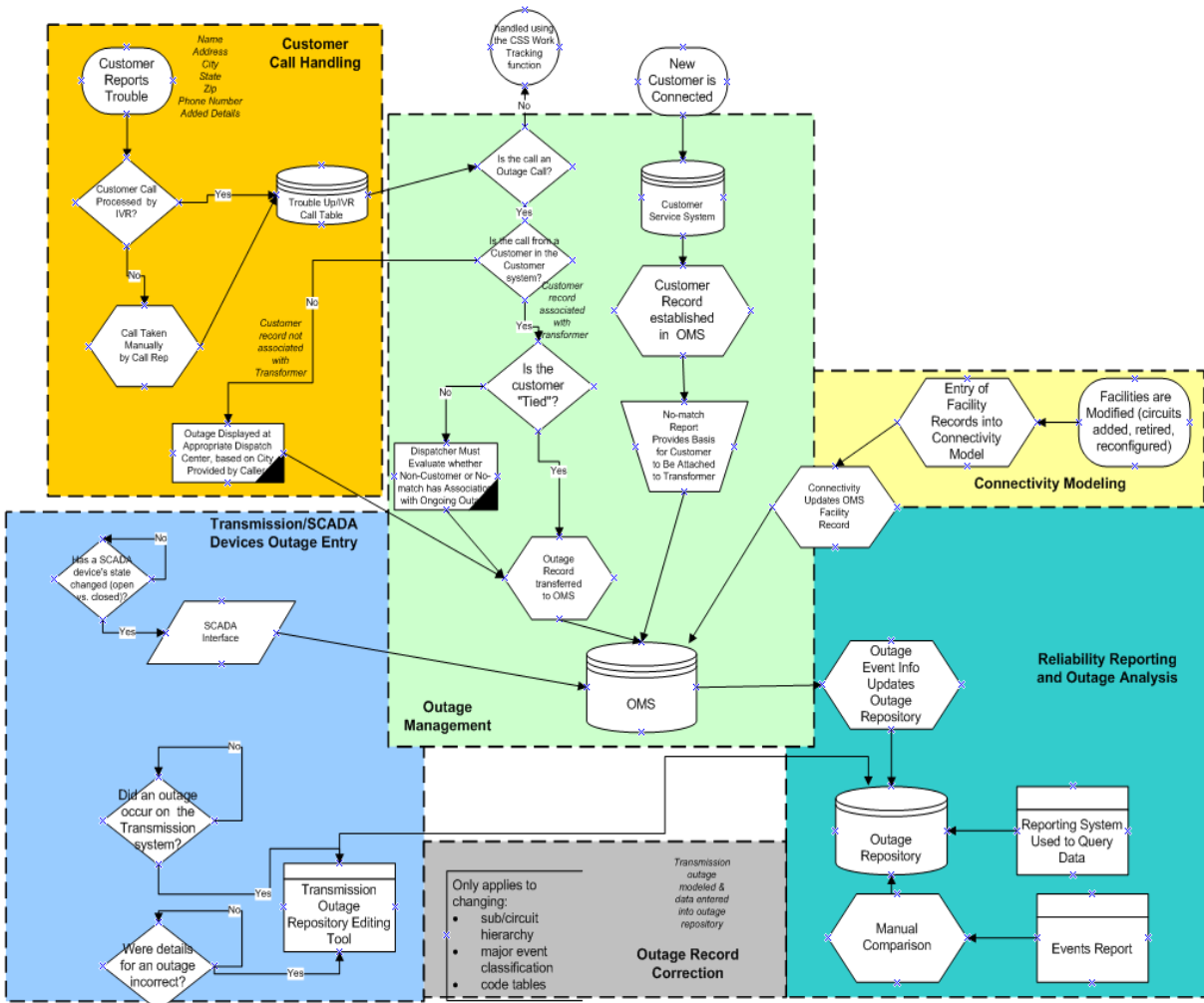
<sup>1</sup> D.16-01-008 <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M157/K724/157724560.PDF>

12. Pacific Gas and Electric Company, Southern California Edison Company and San Diego Gas & Electric Company shall respond to customer inquiries about electric reliability within 15 business days.
13. Bear Valley Electric Service, Liberty Utilities, LLC and PacifiCorp shall respond to customer inquiries about electric reliability within 30 business days.
14. IOUs should meet and confer to consolidate unidentified reliability reporting requirements from Commission decisions and General Orders into a single Commission decision and general order.
15. IOUs shall submit a single joint proposal for a proposed consolidated decision and general order to the directors of the Energy Division and the Safety and Enforcement Division within one year from the date of the Order.

This report serves to fulfill the foregoing requirements of the Order. In addition, this report includes a description of Pacific Power's outage data collection process, the applicable conventions, indices and definition, methods used by Pacific Power to determining cost-effective reliability improvement opportunities, Pacific Power's worst performing circuits and Pacific Power's service territory map.

### Outage Data Collection Process

Pacific Power operates automated outage management and reporting systems; a diagram of the data flow process is shown below. Customer trouble calls and SCADA events are interfaced with the Company's real-time network connectivity model, its CADOPS system (Computer Aided Distribution Operations System). By overlaying these events onto the network model, the program infers outages at the appropriate devices (such as a transformer, fuse or other interrupting device) for all customers down line of the interrupting device. The outage is then routed to appropriate field operations staff for restoration and the outage event is recorded in the Company's Prosper/US outage repository. In addition to this real-time model of the system's electrical flow, the Company relies heavily upon the SCADA system it has in place. This includes the Dispatch Log System (an SQL database application) which serves to collect all events on SCADA-operable circuits. That data is then analyzed for momentary interruptions to establish state-level and circuit-level momentary interruption indices. Only those circuits (and the customers who are served from those devices) outfitted with SCADA equipment are considered within the calculations.



### Data Collected: Conventions, Indices and Certain Definitions

SAIDI, SAIFI, CAIDI and MAIFI are the most common indicators or indices used by utilities across the nation for measuring and reporting reliability. Along with other indices, they were first rigorously documented in Institute of Electrical and Electronics Engineers (IEEE) Standard 1366-1998, and since modified in IEEE 1366-2003/2012, IEEE Guide for Electric Power Distribution Reliability Indices.

For performance reporting as contained within this document, Pacific Power uses the current standard indices, applied at the state level as well as to each of the districts in which it provides service; these serve as “local areas” as defined within reporting requirements. Major event days are calculated at the state level and then applied at each of these districts consistent with the requirements of D.16-01-008. Pacific Power collects outage data on all outages on the source side of their electric meter. When it is required to interrupt power in order to perform work on the system, it records these outages with a separate designation to identify whether they were taken without notice, or whether the outages were pre-arranged or planned. For the purposes of the data provided in this report, Planned Outages are those in which either the customer or the Company made arrangements for the power interruption to occur; these may also often be considered to be Maintenance Outages. Certain other outages may be performed intentionally by employees, without notice (such as when a car strikes a utility pole and the crew replacing the damaged pole takes an operational outage) but since they happen precipitously are not classified as Planned Outages. Furthermore, the Company also collects information about outages which happen on equipment at voltages higher than distribution level, specifically the transmission or generation system; transmission voltages



within Pacific Power are those in excess of 34.5 kilovolt (kV). If an interruption occurs to distribution customers as a result of events at those facilities it designates these outages as Loss of Supply outages and denotes them in this report as Transmission.

### Cost Effective Improvements

Pacific Power uses its reliability data in a variety of ways that are designed to improve reliability to its customers. It has devised methods that are contained in the industry guide for electric reliability, IEEE 1782-2014<sup>2</sup>. Some of these analytical methods render the outage data in a tabular, graphical and geospatial manner. All of them serve as input to identify and develop projects that improve reliability using the Company's fuse coordination program (Fuse It or Lose It: FIOI), its circuit hardening program (Saving SAIDI), and its capital construction program (Network Initiatives). It evaluates the history of outages within a circuit and at specific devices (fuses, reclosers, circuit breakers) across the entire service area and determines the probability of avoiding outages of specific cause categories. Based upon its history reducing these outages for various improvements undertaken, it will forecast the amount of improvement in customer interruptions and customer minutes without power. The programs (FIOI, Saving SAIDI and Network Initiatives) are evaluated for their forecast improvements to network reliability, as measured by the avoidance of customer interruptions, customer minutes interrupted and momentary customer interruptions. Each project has a value calculated for the cost of the project divided by the avoided interruptions. Pacific Power uses this cost per avoided customer interruption and customer minute interrupted to identify cost-effective reliability improvement projects. It assembles each of these candidate projects and their cost to benefit value into a project priority listing which rank orders the projects and based upon the best-cost projects, prepares a suite of projects that align with metric improvement and budget targets. As projects are completed the list is reevaluated to determine whether reliability performance or funding levels have changed and warrant modifications to the plan.

### Worst Performing Circuits

Further, Pacific Power calculates a "Circuit Performance Indicator" which is a blended metric for the circuit, applying weighted circuit SAIDI, SAIFI, MAIFI and breaker lockout events. This metric excludes outages which are Planned, Transmission or Major Events, and is identified as CPI<sub>99</sub>. The equation and weightings are detailed below.

#### **CPI<sub>99</sub>**

CPI<sub>99</sub> is an acronym for Circuit Performance Indicator, which uses key reliability metrics of the circuit to identify underperforming circuits. It excludes Major Event and Loss of Supply or Transmission outages. The variables and equation for calculating CPI are:

$$\text{CPI} = \text{Index} * ((\text{SAIDI} * \text{WF} * \text{NF}) + (\text{SAIFI} * \text{WF} * \text{NF}) + (\text{MAIFI}_E * \text{WF} * \text{NF}) + (\text{Lockouts} * \text{WF} * \text{NF}))$$

Index: 10.645

SAIDI: Weighting Factor 0.30, Normalizing Factor 0.029

SAIFI: Weighting Factor 0.30, Normalizing Factor 2.439

MAIFI<sub>E</sub>: Weighting Factor 0.20, Normalizing Factor 0.70

Lockouts: Weighting Factor 0.20, Normalizing Factor 2.00

Therefore,  $10.645 * ((3\text{-year SAIDI} * 0.30 * 0.029) + (3\text{-year SAIFI} * 0.30 * 2.439) + (3\text{-year MAIFI}_E * 0.20 * 0.70) + (3\text{-year breaker lockouts} * 0.20 * 2.00)) = \text{CPI Score}$

Those circuits whose scores are poorer (higher) than may be warranted, given the number of customers it serves, the exposure and the location of the circuit are identified as candidate worst performing circuits. Within five years

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<sup>2</sup> NEW P1782 (PE/T&D) Guide for Collecting, Categorizing and Utilization of Information Related to Electric Power Distribution Interruption Events was approved on March 27, 2014 and contains many of the approaches used by Pacific Power to evaluate system reliability and determine areas where improvements should be deployed.

of selection the score must be improved (lowered) by a targeted amount. If that improvement has not been achieved additional work may be implemented to further improve the circuit performance.

In selecting its three worst performing circuits, Pacific Power uses CPI99 as its preferred metric, as discussed above, and targets a 20% improvement in that metric within five years of selection. If a given circuit is identified as a worst performing circuit in successive years it would be asterisked and additional parameters would be required to be reported.

The Order directs utilities in the following manner regarding worst performing circuit selection.

b. Any circuit appearing on this list of “deficient” (WPC) circuits that also appeared on the previous year's list would be marked by an asterisk. For each asterisked circuit, each utility shall provide the following information:

- i. An explanation of why it was ranked as a "deficient" circuit, i.e., the value of the metric used to indicate its performance;
- ii. A historical record of the metric;
- iii. An explanation of why it was on the deficiency list again;
- iv. An explanation of what is being done to improve the circuit's future performance and the anticipated timeline for completing those activities (or an explanation why remediation is not being planned); and
- v. A quantitative description of the utility's expectation for that circuit's future performance.

Below are the circuits selected for performance for 2017. Since no circuit was a repeated selection<sup>3</sup> the details listed above are not being provided.

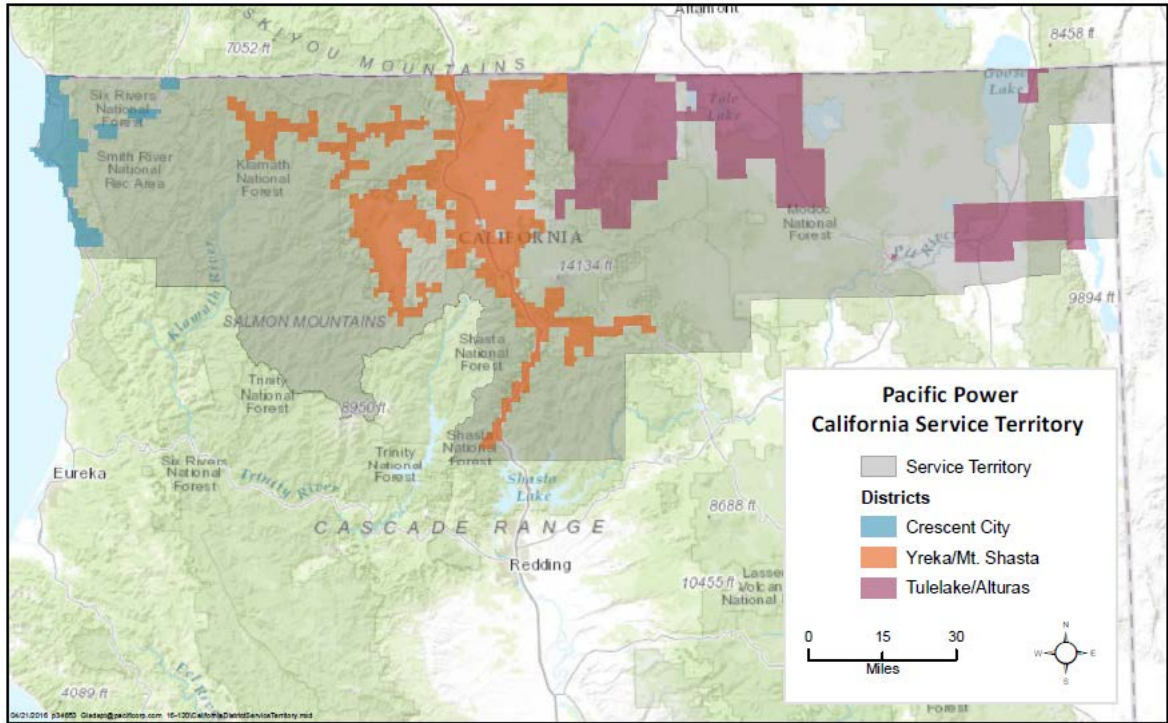
<b>Top 3 Worst Performing Circuits</b>			
<b>Program Year 17: (CY2016)</b>			
<b>Circuit Name</b>	<b>Scott Bar (5G40)</b>	<b>Etna Tie (5G41)</b>	<b>Pine Grove (5R152)</b>
<b>District</b>	Yreka/Mt. Shasta	Yreka/Mt. Shasta	Crescent City
<b>Customer Count</b>	352	1,402	1,671
<b>Substation Name</b>	Scott Bar	Walker- Bryan	Belmont
<b>Circuit-Miles</b>	64.9 miles	112.8 miles	51.5 miles
<b>% UG</b>	8%	22%	23%
<b>% OH</b>	92%	78%	77%
<b># Breaker/Recloser Operations<sup>4</sup></b>	4	2	33
<b>CPI99 Baseline</b>	540	85	144
<b>Preferred Baseline</b>	<b>432</b>	<b>68</b>	<b>115</b>

<sup>3</sup> In 2016 the three distribution circuits identified as concerns were Sawmill (5R171), Pioneer (5G79), and Town (5L83).

<sup>4</sup> 2016 Substation breaker reads are based on logged breaker counter readings entered during substation inspections.

# Service Territory Map

The graphic below shows Pacific Power's service territory and identifies the districts used in this report.



## State Reliability Underlying Indices - Excluding Planned Outages: Ten-Year SAIDI, SAIFI, MAIFI and CAIDI Results

PacifiCorp uses the current standard indices for performance reporting, as described within this document, at the state level and at newly-defined reliability reporting regional levels. System Indices are calculated based on the IEEE 1366 method, which excludes Planned and ISO outages and included generation outages. Major Events are determined using the “2.5 beta” statistical method to determine the threshold for a major event, as outlined in IEEE P1366. Major event days are removed from the reliability indices calculation. For more on the current year’s major events see Section 7.

### Distribution

Distribution outages include any outage where the device which operates is downstream of the high side disconnect of the substation down to the customer’s meter.

Distribution System Indices								
	Major Events Included <sup>1</sup>				Major Events Excluded <sup>2</sup> (2.5 β P1366)			
Year	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>
2016	130.8	0.858	152	2.554	96.2	0.719	134	2.554
2015	297.5	1.110	268	4.330	100.0	0.674	148	4.330
2014	199.4	0.889	224	2.640	160.8	0.840	191	2.640
2013	127.4	0.740	172	4.171	123.1	0.705	174	4.171
2012	341.3	1.248	273	6.936	165.5	1.015	163	6.936
2011	143.0	1.047	137	8.550	143.0	1.047	137	8.550
2010	725.7	1.726	421	16.266	205.0	1.302	157	16.266
2009	173.5	1.145	151	7.597	173.4	1.145	151	7.597
2008	460.8	2.130	216	7.203	206.9	1.518	136	7.203
2007	352.4	1.373	257	6.737	113.9	0.851	134	6.737

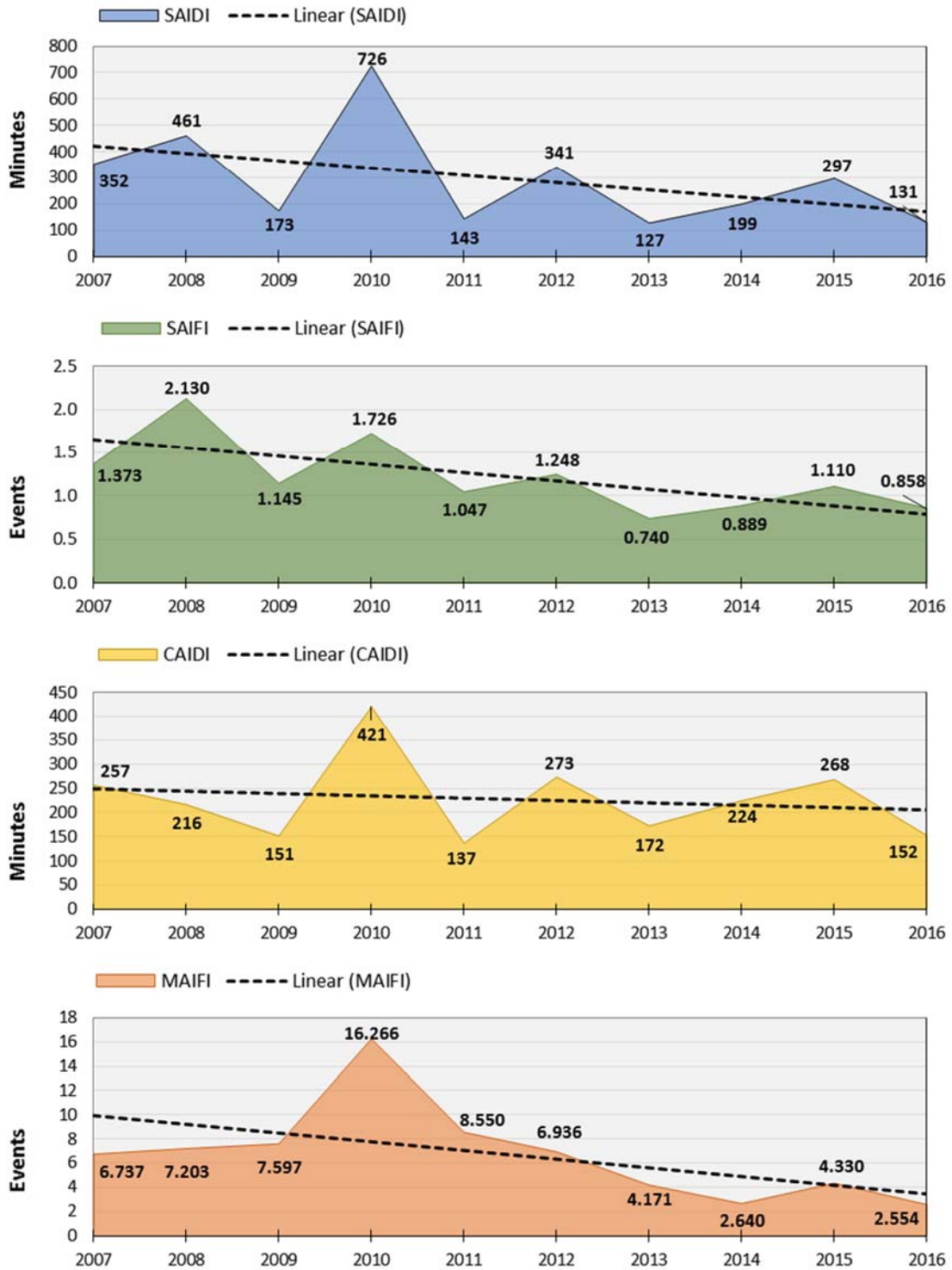
Notes:

1 - Excludes outages that are customer requested, pre-arranged (which can include short notice emergency prearranged outages), forced outages mandated by public authority, or resulting from a failure of another company's system.

