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REPORT NAME: Annual Report on Service Quality Measures for Calendar Year 2013

COMPANY NAME: PacifiCorp

DOES REPORT CONTAIN CONFIDENTIAL INFORMATION? [X]No [ ]Yes

If yes, please submit only the cover letter electronically. Submit confidential information as directed in OAR 860-001-0070 or the terms of an applicable protective order.

If known, please select designation: [X]RE (Electric) [ ]RG (Gas) [ ]RW (Water) [ ]RO (Other)

Report is required by: [X]OAR 860-023-0150

[ ]Statute

[X]Order 98-191

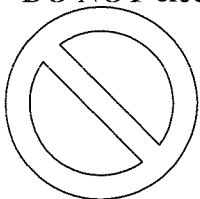
[ ]Other

Is this report associated with a specific docket/case? [ ]No [X]Yes

If yes, enter docket number: RE 58(1) & UE 94

List applicable Key Words for this report to facilitate electronic search:
Service Quality Measures

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• Any other Telecommunications Reporting or
• Any daily safety or safety incident reports or
• Accident reports required by ORS 654.715

Please file the above reports according to their individual instructions.



825 NE Multnomah, Suite 2000  
Portland, Oregon 97232

May 1, 2014

***VIA ELECTRONIC FILING***

Public Utility Commission of Oregon  
3930 Fairview Industrial Drive SE  
Salem, Oregon 97302-1166

Attn: Filing Center

**RE: Annual Report on Service Quality Measures for Calendar Year 2013**

PacifiCorp d/b/a Pacific Power submits for filing its Annual Report on Service Quality Measures for calendar year 2013. This filing is made in compliance with OAR 860-023-0150 and Order No. 98-191 in docket UE 94.

The company respectfully requests that data requests regarding this matter be addressed to:

By E-mail (preferred): [datarequest@pacificorp.com](mailto:datarequest@pacificorp.com)

By regular mail: Data Request Response Center  
PacifiCorp  
825 NE Multnomah, Suite 2000  
Portland, OR 97232

Please direct informal questions to Gary Tawwater, Manager, Regulatory Affairs, at 503-813-6805.

Sincerely,



R. Bryce Dalley  
Vice President, Regulation

Enclosure



*Calendar Year 2013 Review*  
*January 1, 2013 – December 31, 2013*

**Oregon**

UE 94

Service Quality Measures

## C1 – AT-FAULT CUSTOMER COMPLAINTS

PacifiCorp continues to maintain excellent customer service, and to promote resolution of customer complaints throughout the Company by proactive management of complaints and potential complaints.

The total number of “At Fault” complaints for the year was 7; the ratio of “At Fault” complaints per 1,000 customers in CY2013 was 0.012 (based on the CY2013 frozen customer count of 599,772 Oregon customers).

Low levels of “At-Fault” complaints can be attributed to the following actions by the Company:

- Continuation of internal review of all Commission complaints through root cause and assignment of follow up action items,
- Continuation of audit process to ensure changes implemented for complaints are effective,
- Active participation in process changes at the Business Centers and T & D Operations,
- Application of Performance Standard 6 commitments to ensure customers receive timely and accurate response/resolution of complaints,
- Communication with Commission staff concerning ongoing process changes,
- Support for T & D Operations and Business Center personnel, with specialized guidance regarding current rules and regulations.