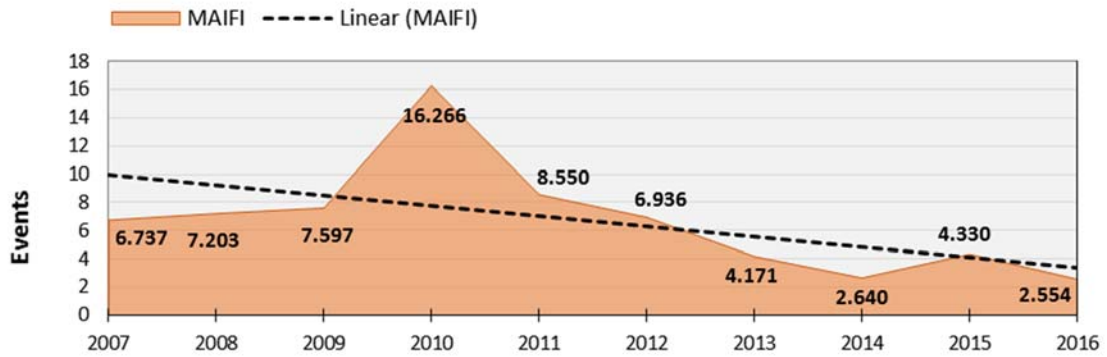
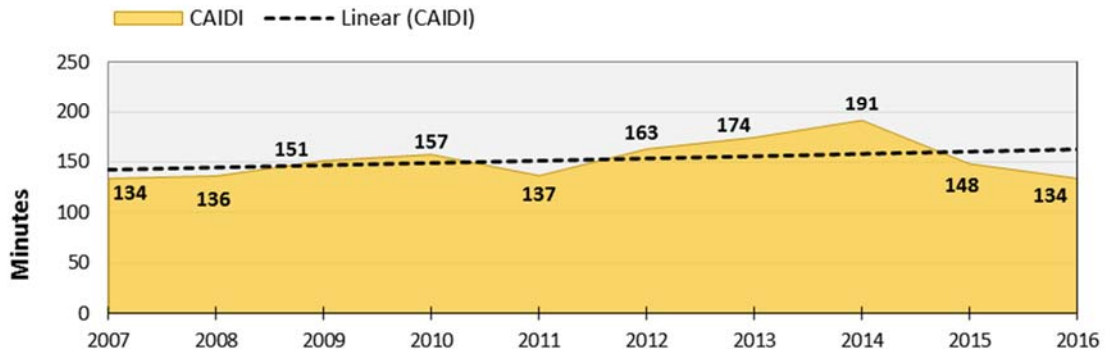
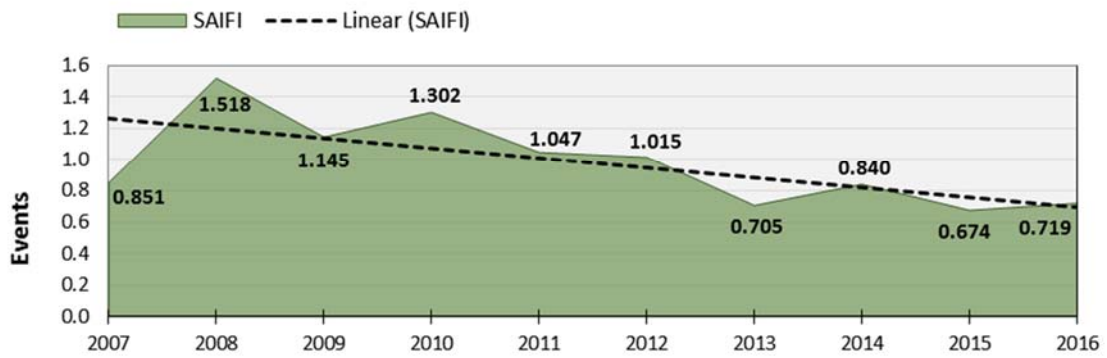
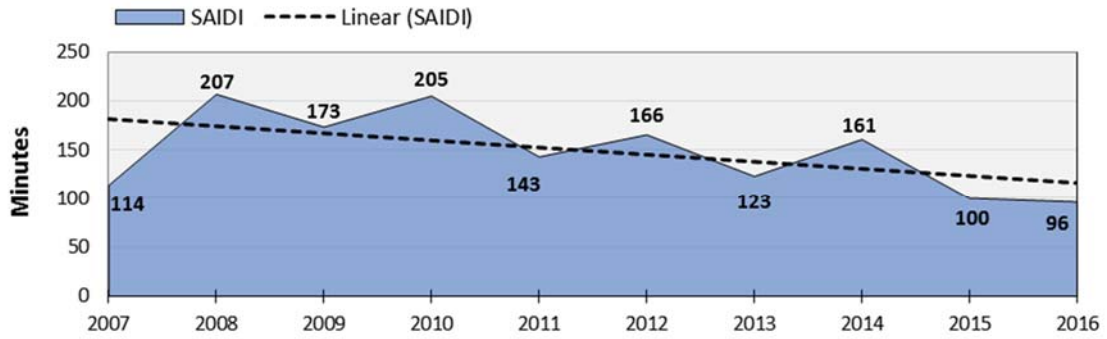
2 - In 2016 rulemaking 14-12-014, approved local Major Event exclusion. 2015 Local events were reviewed and are excluded from the indices going forward.

3 - These results are inclusive of outages that occurred during major events and are assumed to be associated with distribution performance.

### Distribution Reliability History - Including Major Events (excludes customer notice given and customer requested)



### Distribution Reliability History - Excluding Major Events (excludes customer notice given and customer requested)



## Transmission

Transmission outages include any outage where the device which operates is upstream of the substation transformer. This can include outages that are the result of generator operations. Transmission voltages are in excess of 34.5 kilovolt (kV).

Transmission System Indices								
Year	Major Events Included <sup>1</sup>				Major Events Excluded <sup>2</sup> (2.5 & P1366)			
	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>
2016	88.1	1.057	83	2.554	46.5	0.714	65	2.554
2015	230.4	1.824	126	4.330	81.9	1.013	81	4.330
2014	230.5	1.089	212	2.640	72.7	0.586	124	2.640
2013	189.9	2.117	90	4.171	88.8	1.535	58	4.171
2012	160.5	1.742	92	6.936	94.0	1.225	77	6.936
2011	134.2	1.248	107	8.550	134.2	1.248	107	8.550
2010	462.2	2.826	164	16.266	247.3	2.529	98	16.266
2009	157.0	1.377	114	7.597	102.3	0.929	110	7.597
2008	470.8	1.983	237	7.203	111.2	0.822	135	7.203
2007	163.8	2.297	71	6.737	86.2	1.738	50	6.737

Notes:

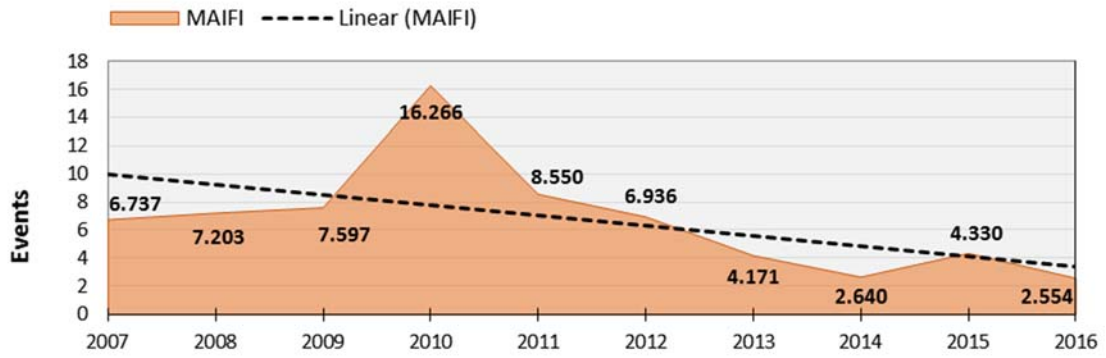
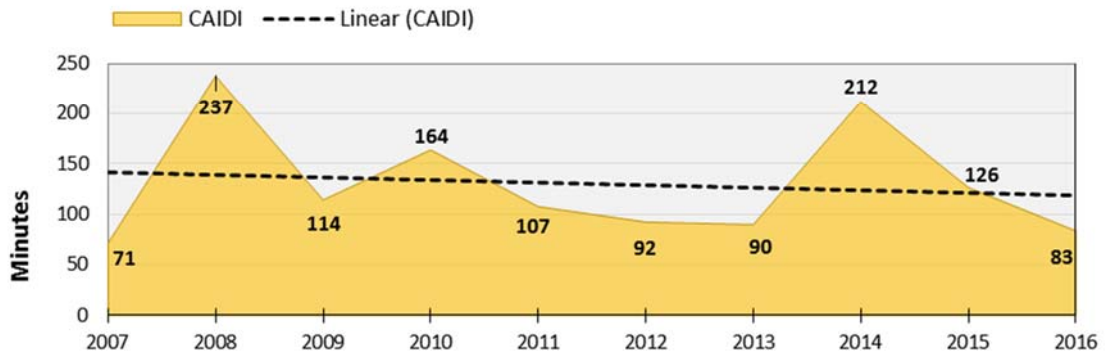
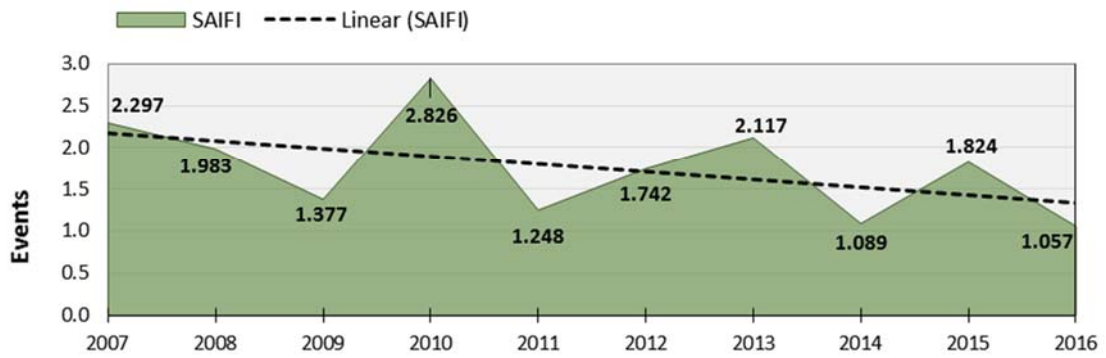
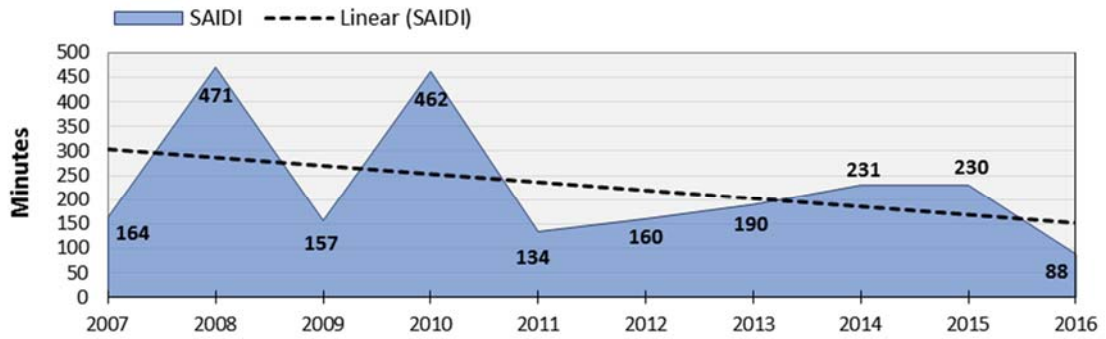
1 - Excludes outages that are customer requested, pre-arranged (which can include short notice emergency prearranged outages), forced outages mandated by public authority, or resulting from a failure of another company's system.

2 - In 2016 rulemaking 14-12-014, approved local Major Event exclusion. 2015 Local events were reviewed and are excluded from the indices going forward.

3 - These results are inclusive of outages that occurred during major events and are assumed to be associated with distribution performance.

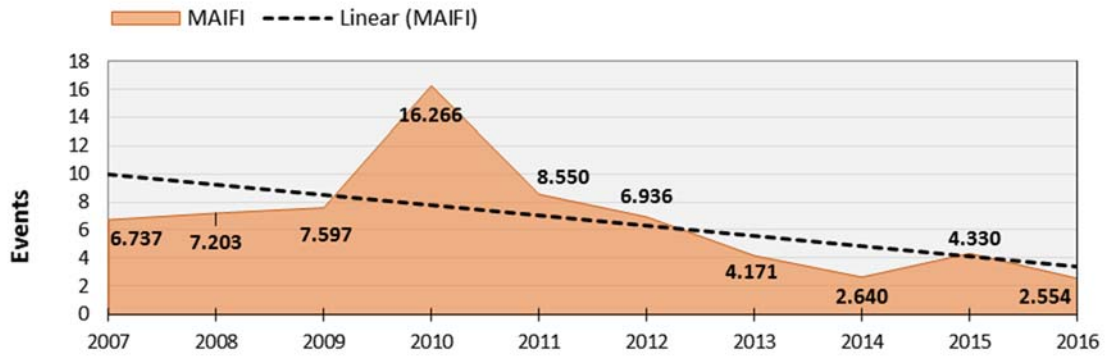
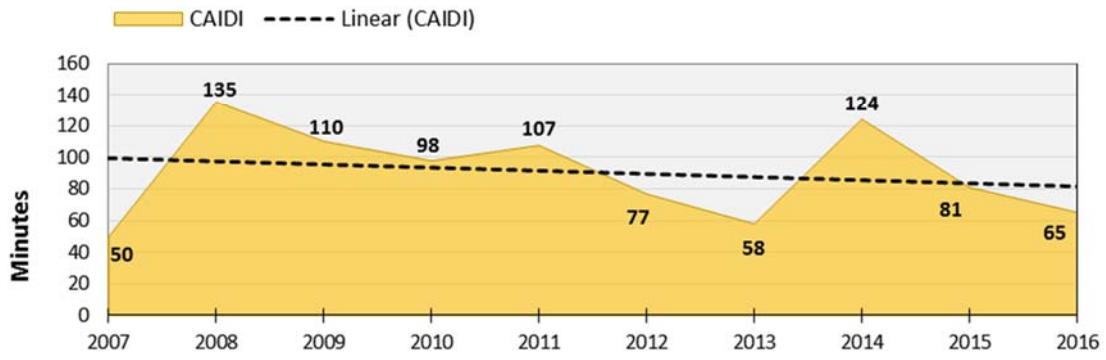
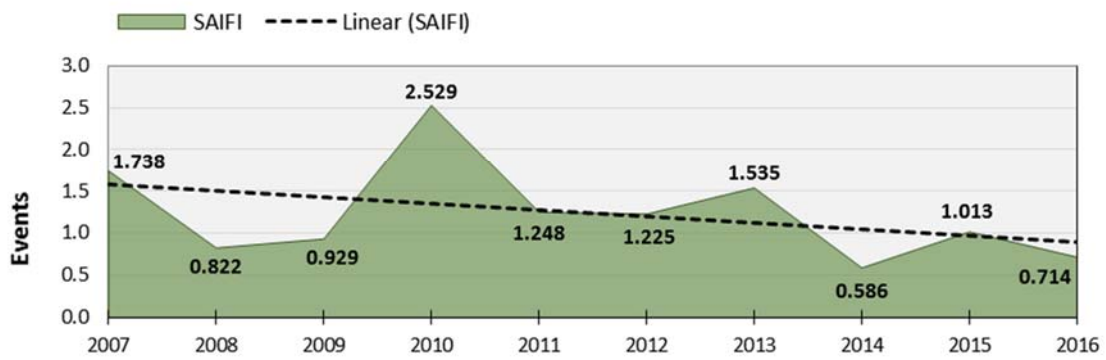
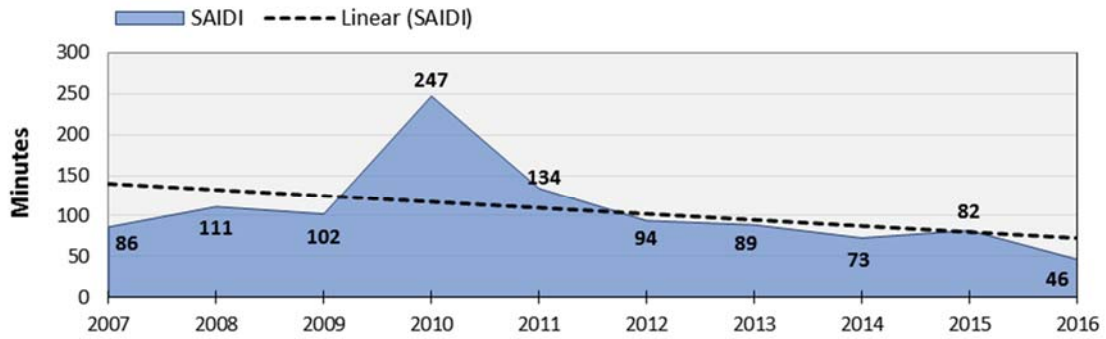