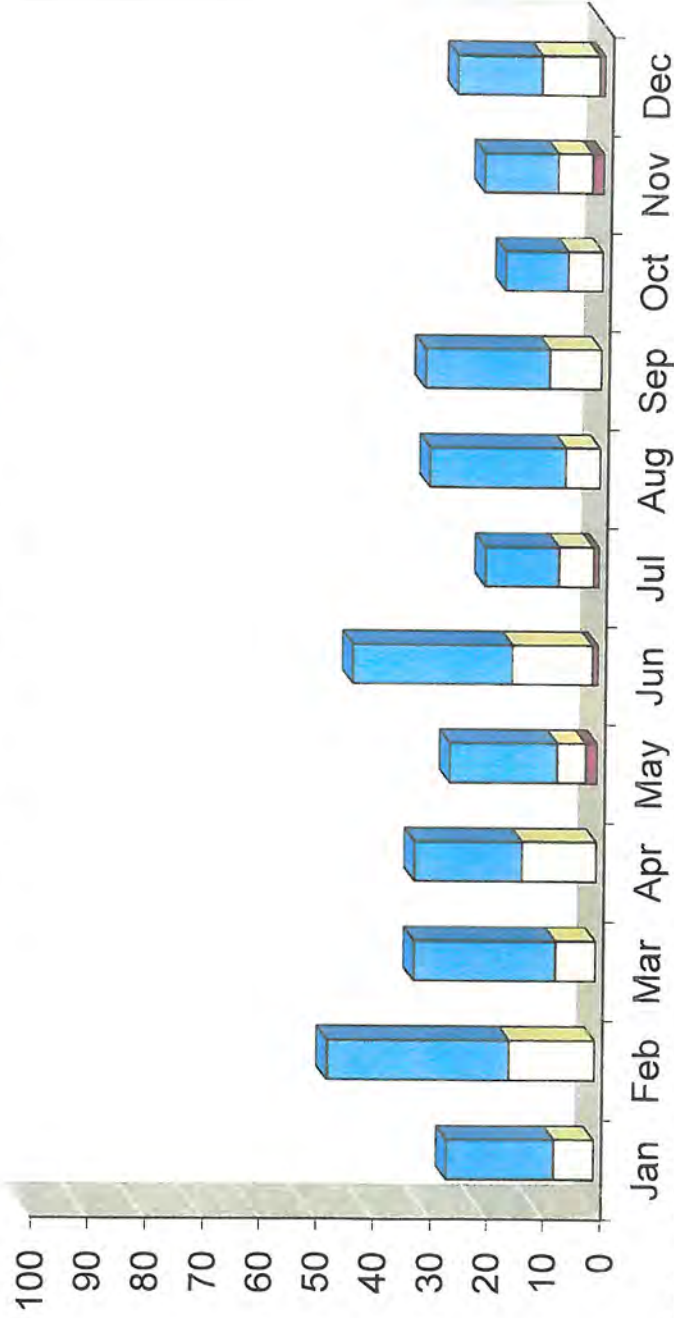
Calendar Year 2013  
Complaint Statistics  
Oregon

Month	800 Complaints	OPUC Complaints	At-Fault Complaints
Jan	19	7	0
Feb	32	15	0
Mar	25	7	0
Apr	19	13	0
May	19	7	2
Jun	28	15	1
Jul	13	7	1
Aug	24	6	0
Sep	22	9	0
Oct	11	6	0
Nov	13	8	2
Dec	15	11	1
<b>TOTALS</b>	<b>240</b>	<b>111</b>	<b>7</b>

\*NOTE: The 'OPUC Complaints' reflects a net adjustment of 1 record downgraded to an inquiry. Reporting year is from 12/20/2012 - 12/21/2013. The 800 complaints include all complaint types excluding Commission Complaints.

# CY2013 Oregon Complaints

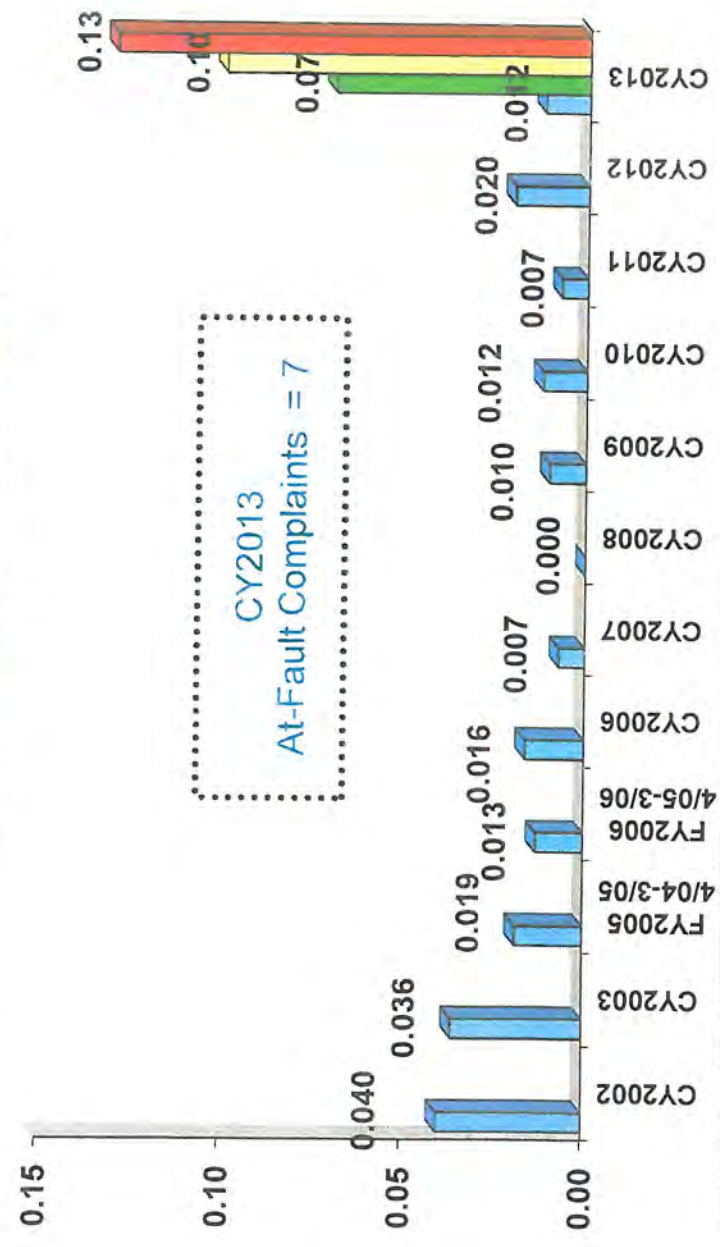
■ At Fault (7)    
 ■ No Fault (104)    
 ■ 800 (240)



Penalty Level 1 = .10    
 Penalty Level 2 = .13    
 CY2013 Result = .012

### C1 - At Fault Complaints Performance History

■ Actual   
 ■ Goal   
 ■ P1   
 ■ P2





## **S1 - MAJOR SAFETY VIOLATIONS**

Description: The S1 measure indicates the number of major safety violations cited by the Commission that were in effect during the year.

PacifiCorp experienced no Major Safety Violations in CY2013.



## R1 thru R4 - RELIABILITY

### *Introduction and Discussion*

This year's reliability report includes a brief discussion of PacifiCorp's programs and initiatives to evaluate and enhance reliability. In addition, the UE 94 R1, R2, R3 and R4 Performance Measures will be discussed. Changes to this section have been made since administrative rules regarding reliability were modified during the reporting period.