### Transmission Reliability History - Including Major Events (excludes customer notice given and customer requested)





### Transmission Reliability History - Excluding Major Events (excludes customer notice given and customer requested)



## Combined Transmission and Distribution

Combined Transmission and Distribution System Indices								
	Major Events Included <sup>1</sup>				Major Events Excluded <sup>2</sup> (2.5 B P1366)			
Year	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>
2016	218.9	1.915	114	2.554	142.7	1.433	100	2.554
2015	527.8	2.934	180	4.330	181.9	1.687	108	4.330
2014	430.0	1.978	217	2.640	233.6	1.426	164	2.640
2013	317.3	2.857	111	4.171	211.9	2.240	95	4.171
2012	501.8	2.990	168	6.936	259.5	2.240	116	6.936
2011	277.2	2.295	121	8.550	277.2	2.295	121	8.550
2010	1187.9	4.552	261	16.266	452.3	3.831	118	16.266
2009	330.5	2.522	131	7.597	275.7	2.074	133	7.597
2008	931.6	4.113	227	7.203	318.1	2.341	136	7.203
2007	516.2	3.670	141	6.737	200.1	2.589	77	6.737

Notes:

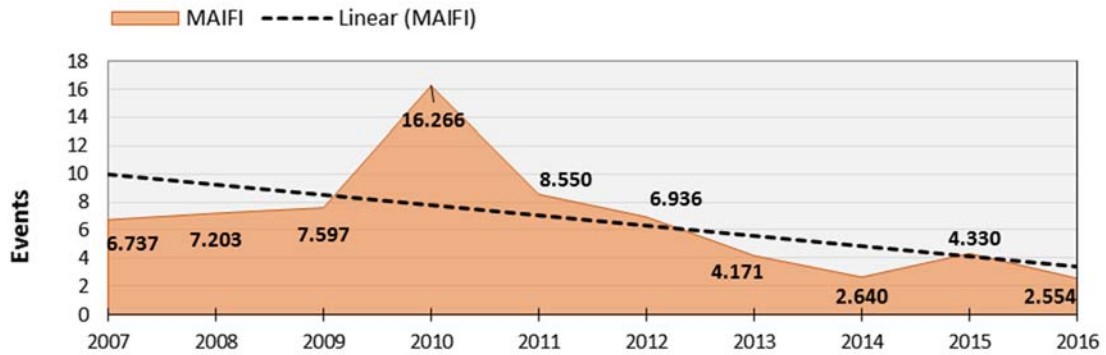
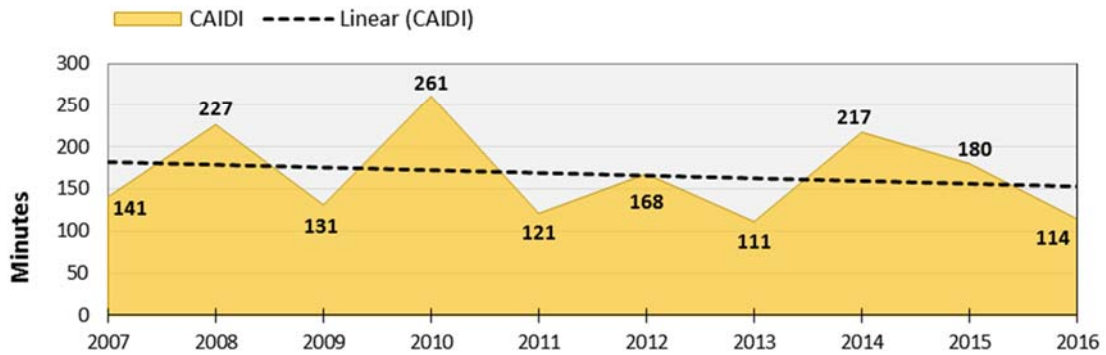
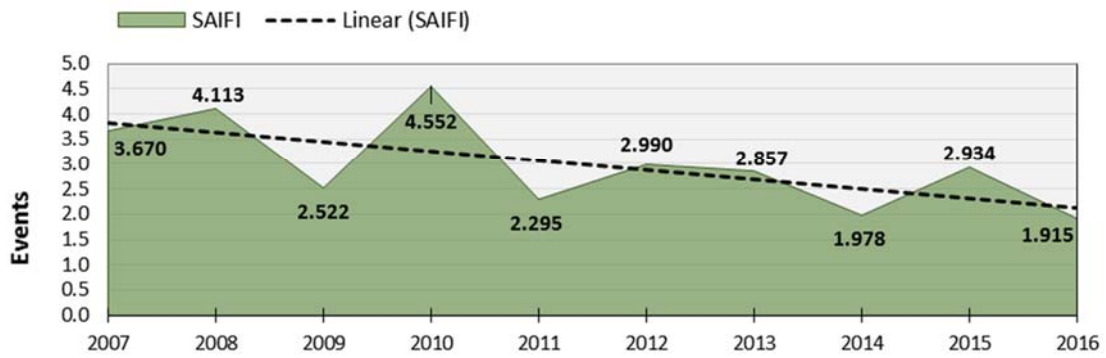
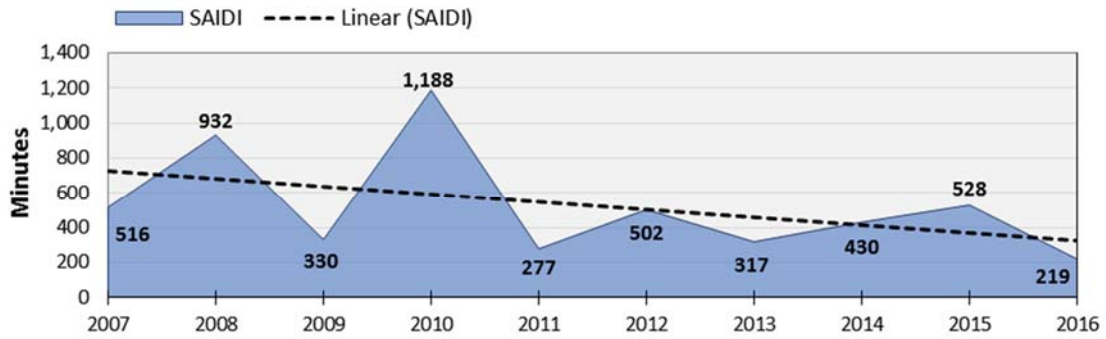
1 - Excludes outages that are customer requested, pre-arranged (which can include short notice emergency prearranged outages), forced outages mandated by public authority, or resulting from a failure of another company's system.

2 - In 2016 rulemaking 14-12-014, approved local Major Event exclusion. 2015 Local events were reviewed and are excluded from the indices going forward.

3 - These results are inclusive of outages that occurred during major events and are assumed to be associated with distribution performance.

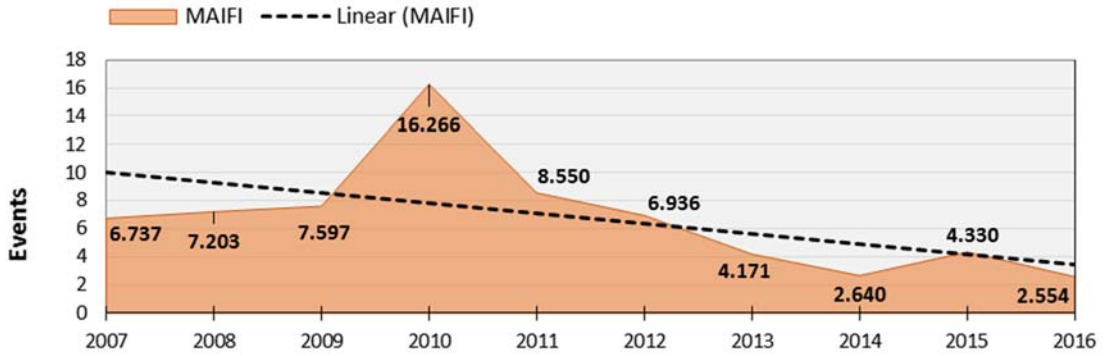
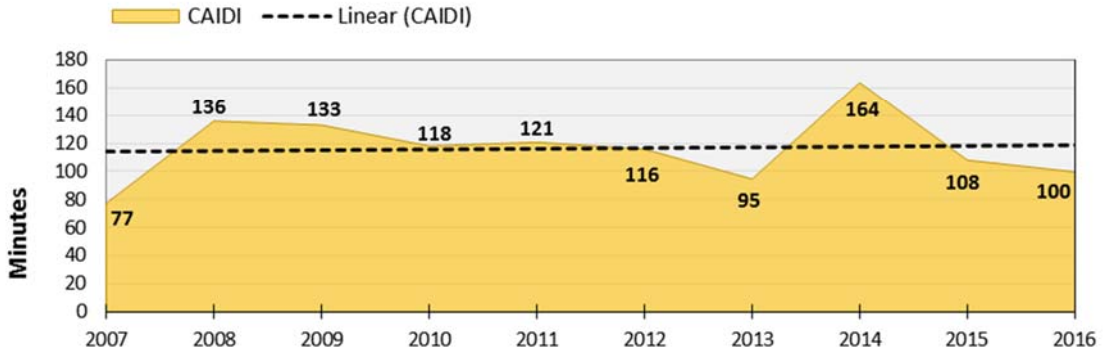
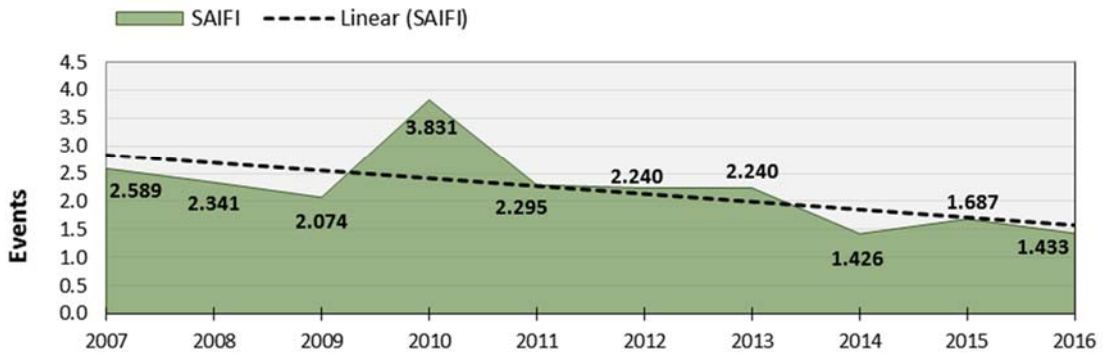
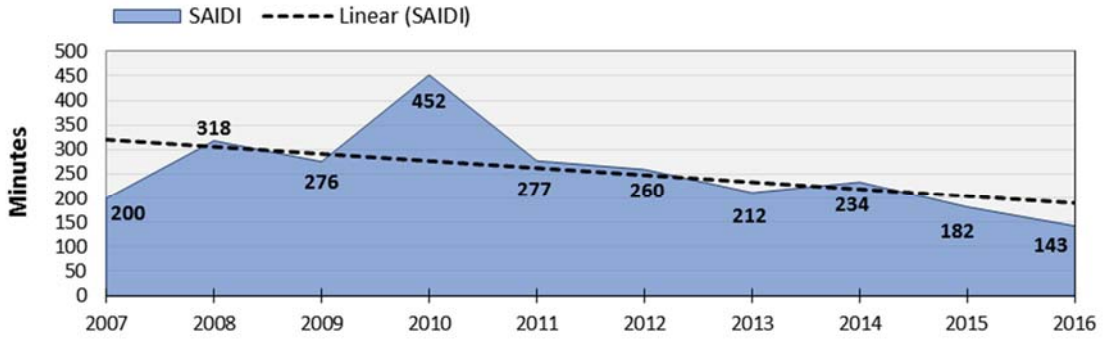
## Transmission and Distribution Reliability History - Including Major Events

(excludes customer notice given and customer requested)



## Transmission and Distribution Reliability History - Excluding Major Events

(excludes customer notice given and customer requested)



## District Reliability Underlying Indices - Excluding Planned Outages: Ten-Year SAIDI, SAIFI and CAIDI Results

### Crescent City

Crescent City - District System Indices								
	Major Events Included <sup>1</sup>				Major Events Excluded <sup>2</sup> (2.5 B P1366)			
Year	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>
2016	343.7	2.644	130	0.000	161.6	1.431	113	0.000
2015	949.5	2.495	381	2.482	96.7	0.776	125	2.482
2014	846.7	2.967	285	0.000	318.2	1.592	200	0.000
2013	105.4	0.615	171	0.000	105.4	0.615	171	0.000
2012	453.0	4.115	110	0.000	391.4	3.770	104	0.000
2011	191.9	1.263	152	0.000	191.9	1.263	152	0.000
2010	228.2	1.944	117	0.895	227.5	1.939	117	0.895
2009	265.3	1.902	139	3.176	265.3	1.902	139	3.176
2008	939.8	2.773	339	0.683	175.8	1.009	174	0.683
2007	334.1	3.942	85	0.000	128.5	2.354	55	0.000

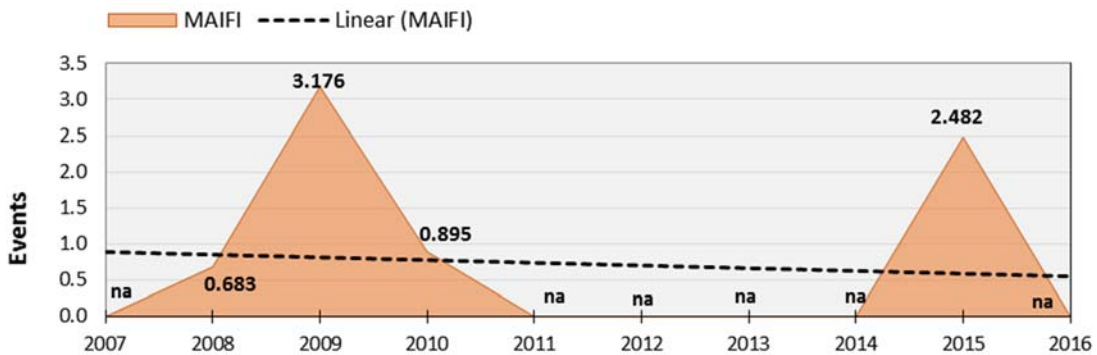
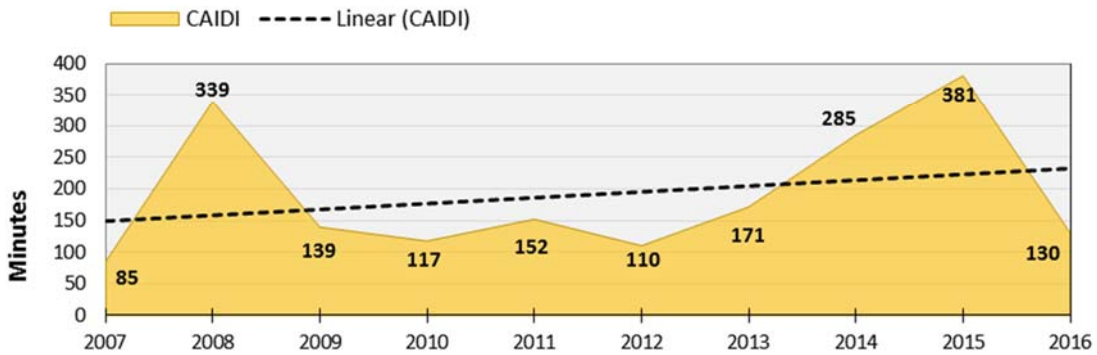
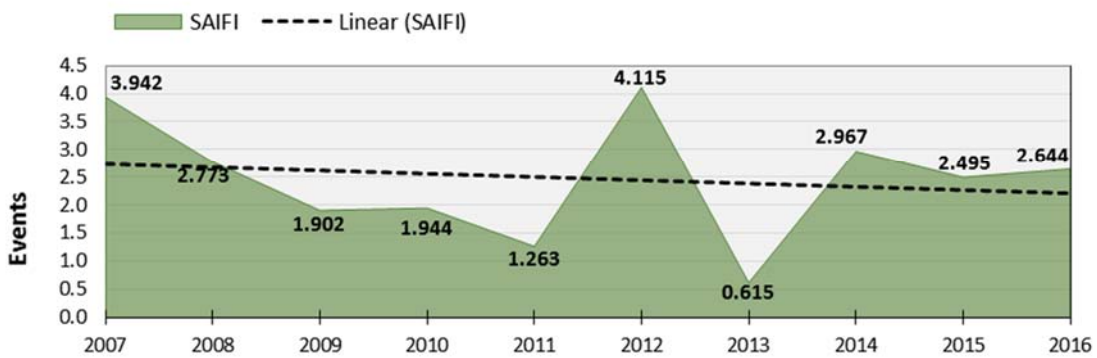
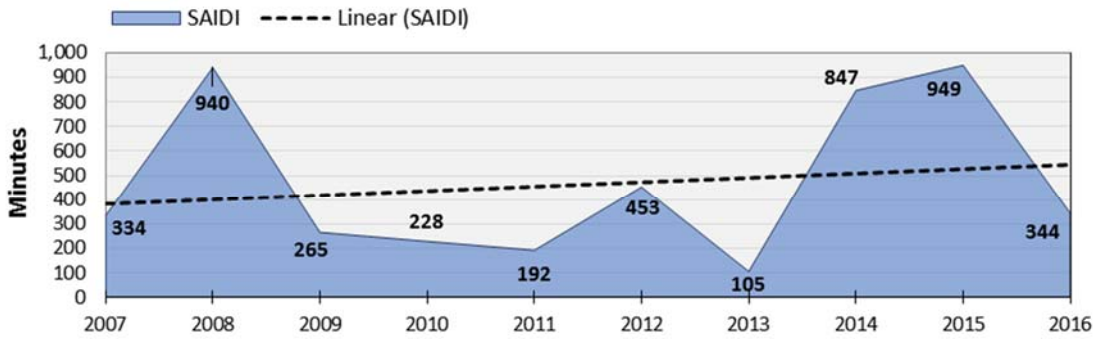
Notes:

1 - Excludes outages that are customer requested, pre-arranged (which can include short notice emergency prearranged outages), forced outages mandated by public authority, or resulting from a failure of another company's system.

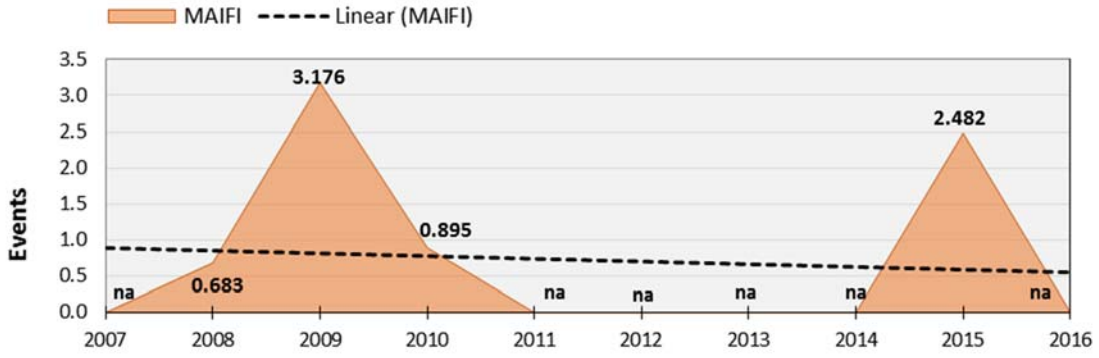
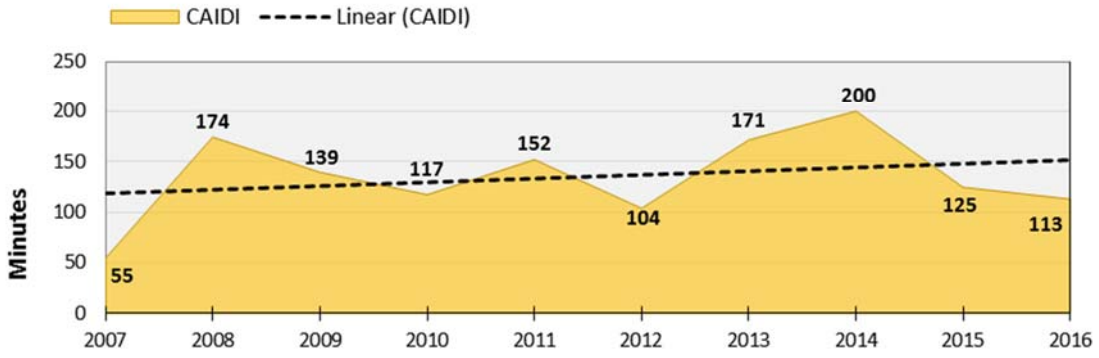
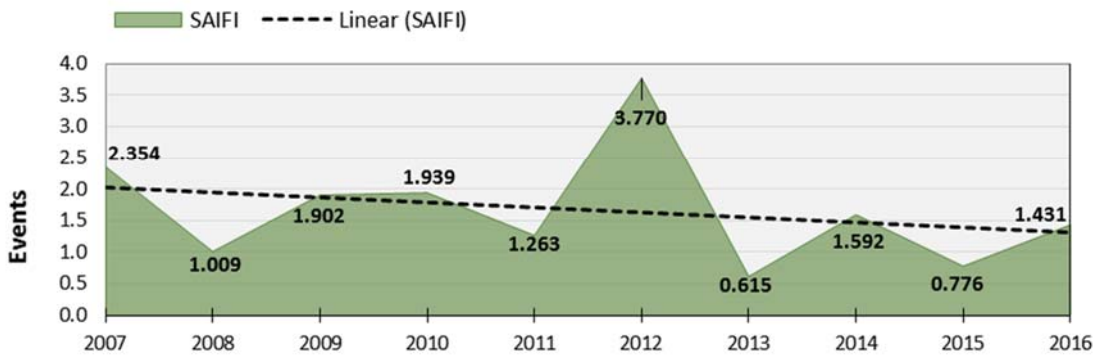
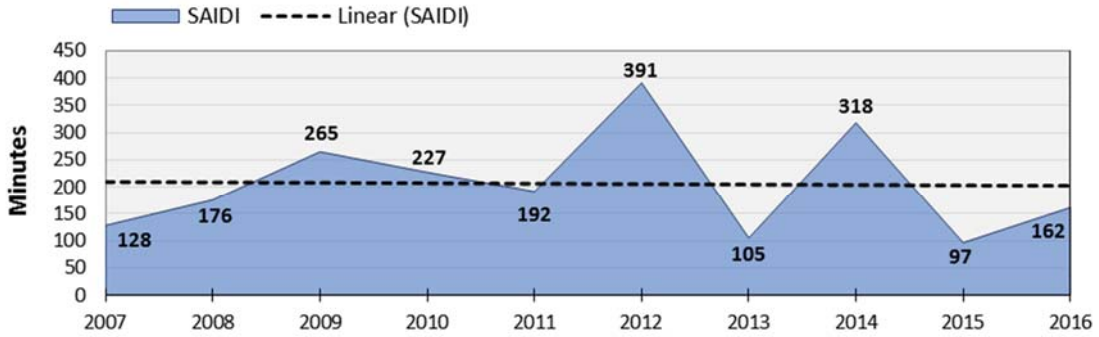
2 - In 2016 rulemaking 14-12-014, approved local Major Event exclusion. 2015 Local events were reviewed and are excluded from the indices going forward.

3 - These results are inclusive of outages that occurred during major events and are assumed to be associated with distribution performance.

### Crescent City Reliability History - Including Major Events (excludes customer notice given and customer requested)



### Crescent City Reliability History - Excluding Major Events (excludes customer notice given and customer requested)





Yreka/Mt. Shasta - District System Indices								
Year	Major Events Included <sup>1</sup>				Major Events Excluded <sup>2</sup> (2.5 & P1366)			
	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>
2016	184.6	1.689	109	1.923	146.4	1.455	101	1.923
2015	349.2	3.188	110	4.328	230.3	2.290	101	4.328
2014	303.0	1.738	174	2.666	222.0	1.437	155	2.666
2013	409.8	3.847	107	4.042	231.3	2.821	82	4.042
2012	616.1	2.967	208	7.268	228.1	1.838	124	7.268
2011	349.9	2.913	120	9.436	349.9	2.913	120	9.436
2010	1724.0	5.618	307	18.208	464.7	4.389	106	18.208
2009	346.8	2.302	151	7.978	255.7	1.608	159	7.978
2008	1081.7	5.201	208	7.615	400.3	3.023	132	7.615
2007	657.7	3.892	169	6.833	234.9	2.872	82	6.833

Notes:

1 - Excludes outages that are customer requested, pre-arranged (which can include short notice emergency prearranged outages), forced outages mandated by public authority, or resulting from a failure of another company's system.

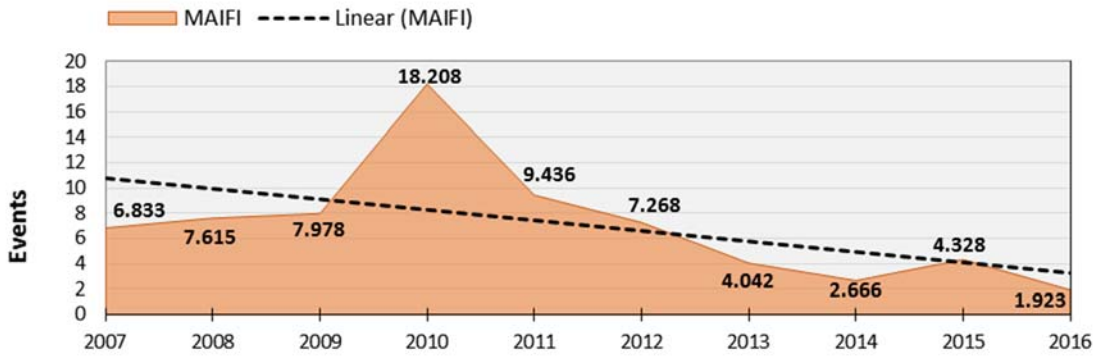
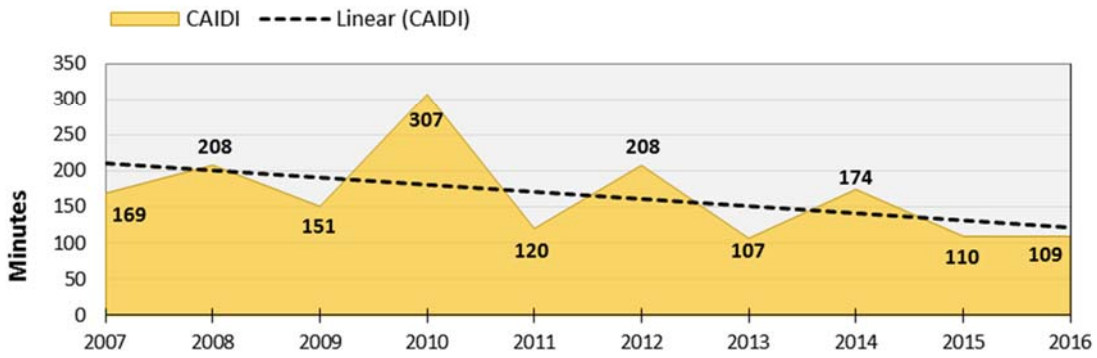
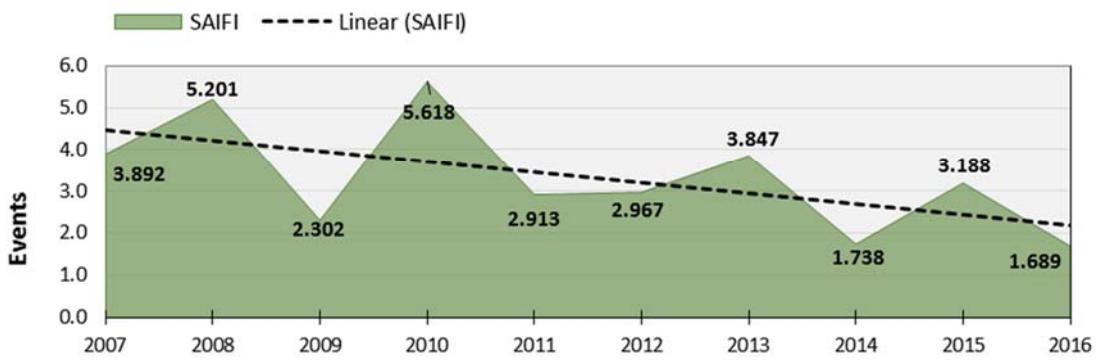
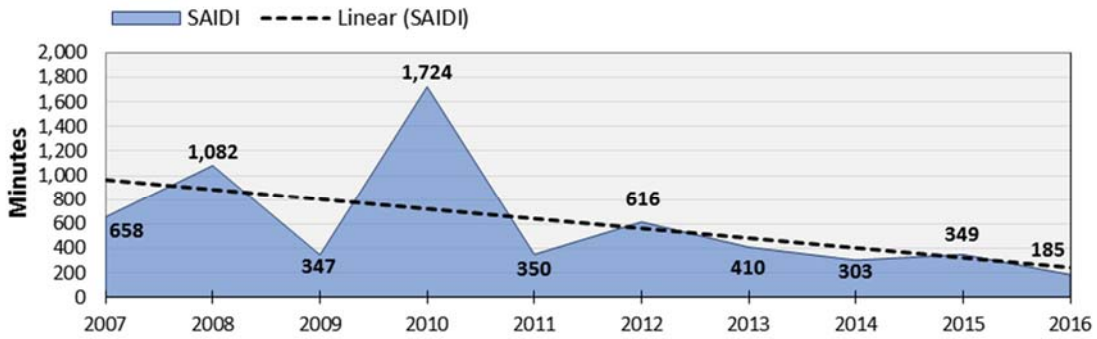
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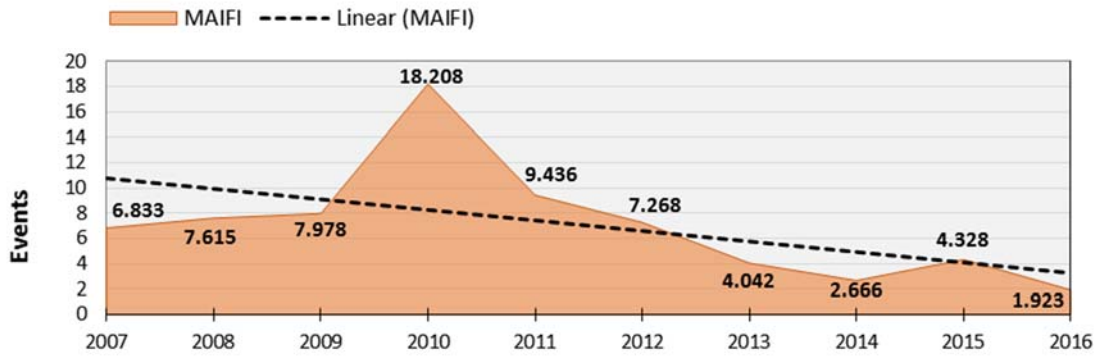
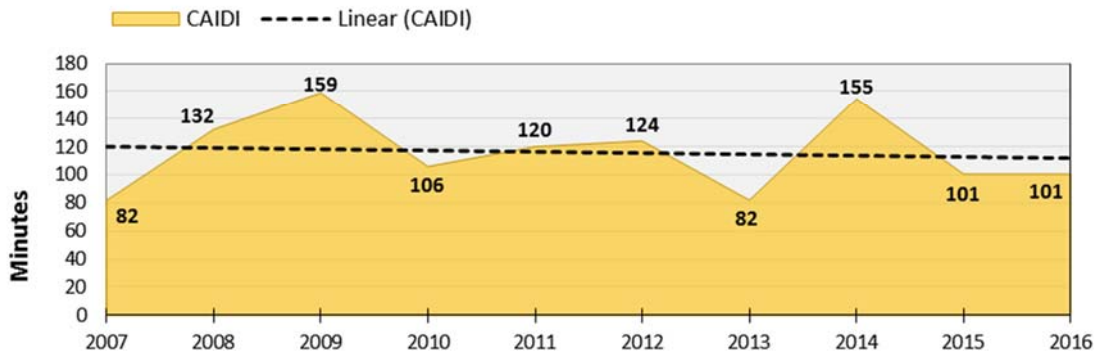
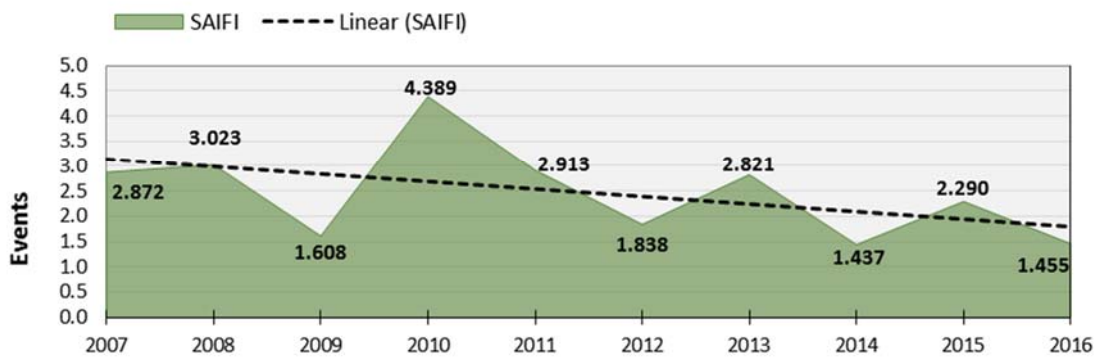
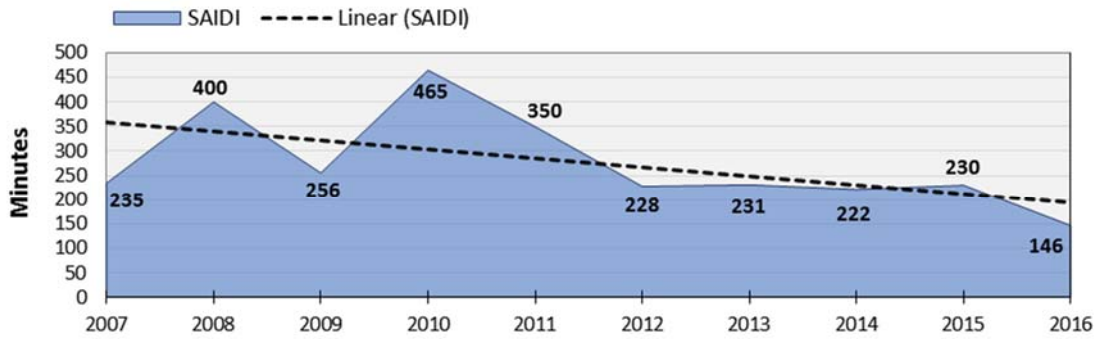
## Yreka/Mt. Shasta Reliability History - Including Major Events

(excludes customer notice given and customer requested)



## Yreka/Mt. Shasta Reliability History - Excluding Major Events

(excludes customer notice given and customer requested)



Tulelake/Alturas - District System Indices								
Year	Major Events Included <sup>1</sup>				Major Events Excluded <sup>2</sup> (2.5 & P1366)			
	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>
2016	128.7	1.518	85	9.386	95.3	1.389	69	9.386
2015	462.3	2.739	169	5.237	147.1	0.978	150	5.237
2014	171.2	1.126	152	4.755	125.0	1.083	115	4.755
2013	341.4	3.067	111	8.754	329.6	2.925	113	8.754
2012	142.7	1.033	138	10.761	142.7	1.033	138	10.761
2011	146.2	1.745	84	9.851	146.2	1.745	84	9.851
2010	828.5	5.114	162	16.017	814.1	5.084	160	16.017
2009	385.0	4.518	85	10.354	373.6	4.217	89	10.354
2008	339.8	2.308	147	6.926	256.1	2.095	122	6.926
2007	288.8	2.306	125	8.843	192.5	1.906	101	8.843

## Notes:

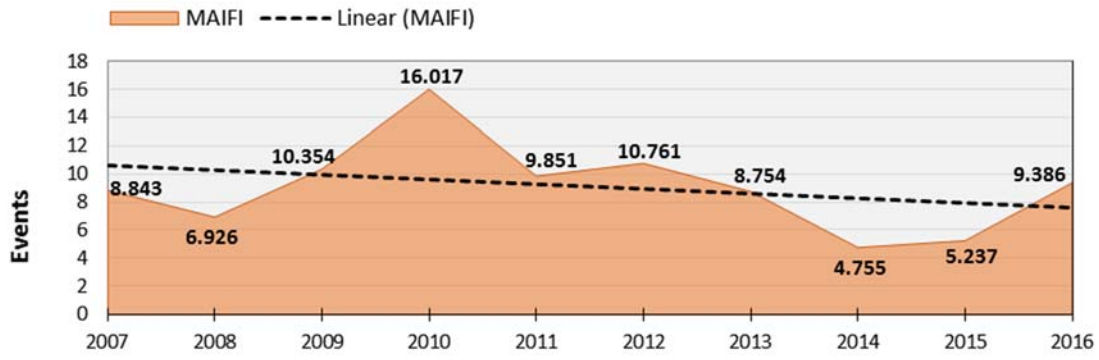
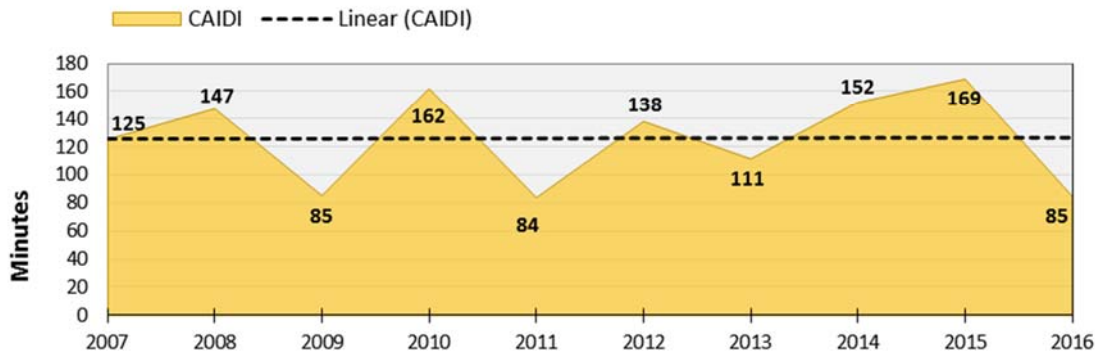
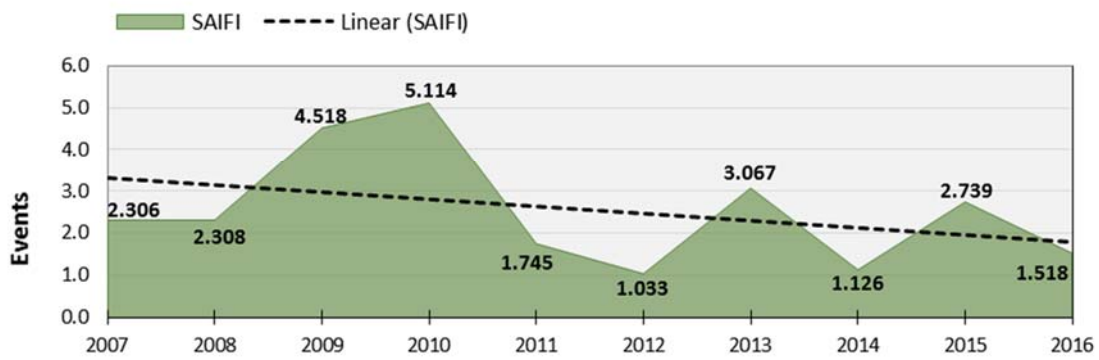
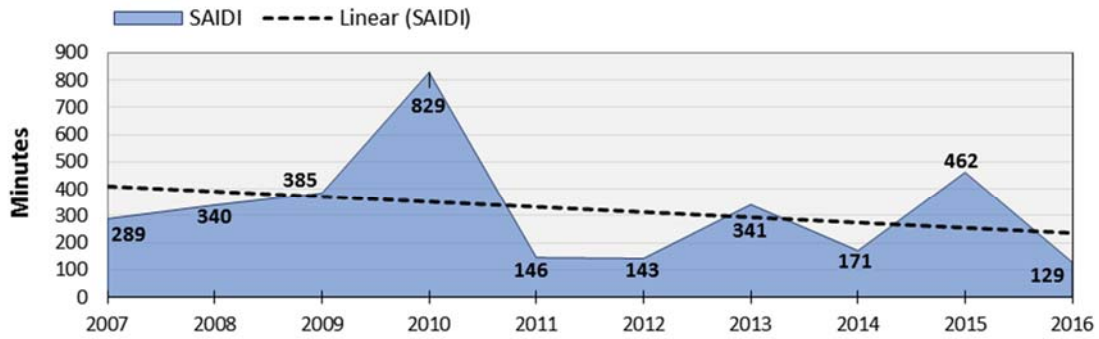
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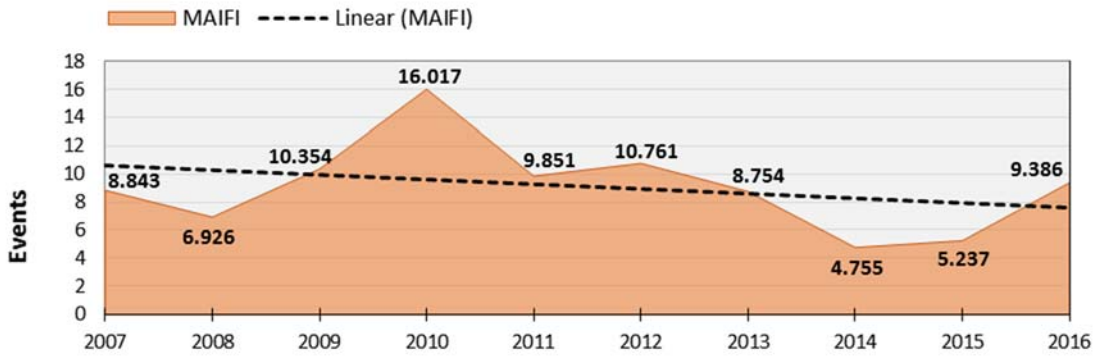
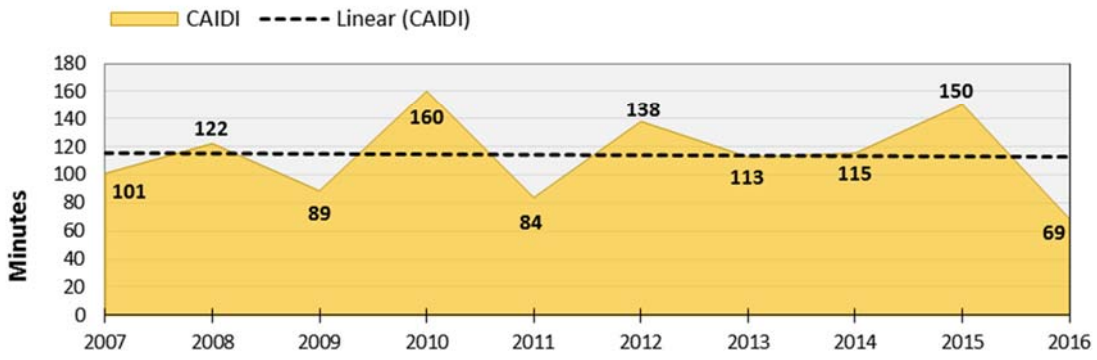
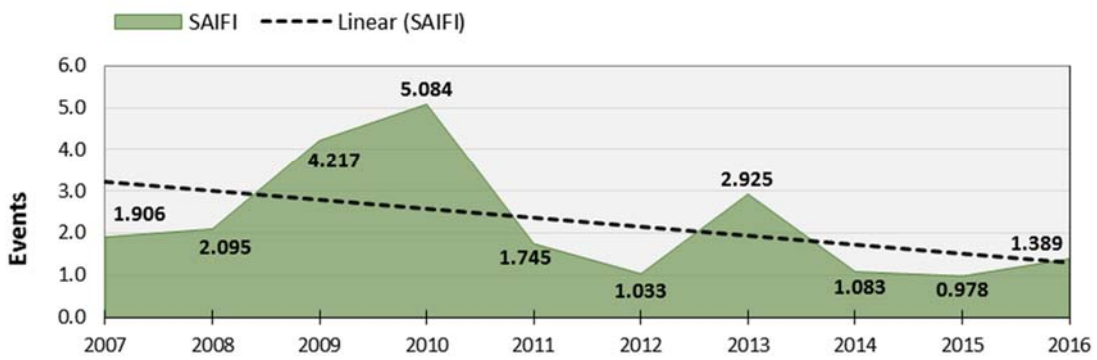
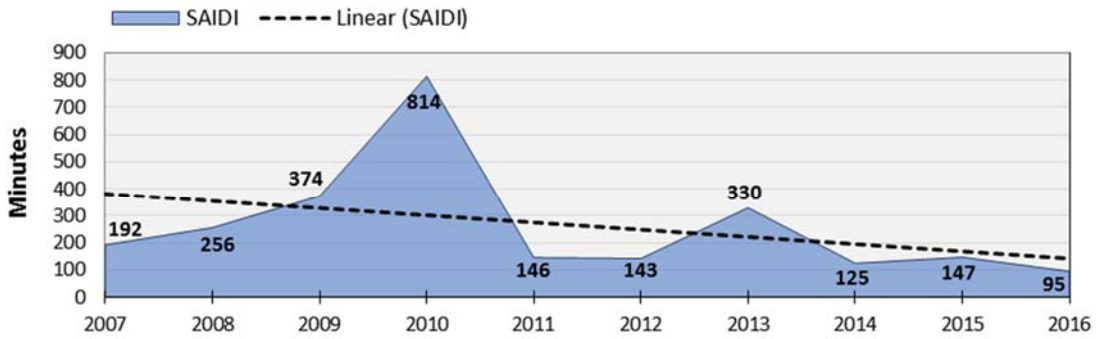
3 - These results are inclusive of outages that occurred during major events and are assumed to be associated with distribution performance.

## Tulelake/Alturas Reliability History - Including Major Events

(excludes customer notice given and customer requested)



### Tulelake/Alturas Reliability History - Excluding Major Events (excludes customer notice given and customer requested)



## State and District Reliability Underlying Indices - Including Planned Outages: Ten-Year Year SAIDI, SAIFI and CAIDI Results

### State

State - District System Indices								
	Major Events Included <sup>1</sup>				Major Events Excluded <sup>2</sup> (2.5 § P1366)			
Year	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>
2016	273.8	2.179	126	2.554	197.6	1.697	116	2.554
2015	554.5	3.042	182	4.330	208.6	1.795	116	4.330
2014	455.4	2.107	216	2.640	259.0	1.554	167	2.640
2013	344.6	2.959	116	4.171	239.1	2.342	102	4.171
2012	512.9	3.046	168	6.936	270.7	2.296	118	6.936
2011	298.9	2.414	124	8.550	298.9	2.414	124	8.550
2010	1209.4	4.725	256	16.266	473.7	4.003	118	16.266
2009	351.8	2.594	136	7.597	297.0	2.146	138	7.597
2008	955.9	4.252	225	7.203	342.3	2.480	138	7.203
2007	525.5	3.714	141	6.737	209.4	2.633	80	6.737

Notes:

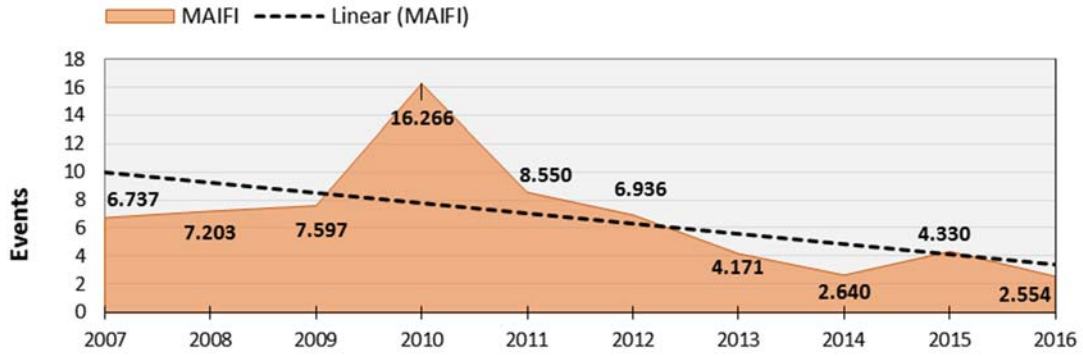
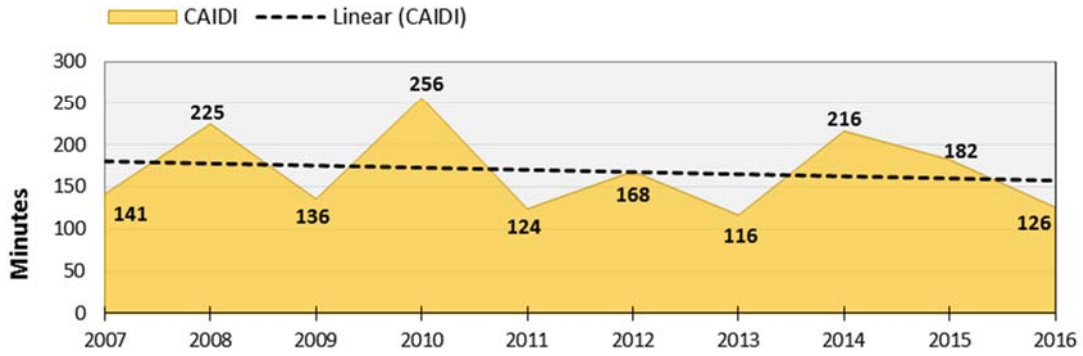
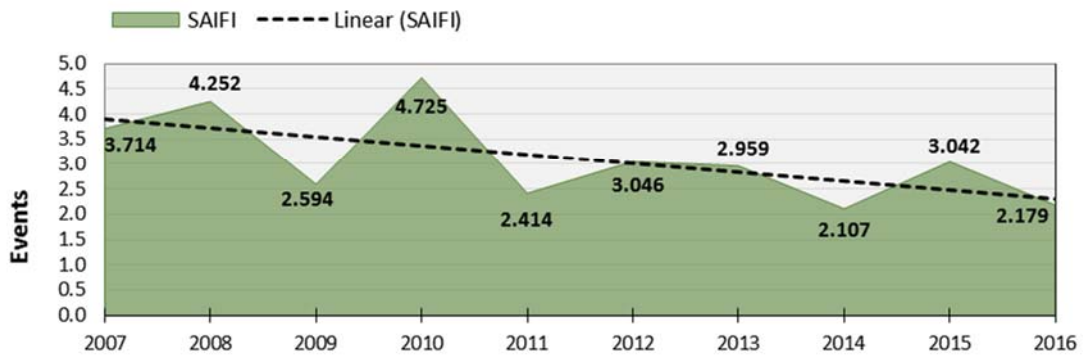
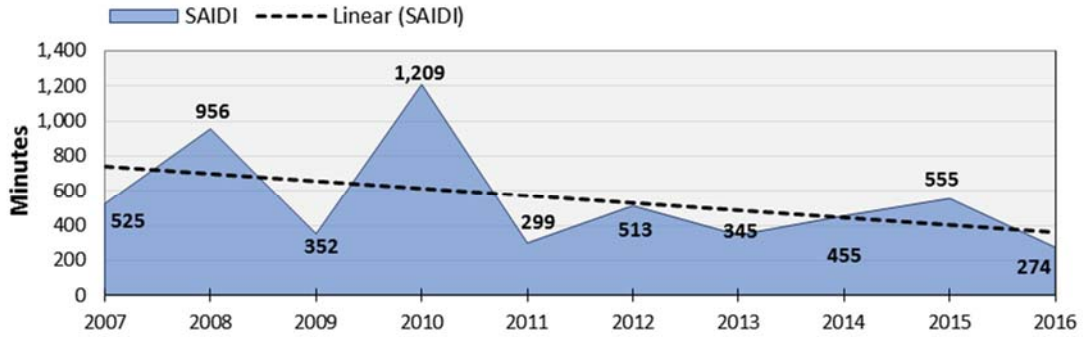
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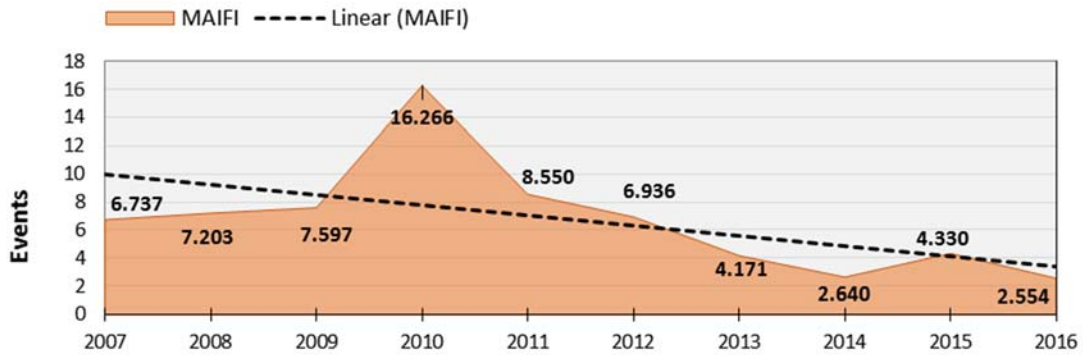
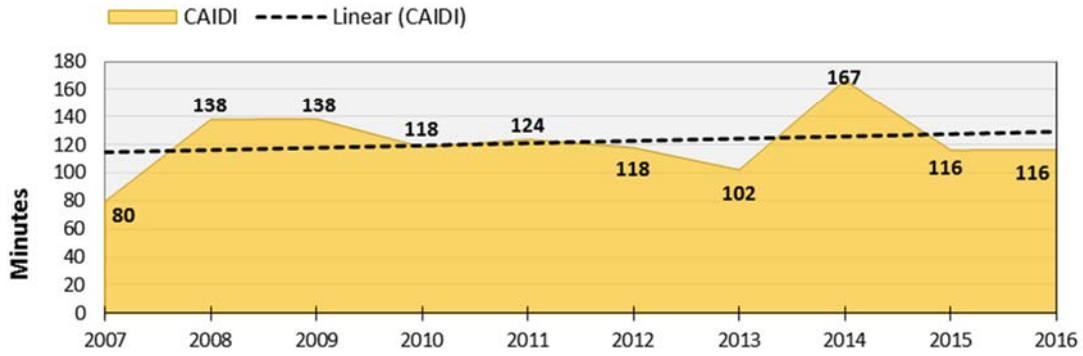
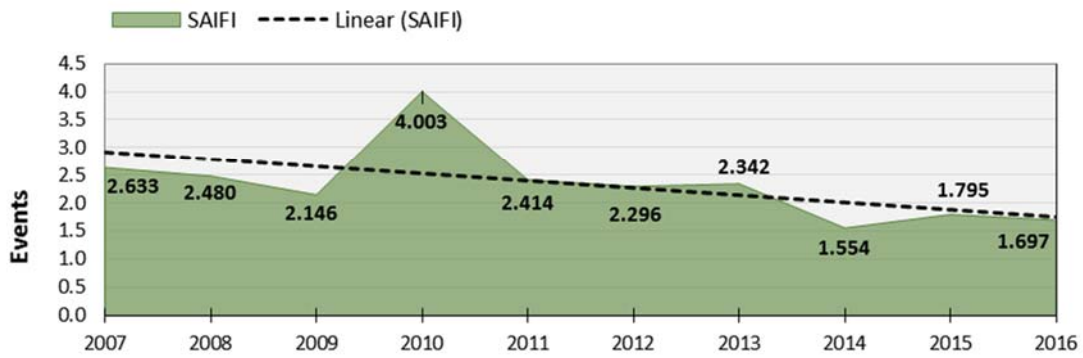
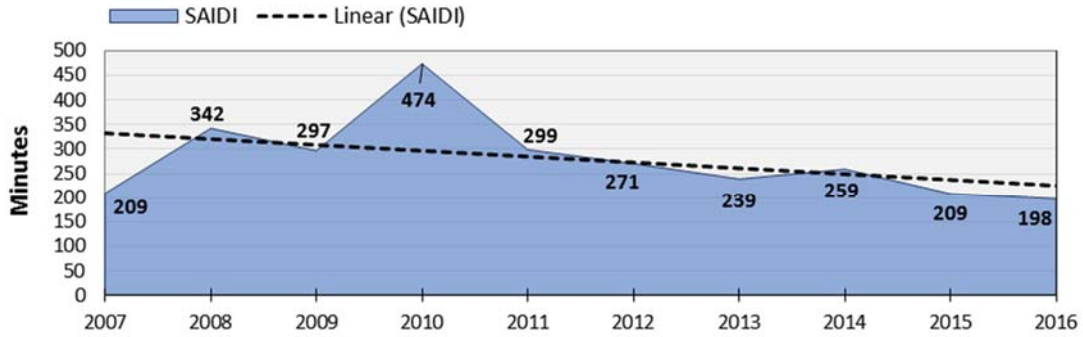
## State Reliability History - Including Major Events

(includes customer notice given and customer requested)





### State Reliability History - Excluding Major Events (includes customer notice given and customer requested)





Crescent City - District System Indices								
Year	Major Events Included <sup>1</sup>				Major Events Excluded <sup>2</sup> (2.5 & P1366)			
	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>
2016	361.4	2.796	129	na	179.2	1.583	113	na
2015	966.9	2.570	376	2.482	114.0	0.851	134	2.482
2014	871.1	3.103	281	0.000	342.6	1.728	198	0.000
2013	147.7	0.744	199	0.000	147.7	0.743	199	0.000
2012	457.4	4.142	110	0.000	395.8	3.797	104	0.000
2011	208.0	1.353	154	0.000	208.0	1.353	154	0.000
2010	232.7	1.970	118	0.895	231.9	1.964	118	0.895
2009	272.3	1.934	141	3.176	272.3	1.934	141	3.176
2008	950.0	2.858	332	0.683	186.0	1.094	170	0.683
2007	339.8	3.971	86	0.000	134.2	2.383	56	0.000

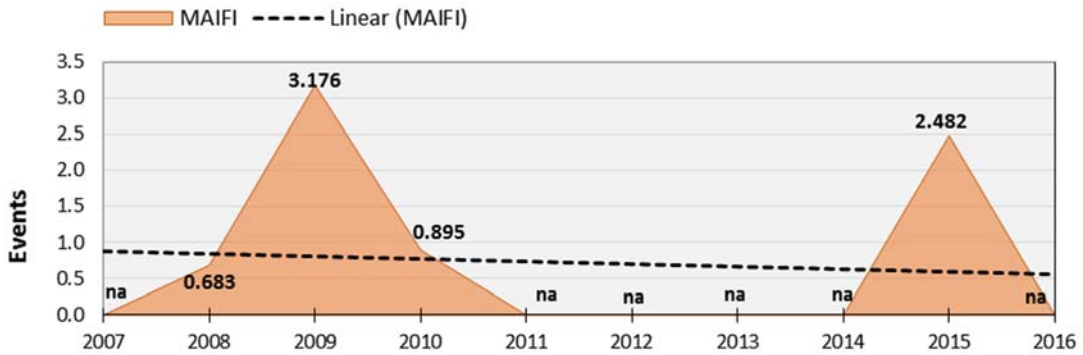
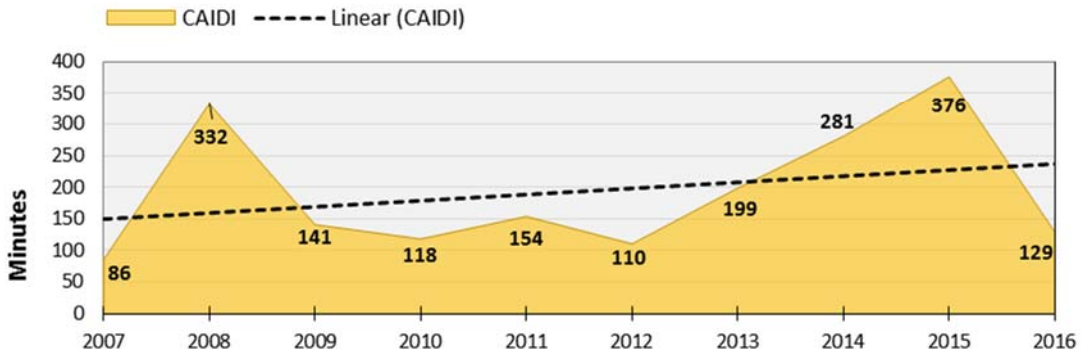
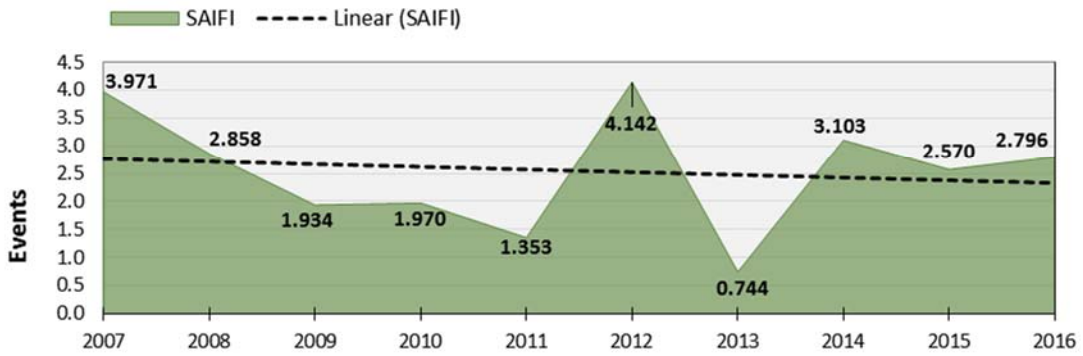
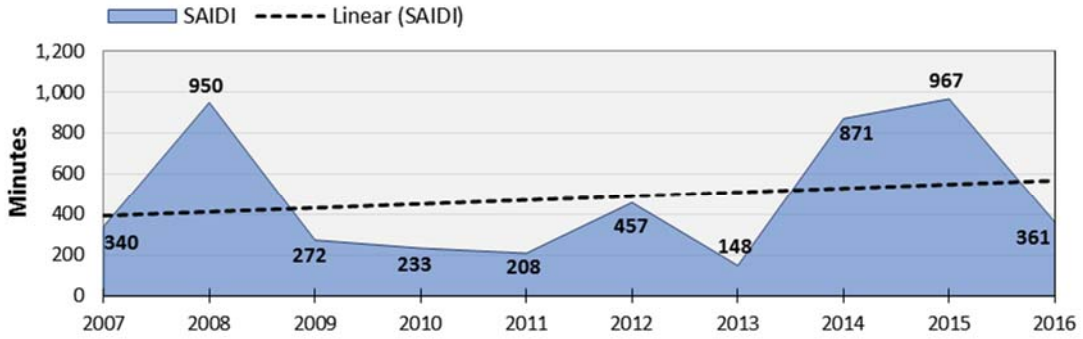
## Notes:

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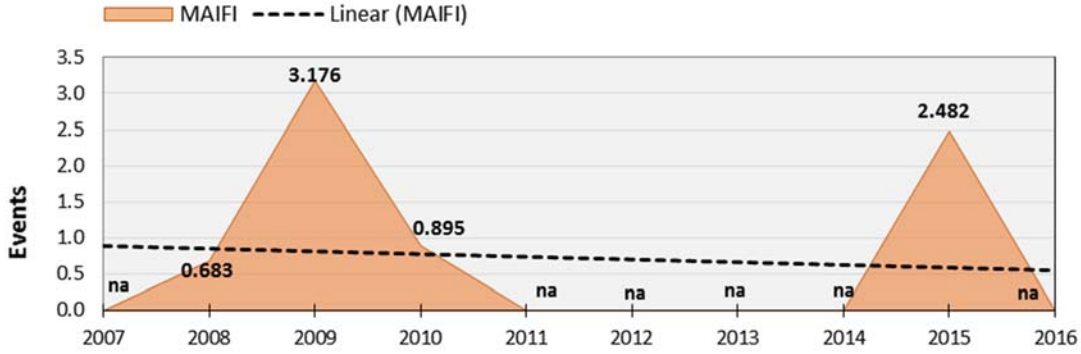
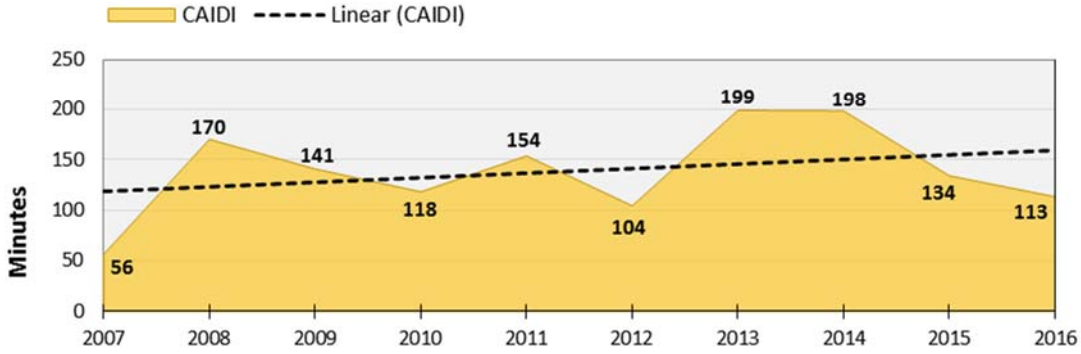
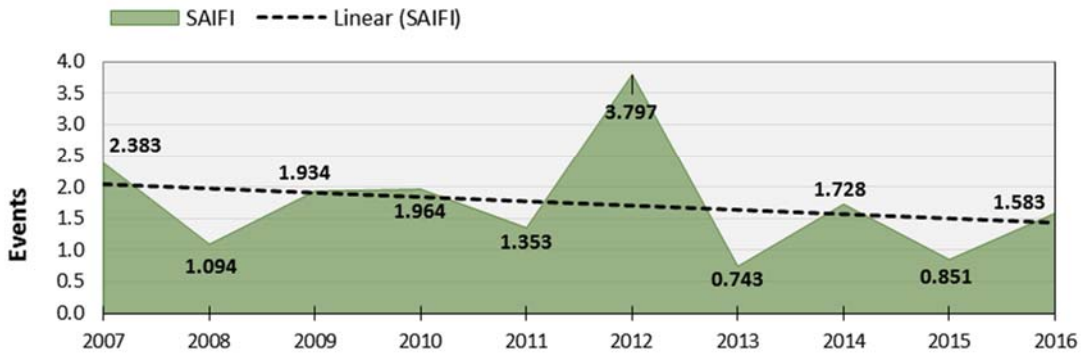
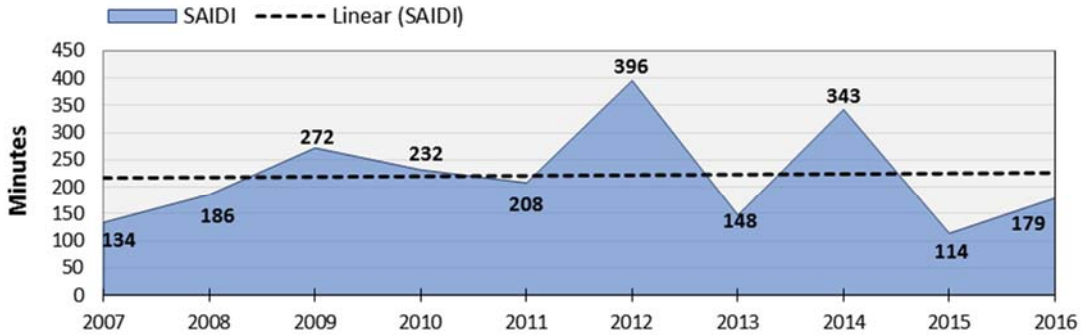
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### Crescent City Reliability History - Including Major Events (includes customer notice given and customer requested)



### Crescent City Reliability History - Excluding Major Events (includes customer notice given and customer requested)



Yreka/Mt. Shasta - District System Indices								
Year	Major Events Included <sup>1</sup>				Major Events Excluded <sup>2</sup> (2.5 & P1366)			
	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>
2016	270.3	2.069	131	1.923	232.2	1.836	126	1.923
2015	382.2	3.325	115	4.328	263.2	2.427	108	4.328
2014	332.6	1.842	181	2.666	251.7	1.540	163	2.666
2013	422.0	3.911	108	4.042	243.5	2.885	84	4.042
2012	633.1	3.048	208	7.268	244.9	1.919	128	7.268
2011	368.0	3.010	122	9.436	368.0	3.010	122	9.436
2010	1743.9	5.749	303	18.208	489.6	4.524	108	18.208
2009	369.4	2.385	155	7.978	278.6	1.694	164	7.978
2008	1112.2	5.373	207	7.615	430.6	3.194	135	7.615
2007	667.7	3.946	169	6.833	243.9	2.924	83	6.833

Notes:

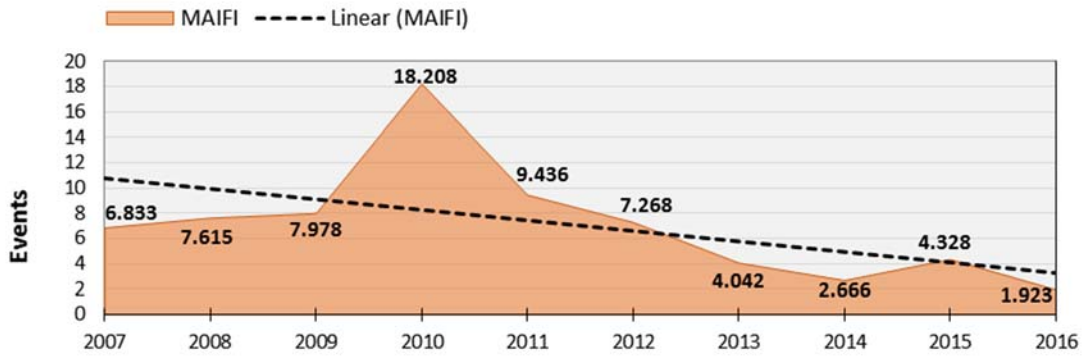
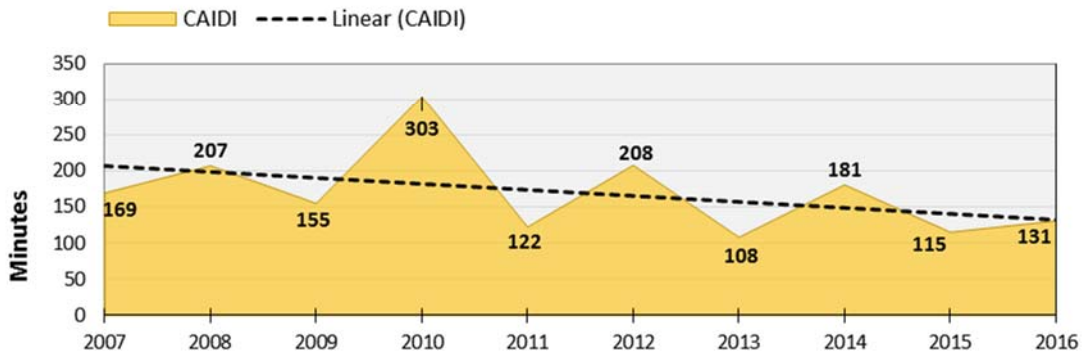
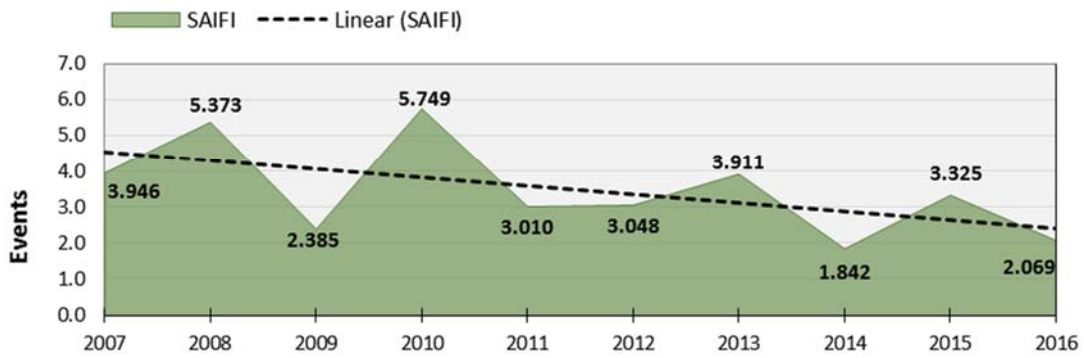
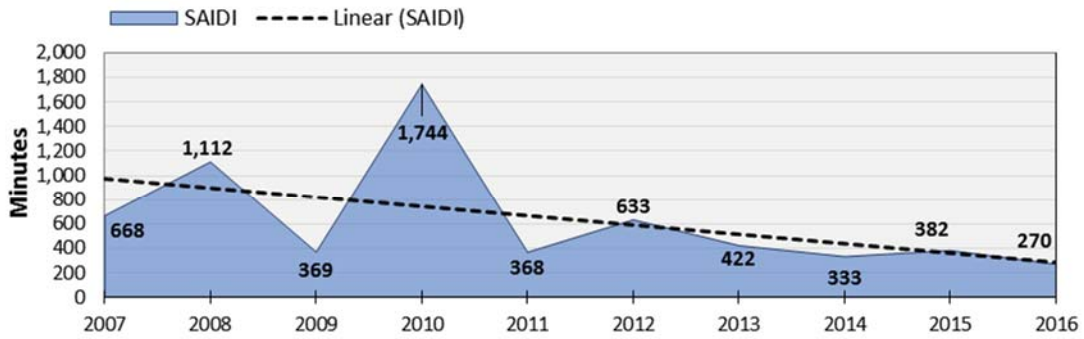
1 - Includes outages that are customer requested, pre-arranged (which can include short notice emergency prearranged outages), forced outages mandated by public authority, or resulting from a failure of another company's system.

2 - In 2016 rulemaking 14-12-014, approved local Major Event exclusion. 2015 Local events were reviewed and are excluded from the indices going forward.

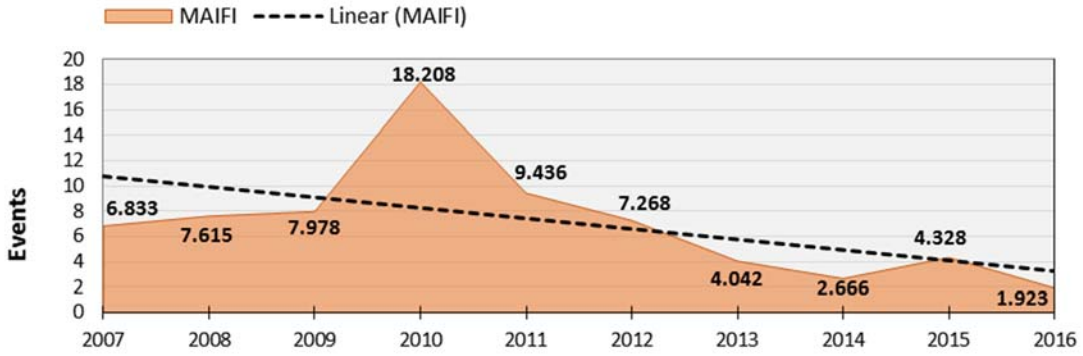
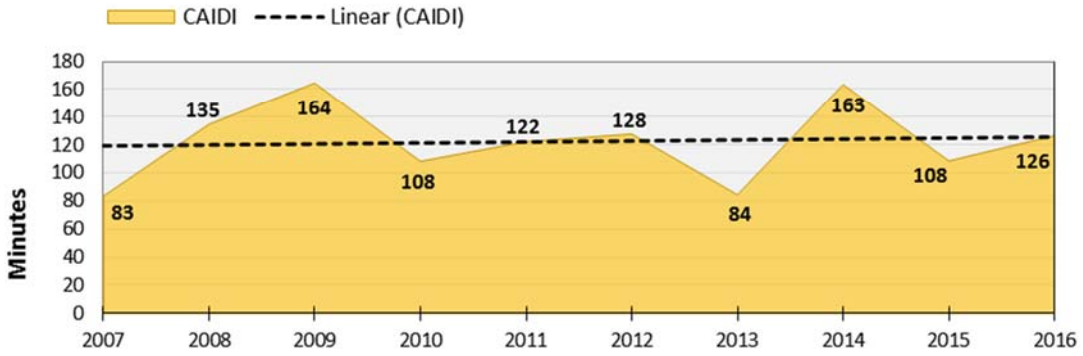
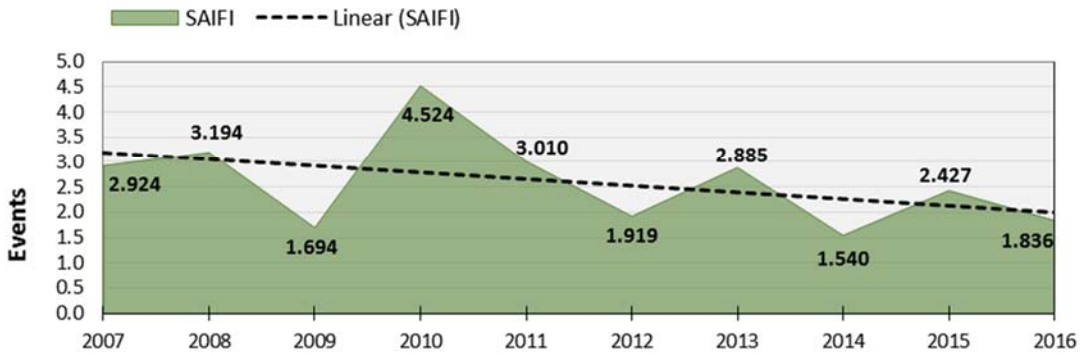
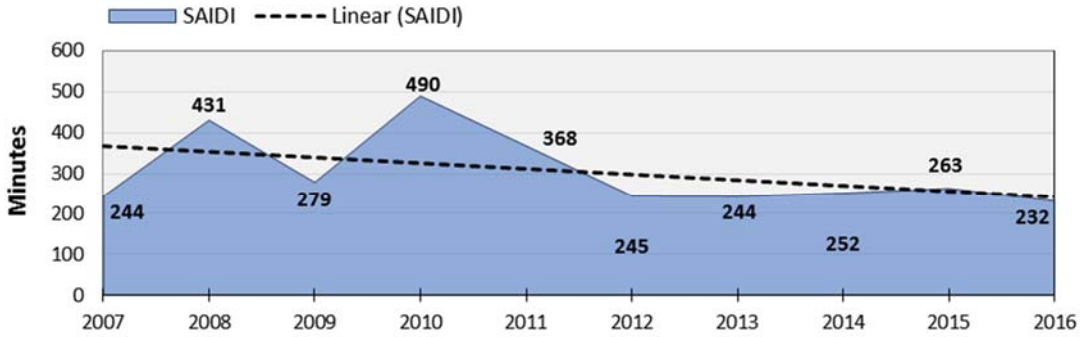
3 - These results are inclusive of outages that occurred during major events and are assumed to be associated with distribution performance.

## Yreka/Mt. Shasta Reliability History - Including Major Events

(includes customer notice given and customer requested)



### Yreka/Mt. Shasta Reliability History - Excluding Major Events (includes customer notice given and customer requested)



Tulelake/Alturas - District System Indices								
Year	Major Events Included <sup>1</sup>				Major Events Excluded <sup>2</sup> (2.5 & P1366)			
	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>	SAIDI	SAIFI	CAIDI	MAIFI <sup>3</sup>
2016	128.9	1.519	85	9.386	95.5	1.390	69	9.386
2015	481.1	2.794	172	5.237	165.9	1.033	161	5.237
2014	182.3	1.338	136	4.755	136.0	1.295	105	4.755
2013	399.7	3.263	123	8.754	388.1	3.123	124	8.754
2012	143.1	1.035	138	10.761	143.0	1.034	138	10.761
2011	192.1	1.999	96	9.851	192.1	1.999	96	9.851
2010	866.0	5.681	152	16.017	851.6	5.652	151	16.017
2009	422.5	4.583	92	10.354	411.1	4.283	96	10.354
2008	365.0	2.418	151	6.926	281.7	2.205	128	6.926
2007	305.1	2.348	130	8.843	209.3	1.951	107	8.843

## Notes:

1 - Includes outages that are customer requested, pre-arranged (which can include short notice emergency prearranged outages), forced outages mandated by public authority, or resulting from a failure of another company's system.

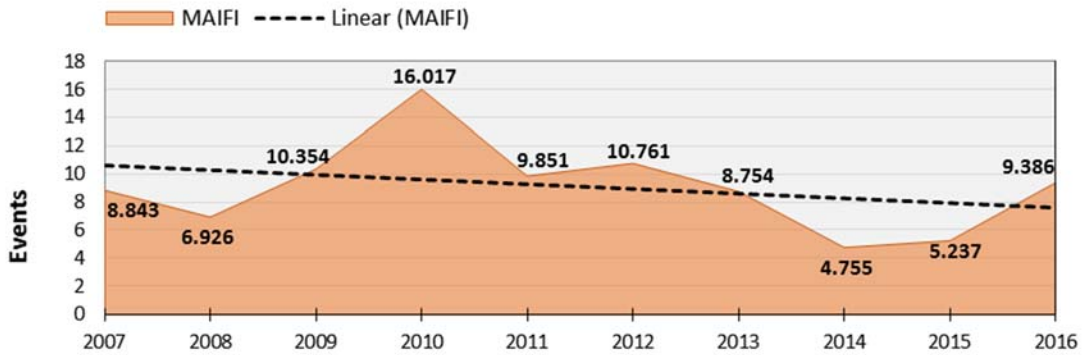
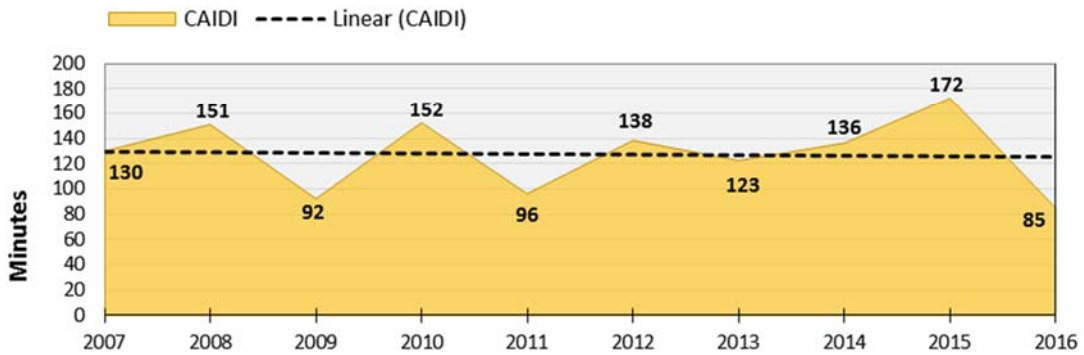
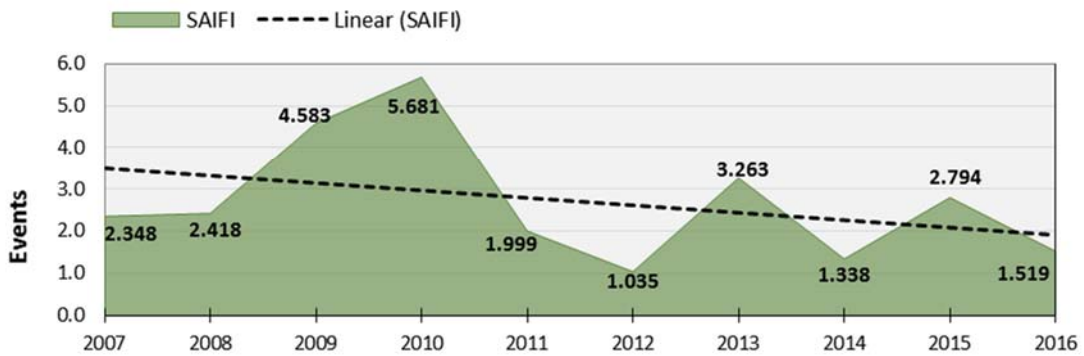
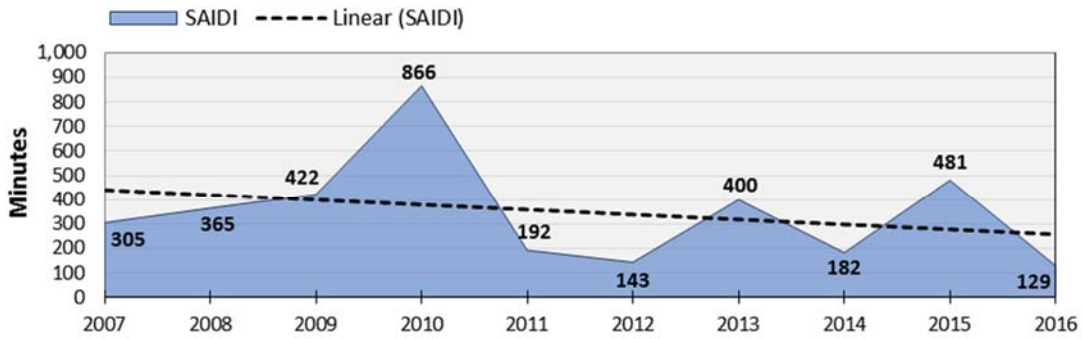
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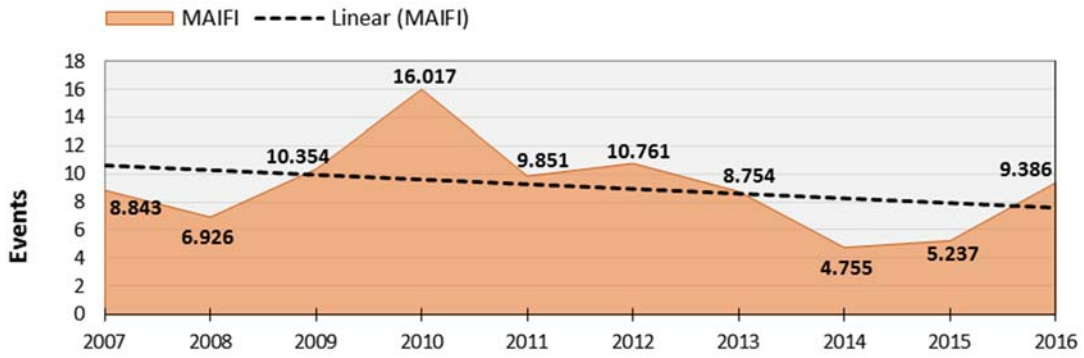
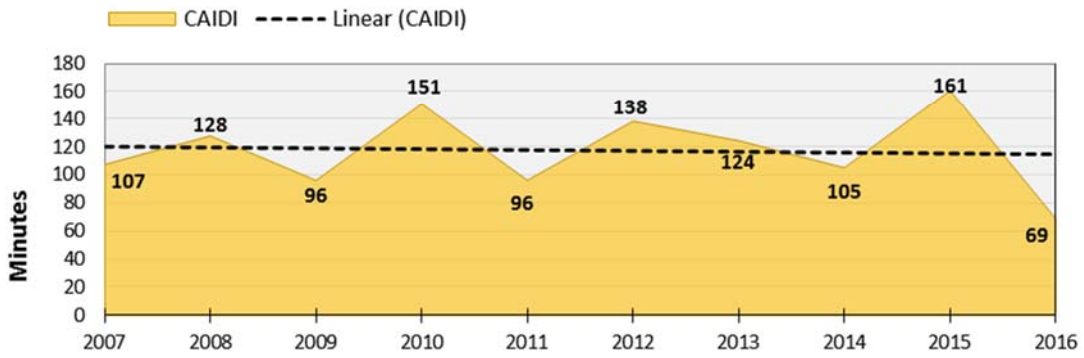
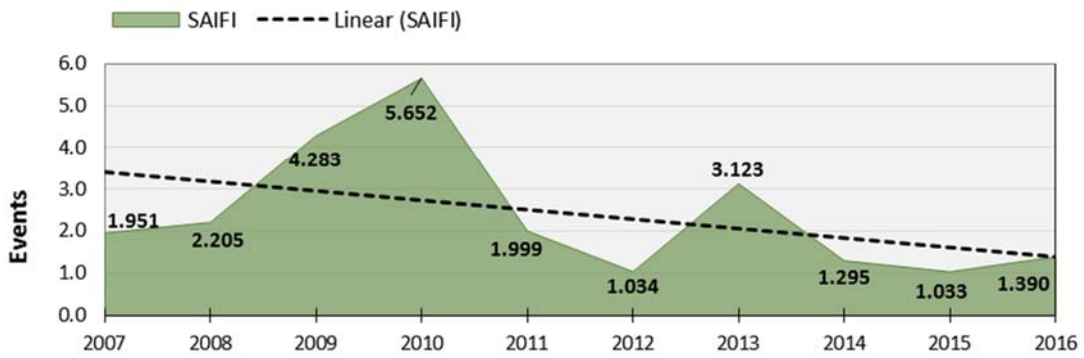
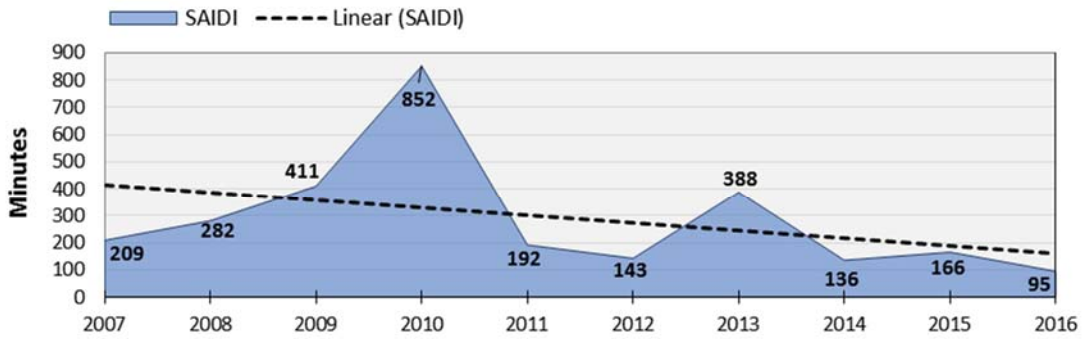
## Tulelake/Alturas Reliability History - Including Major Events

(includes customer notice given and customer requested)





### Tulelake/Alturas Reliability History - Excluding Major Events (includes customer notice given and customer requested)



Planned Outage by District

The below table shows planned outage events which occurred annually, by district and month. Note this data is confidential and submitted under seal.

Planned Outages <sup>1</sup>				
		Crescent City	Tulelake/Alturas	Yreka/Mt. Shasta
<b>2016</b>	January			
	February			
	March			
	April			
	May			
	June			
	July			
	August			
	September			
	October			
	November			
	December			
<b>2015</b>	January			
	February			
	March			
	April			
	May			
	June			
	July			
	August			
	September			
	October			
	November			
	December			
<b>2014</b>	January			
	February			
	March			
	April			
	May			
	June			
	July			
	August			
	September			
	October			
	November			
	December			
<b>2013</b>	January			
	February			
	March			
	April			
	May			
	June			
	July			
	August			
	September			
	October			
	November			
	December			

Planned Outages <sup>1</sup>				
		Crescent City	Tulelake/Alturas	Yreka/Mt. Shasta
<b>2012</b>	January			
	February			
	March			
	April			
	May			
	June			
	July			
	August			
	September			
	October			
	November			
	December			
<b>2011</b>	January			
	February			
	March			
	April			
	May			
	June			
	July			
	August			
	September			
	October			
	November			
	December			
<b>2010</b>	January			
	February			
	March			
	April			
	May			
	June			
	July			
	August			
	September			
	October			
	November			
	December			
<b>2009</b>	January			
	February			
	March			
	April			
	May			
	June			
	July			
	August			
	September			
	October			
	November			
	December			

Planned Outages <sup>1</sup>				
		Crescent City	Tulelake/Alturas	Yreka/Mt. Shasta
<b>2008</b>	January			
	February			
	March			
	April			
	May			
	June			
	July			
	August			
	September			
	October			
	November			
	December			
<b>2007</b>	January			
	February			
	March			
	April			
	May			
	June			
	July			
	August			
	September			
	October			
	November			
	December			

1 - Includes outages that are customer requested, pre-arranged (which can include short notice emergency prearranged outages), forced outages mandated by public authority, or resulting from a failure of another company's system.

## Top Ten Unplanned Power Outage Events for 2016

The table below displays the top 10 unplanned outages in 2016 based on the total customer minutes lost.

Top 10 Unplanned Outage Events – 2016					
Date	District	Description	Major Event?	Total Customer Minutes Lost	Total Customers in Incident
10/17/2016	Crescent City	Loss of Transmission Line	Y	926,778	10,972
6/5/2016	Yreka/Mt Shasta	Loss of Transmission Line	Y	853,260	4,736
6/17/2016	Yreka/Mt Shasta	Loss of Transmission Line	N	478,225	6,248
12/21/2016	Crescent City	Wind Blown Tree	Y	388,500	420
8/28/2016	Yreka/Mt Shasta	Forest Fire	N	363,287	1,404
12/21/2016	Crescent City	Wind Blown Tree	Y	311,097	336
2/5/2016	Yreka/Mt Shasta	Loss of Transmission Line	N	302,123	8,349
4/13/2016	Yreka/Mt Shasta	Wind Storm	N	291,507	6,016
1/13/2016	Crescent City	Pole Fire	N	278,218	8,577
2/5/2016	Yreka/Mt Shasta	Loss of Transmission Line	N	274,030	3,724

## Major Event Summary

PacifiCorp's service territory in California consists of the three operating areas: Crescent City, Yreka/Mt. Shasta, and Tulelake/Alturas. Each operating area has been designated as a reliability reporting region in accordance with the Order. Each year the major event threshold for the state is determined using the TMed methodology, as defined in IEEE P1366 and known as the "2.5 beta" method. The state TMed is then applied to each operating area<sup>5</sup>. The table below depicts the major events which have occurred during 2016.

2016 Major Event Summary								
Date	District	Cause	Customers out for a duration of:					
			5 min - 3 hrs.	3 - 24 hrs.	24 - 48 hrs.	48 - 72 hrs.	72 - 96 hrs.	96 + hrs.
February 17, 2016	Tulelake/Alturas	Tree/Wind	150	702	0	0	0	0
June 5-6, 2016	Yreka/Mt. Shasta	Loss of Supply/Tree	4,320	2,037	0	0	0	0
October 15-17, 2016	Crescent City	Storm	13,798	678	0	0	0	0
December 21-22, 2016	Crescent City	Loss of Supply/Tree	0	757	0	0	0	0

## Historical Top Ten Unplanned Power Outage Events – 2015 through 2006

Historical Top Ten Unplanned Outage Events by Year						
Year	Date	District	Description	Excluded Major Event?	Total Customer Minutes Lost	Total Customers in Incident
2015	2/5/2015	Crescent City	Loss of Transmission Line	Y	1,852,631	3,150
	2/7/2015	Crescent City	Wind Blown Tree	Y	1,036,585	1,222
	2/6/2015	Crescent City	Wind Blown Tree	Y	922,607	1,047
	2/7/2015	Crescent City	Wind Blown Tree	Y	922,282	1,884
	2/7/2015	Crescent City	Wind Blown Tree	Y	713,868	380
	2/5/2015	Crescent City	Loss of Transmission Line	Y	649,753	2,100
	2/7/2015	Crescent City	Loss of Transmission Line	Y	636,947	1,719
	7/7/2015	Yreka/Mt.Shasta	Loss of Transmission Line	Y	538,624	3,156
	4/25/2015	Yreka/Mt.Shasta	Tree	N	528,711	9,320
	2/7/2015	Crescent City	Emergency Damage Repair	Y	455,081	3,024

<sup>5</sup> Due to the size and irregularity of outage occurrences by operating area, it was deemed appropriate to apply the state Tmed to each operating area, in an attempt to balance major event occurrence throughout the operating areas and state.

Historical Top Ten Unplanned Outage Events by Year						
Year	Date	District	Description	Excluded Major Event?	Total Customer Minutes Lost	Total Customers in Incident
2014	10/25/2014	Crescent City	Loss of Transmission Line	Y	2,424,849	7,448
	10/25/2014	Crescent City	Loss of Transmission Line	Y	1,084,725	1,533
	9/15/2014	Yreka/Mt. Shasta	Loss of Transmission Line	Y	890,396	13,280
	9/15/2014	Yreka/Mt. Shasta	Loss of Transmission Line	Y	802,134	5,660
	10/25/2014	Crescent City	Loss of Transmission Line	Y	517,764	453
	9/15/2014	Yreka/Mt. Shasta	Intentional to Clear Trouble	Y	498,809	1,205
	3/24/2014	Crescent City	Loss of Transmission Line	N	484,466	798
	10/25/2014	Crescent City	Loss of Transmission Line	Y	478,808	1,176
	5/5/2014	Yreka/Mt. Shasta	Pole fire	N	472,976	1,875
	8/17/2014	Yreka/Mt. Shasta	Loss of Transmission Line	N	471,399	3,070
2013	8/25/2013	Yreka/Mt. Shasta	Loss of Transmission Line	Y	2,210,746	14,259
	8/25/2013	Yreka/Mt. Shasta	Loss of Transmission Line	Y	2,087,998	10,500
	9/5/2013	Yreka/Mt. Shasta	Loss of Substation	N	731,594	1,451
	10/27/2013	Yreka/Mt. Shasta	Loss of Transmission Line	N	466,576	1,452
	5/11/2013	Yreka/Mt. Shasta	Loss of Transmission Line	N	398,507	2,093
	8/22/2013	Tulelake/Alturas	Loss of Transmission Line	N	361,772	2,407
	7/9/2013	Tulelake/Alturas	Emergency Damage Repair	N	301,141	970
	9/30/2013	Crescent City	Tree	N	299,295	458
	5/20/2013	Yreka/Mt. Shasta	Loss of Substation	N	297,838	1,042
	12/9/2013	Yreka/Mt. Shasta	Loss of Substation	N	297,317	1,663
2012	12/20/2012	Yreka/Mt. Shasta	Weather	Y	1,789,753	3,108
	12/20/2012	Yreka/Mt. Shasta	Emergency Damage Repair	Y	1,691,153	11,788
	11/29/2012	Yreka/Mt. Shasta	Tree	N	876,375	12,070
	9/30/2012	Yreka/Mt. Shasta	Loss of Transmission Line	Y	807,000	3,078
	12/23/2012	Yreka/Mt. Shasta	Loss of Transmission Line	Y	697,305	373
	12/22/2012	Yreka/Mt. Shasta	Intentional to Clear Trouble	Y	681,990	508
	9/30/2012	Yreka/Mt. Shasta	Loss of Transmission Line	Y	568,353	6,469
	12/21/2012	Yreka/Mt. Shasta	Weather	Y	560,115	414
	12/24/2012	Yreka/Mt. Shasta	Tree	Y	509,765	438
	12/13/2012	Yreka/Mt. Shasta	Loss of Transmission Line	N	389,226	1,653
2011	10/10/2011	Yreka/Mt. Shasta	Loss of Transmission Line	N	870,734	3,612
	7/31/2011	Yreka/Mt. Shasta	Loss of Transmission Line	N	664,757	7,652
	3/24/2011	Yreka/Mt. Shasta	Loss of Transmission Line	N	550,141	1,042
	9/15/2011	Yreka/Mt. Shasta	Emergency Damage Repair	N	516,786	3,608
	7/31/2011	Yreka/Mt. Shasta	Loss of Transmission Line	N	501,237	6,308
	7/31/2011	Yreka/Mt. Shasta	Loss of Transmission Line	N	449,576	5,189
	12/10/2011	Yreka/Mt. Shasta	Loss of Transmission Line	N	430,949	546
	2/17/2011	Yreka/Mt. Shasta	Loss of Transmission Line	N	383,111	1,043
	3/18/2011	Yreka/Mt. Shasta	Weather	N	354,489	9,340
	12/23/2011	Crescent City	Loss of Transmission Line	N	332,817	839

Historical Top Ten Unplanned Outage Events by Year						
Year	Date	District	Description	Excluded Major Event?	Total Customer Minutes Lost	Total Customers in Incident
2010	1/19/2010	Yreka/Mt. Shasta	Weather	Y	4,234,449	16,164
	1/20/2010	Yreka/Mt. Shasta	Loss of Transmission Line	Y	4,091,276	2,082
	1/20/2010	Yreka/Mt. Shasta	Weather	Y	3,681,730	17,420
	1/20/2010	Yreka/Mt. Shasta	Tree	Y	3,058,895	12,084
	1/19/2010	Yreka/Mt. Shasta	Tree	Y	2,053,386	2,832
	1/19/2010	Yreka/Mt. Shasta	Loss of Transmission Line	Y	1,375,369	1,041
	1/20/2010	Yreka/Mt. Shasta	Loss of Transmission Line	Y	1,189,230	1,400
	1/1/2010	Yreka/Mt. Shasta	Loss of Transmission Line	N	1,074,337	7,588
	1/19/2010	Yreka/Mt. Shasta	Weather	Y	1,040,447	8,472
	1/24/2010	Yreka/Mt. Shasta	Loss of Transmission Line	Y	1,012,477	1,041
2009	12/24/2009	Yreka/Mt. Shasta	Loss of Transmission Line	Y	2,337,570	10,853
	3/2/2009	Yreka/Mt. Shasta	Unknown - Weather	N	470,105	3,117
	10/27/2009	Yreka/Mt. Shasta	Equipment	N	422,256	9,568
	10/14/2009	Crescent City	Loss of Transmission Line	N	419,144	6,616
	3/1/2009	Crescent City	Tree	N	383,888	918
	8/1/2009	Tulelake/Alturas	Loss of Transmission Line	N	363,394	2,123
	5/14/2009	Crescent City	Loss of Transmission Line	N	360,703	833
	3/3/2009	Tulelake/Alturas	Loss of Transmission Line	N	327,020	2,128
	2/15/2009	Yreka/Mt. Shasta	Tree	N	320,727	764
	12/27/2009	Crescent City	Transformer Failure	N	302,232	9,630
2008	1/4/2008	Yreka/Mt. Shasta	Loss of Transmission Line	Y	1,548,177	511
	1/8/2008	Crescent City	Loss of Transmission Line	Y	1,329,586	7,066
	1/4/2008	Crescent City	Wind	Y	1,252,667	1,033
	1/10/2008	Yreka/Mt. Shasta	Loss of Transmission Line	Y	1,126,251	1,037
	1/5/2008	Yreka/Mt. Shasta	Loss of Transmission Line	Y	1,100,672	1,037
	2/23/2008	Yreka/Mt. Shasta	Loss of Transmission Line	N	951,224	1,052
	1/8/2008	Yreka/Mt. Shasta	Tree	Y	936,169	1,037
	1/4/2008	Yreka/Mt. Shasta	Loss of Transmission Line	Y	895,726	1,037
	1/8/2008	Yreka/Mt. Shasta	Weather - Snow	Y	834,993	16,730
	1/4/2008	Yreka/Mt. Shasta	Wind	Y	803,229	5,400
2007	2/21/2007	Yreka/Mt. Shasta	Weather	Y	1,438,657	901
	2/22/2007	Yreka/Mt. Shasta	Weather	Y	1,161,460	902
	2/21/2007	Yreka/Mt. Shasta	Weather	Y	992,492	3,344
	2/22/2007	Yreka/Mt. Shasta	Weather	Y	676,629	674
	12/3/2007	Crescent City	Loss of Transmission Line	Y	530,361	924
	12/3/2007	Crescent City	Loss of Transmission Line	Y	485,902	801
	10/19/2007	Crescent City	Loss of Transmission Line	N	484,494	12,651
	2/25/2007	Yreka/Mt. Shasta	Weather	Y	437,533	1,672
	2/22/2007	Tulelake/Alturas	Weather	Y	353,463	556
	12/3/2007	Yreka/Mt. Shasta	Wind	Y	347,863	643



### Historical Top Ten Unplanned Outage Events by Year

Year	Date	District	Description	Excluded Major Event?	Total Customer Minutes Lost	Total Customers in Incident
<b>2006</b>	3/5/2006	Yreka/Mt. Shasta	Tree	Y	742,305	898
	3/4/2006	Yreka/Mt. Shasta	Loss of Transmission Line	Y	702,692	1,409
	1/1/2006	Yreka/Mt. Shasta	Intentional to Clear Trouble	Y	611,007	2,240
	12/26/2006	Crescent City	Loss of Transmission Line	Y	596,617	454
	8/7/2006	Yreka/Mt. Shasta	Loss of Transmission Line	N	551,417	898
	3/5/2006	Yreka/Mt. Shasta	Trees	Y	547,026	1,095
	12/26/2006	Crescent City	Loss of Transmission Line	Y	516,929	401
	9/22/2006	Yreka/Mt. Shasta	Loss of Transmission Line	N	467,247	1,381
	2/26/2006	Yreka/Mt. Shasta	Loss of Transmission Line	Y	428,736	1,752
	2/26/2006	Yreka/Mt. Shasta	Loss of Transmission Line	Y	422,845	878

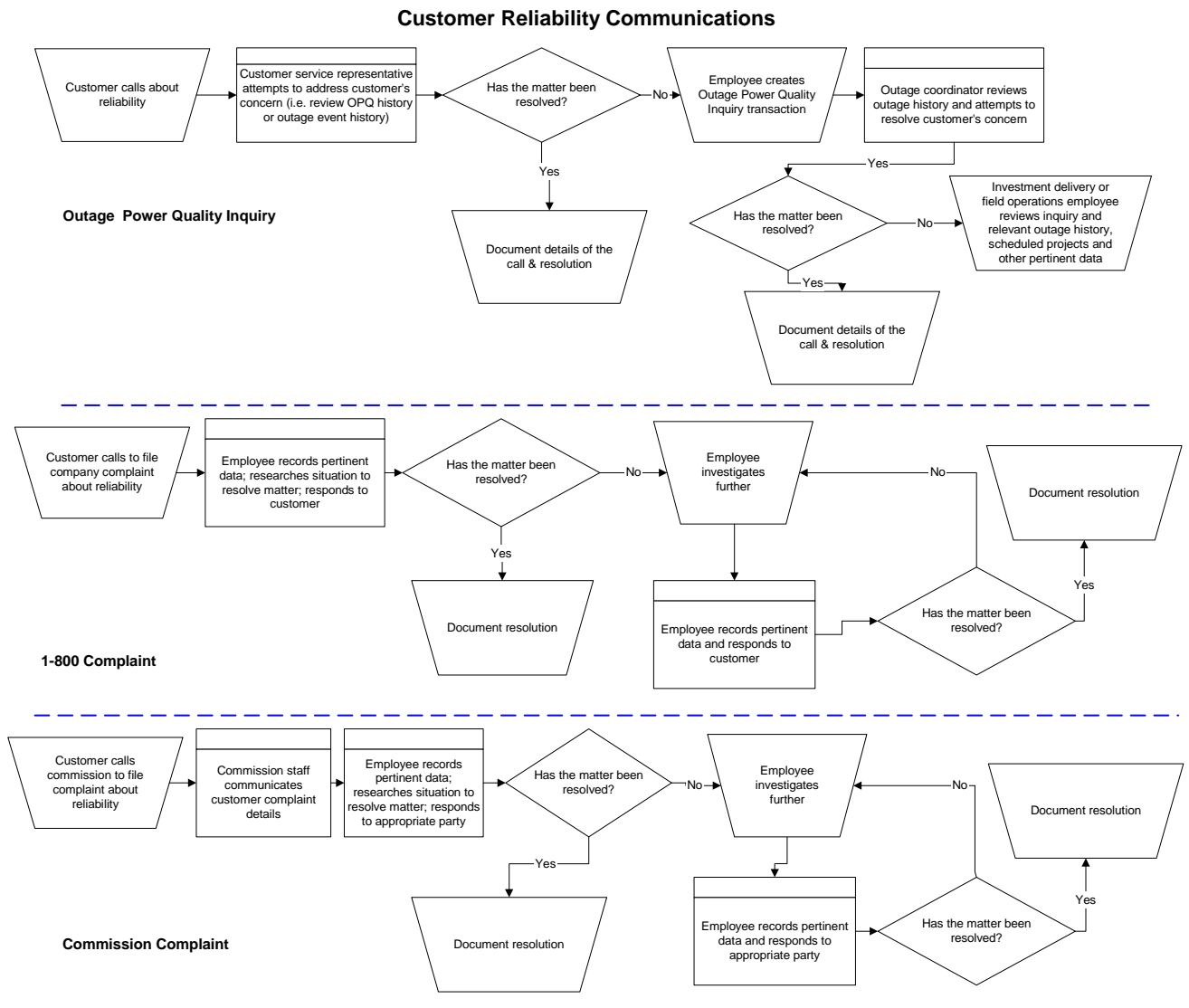
# Customer Inquiries and Response

## Customer Reliability Communications

Pacific Power has modified its internet to provide customer guidance on how to request reliability information. This information is contained at <https://www.pacificpower.net/reliability>. Further, Pacific Power will be scheduling its first annual meeting in the fall of 2016 to review these results.

## Reliability Inquiry and Complaint Process Overview

The Company's process for managing customers' concerns about reliability are to provide opportunities to hear customer concerns, respond to those concerns, and where necessary, provide customers an opportunity to elevate those concerns.



## Customer Reliability Inquiry/Complaint Tracking

Listed below are the various avenues available to a customer to resolve concerns about reliability performance.

- **Customer Reliability Inquiry**

The company records customer inquiries about reliability as Outage Power Quality transactions in its customer service system, referred to as “OPQ” transactions.

- **Customer Complaint**

If a customer’s reliability concerns are not met through the process associated with the OPQ transaction, a customer can register a 1-800 complaint with the company. This is recorded in a complaint repository from which regular reports are prepared and circulated for resolution.

- **Commission Complaint**

If a customer’s reliability concerns are not met through the process associated with a 1-800 complaint, a customer can register a complaint with the Commission. This is recorded by the Commission staff and also by the company in a complaint repository. Regular reports are prepared and circulated for resolution of these items.

## 2016 Customer Reliability Inquiry Responses

The table below illustrates PacifiCorp’s response times for each customer reliability inquiry received in 2016. The response time for each inquiry is calculated from the date of the initial inquiry to the date on which the company contacts the customer to discuss the specific circumstances associated with the inquiry.

Response Time (Days)	Customer Inquiries (non-outage Related)	Customer Outage Inquiries	Response Time (Days)	Customer Inquiries (non-outage Related)	Customer Outage Inquiries
1	52	8	16	0	0
2	11	2	17	0	0
3	8	1	18	0	0
4	3	1	19	0	0
5	2	0	20	0	0
6	1	0	21	0	0
7	0	1	22	0	0
8	0	0	23	0	0
9	0	0	24	0	0
10	4	0	25	0	0
11	1	0	26	0	0
12	2	0	27	1	0
13	2	0	28	0	0
14	2	0	29	0	0
15	0	0	30	0	0

**DECLARATION OF  
HEIDEMARIE C. CASWELL (PACIFICORP)**

1. My name is Heidemarie C. Caswell. My business address is 825 NE Multnomah Street, Suite 1500, Portland, Oregon 97232.

2. I am Director of Transmission and Distribution Asset Performance for PacifiCorp d/b/a Pacific Power (PacifiCorp or the Company). Mr. Richard Vale, Vice President Transmission, has delegated authority to me, Heidemarie C. Caswell, to sign this declaration. PacifiCorp is a multi-jurisdictional utility providing electric retail service to customers in California, Idaho, Oregon, Utah, Washington, and Wyoming. PacifiCorp serves approximately 45,000 customers in portions of Del Norte, Modoc, Shasta, and Siskiyou Counties in northern California.

3. This declaration is based on my information and belief, and is submitted in accordance with Ordering Paragraph No. 1(a) of California Public Utilities Commission (Commission) Decision (D.) 16-08-024.

4. On August 18, 2016, the Commission adopted D. 16-08-024. D. 16-08-024 requires that when a utility submits documents to the Commission or staff of the Commission outside of a formal proceeding, any documents for which the submitting party seeks confidential treatment must be marked as confidential and the basis for confidential treatment specified. Additionally, any such request must be accompanied by a declaration signed by an officer of the requesting entity or by an employee or agent designated by an officer. The officer delegating signing authority to an employee or agent must be identified in the declaration.

5. On January 14, 2016, the Commission adopted D.16-01-008 updating the electric reliability reporting requirements for California electric utilities. D.16-01-008 requires utilities to submit annual information about planned outages to the Energy Division and the Safety and Enforcement Division on a confidential basis.<sup>1</sup> As noted in D.16-01-008, “making planned outage data public poses a potential risk as the data could expose grid vulnerabilities. Therefore,

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<sup>1</sup> D.16-01-008, at p.18.

planned outage data should be confidential to protect the public from potential harmful activities that could damage the grid and electric reliability.” See D.16-01-008 at p.19.

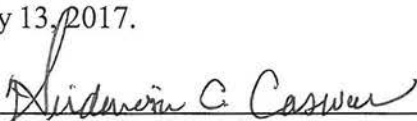
6. D.16-01-008 Ordering Paragraph 1 requires PacifiCorp to submit its electric reliability information to the Commission on July 15 of each year.

7. As part of its annual reliability report submitted to the Commission on July 13, 2017,<sup>2</sup> PacifiCorp is submitting a confidential and public version of the report with planned outage data redacted.

8. PacifiCorp is asserting a claim of confidentiality in association the planned outage data in accordance with D.16-01-008. The planned outage file has been labeled Confidential Document in compliance with General Order 66 C, PUC Section 583, and D.16-01-008.

I declare under penalty of perjury of the laws of the state of California that the foregoing is true and correct.

Executed in Portland, Oregon, July 13, 2017.

  
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Heidemarie C. Caswell  
Director, Transmission & Distribution Asset Performance  
PacifiCorp

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<sup>2</sup> PacifiCorp is concurrently submitting a copy of this report to Mr. Timothy Sullivan, Mr. Edward Randolph, and Mr. David Lee with the same claim of confidentiality.