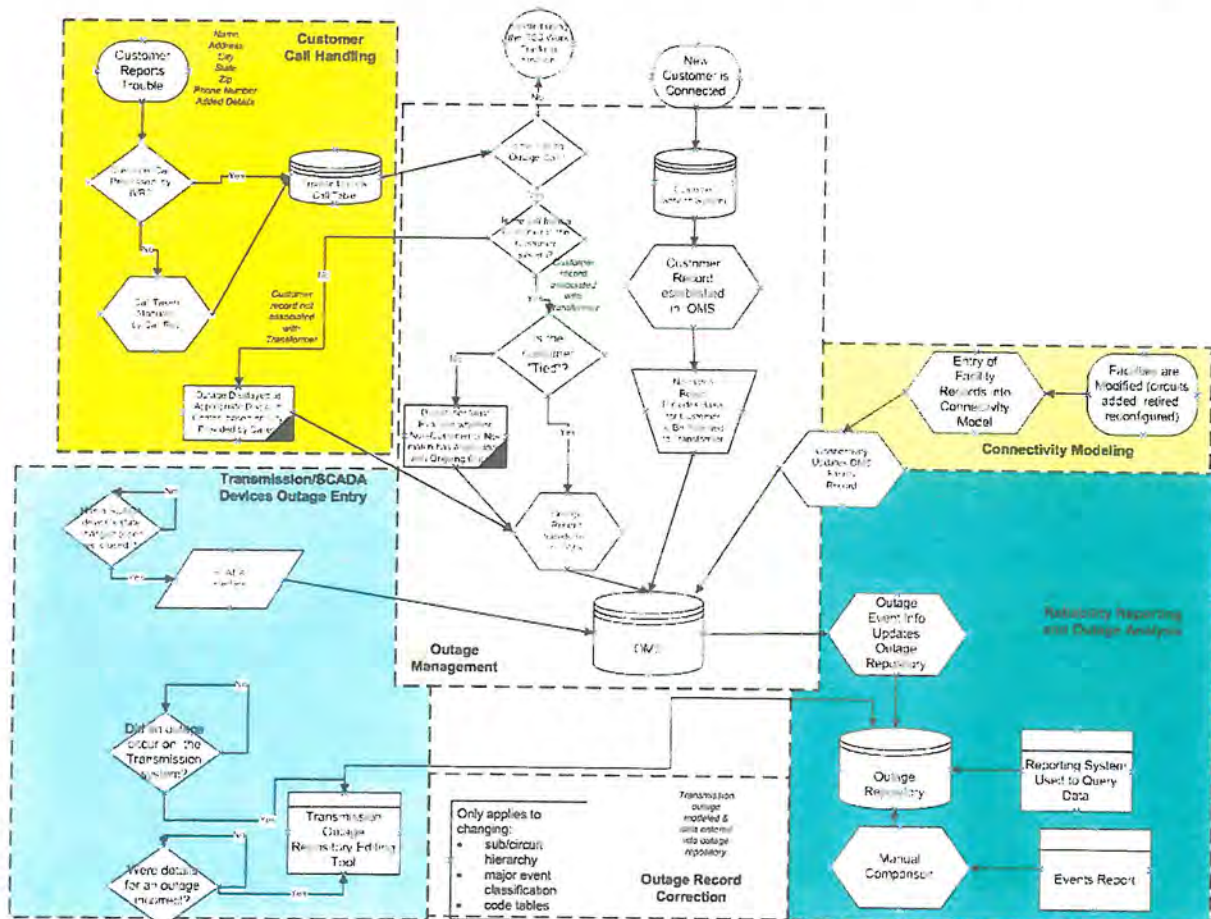
These are included in the following order:

1. Discussion of Programs and Initiatives
  - Monitoring, Recording and Reporting Reliability
    - How We Monitor Reliability
    - Reliability Measurement: Changes in Indices and Metrics
    - Report on UE 94 Statewide Reliability Service Measures
    - Major Event Thresholds and Major Events Excluded Report
    - Reliability Reporting Regions Map
  - Standards and Guidelines
  - Under-performing Circuits Program
2. UE 94 R1, R2, R3, R4 Service Quality Measures Report
3. Five-Year View SAIDI, SAIFI, MAIFI<sub>e</sub>
4. Five-Year View Reliability Reporting Region Metrics
5. Circuit Metrics (Excluding and Including Major Events)
6. Five-Year View Cause Analysis - State Summary
7. Five-Year View Cause Analysis - Reliability Reporting Regions Detail
8. Five-Year View Reliability Region and Operating Area Customer Counts
9. List of Active Circuits by Reliability Reporting Region

# Monitoring, Recording and Reporting Reliability

## How PacifiCorp Monitors Reliability

PacifiCorp 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 Access 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, per agreement with the Oregon PUC Staff.



## Reliability Reporting: Interpreting Indices and Metrics

Raw reliability data comes in the form of outage start and stop times, numbers of customers interrupted and outage cause codes. Out of these are derived an array of indices and acronyms that attempt to reduce complex data to a handful of numbers. This section briefly describes the metrics used by PacifiCorp for reliability measurements.

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, IEEE Guide for Electric Power Distribution Reliability Indices.

For performance reporting as contained within this document<sup>1</sup>, PacifiCorp uses the current standard indices, applied at the state level and also to newly-defined reliability reporting regions; however, the major events excluded from performance during the period were determined using the historic “10% of operating area customers” method, not the newly adopted IEEE P1366 “2.5 beta” TMed method applied to the new reliability reporting regions, which is effective calendar year 2012 for determining major events. Therefore, in subsequent reports, all five-year comparative views that are based on performance excluding major events, will reflect some years that used different major event definitions, which may or may not have yielded different results, though if different probably nominally.

Regional reliability reporting areas were established by using statistical tools to determine the granular level at which performance complied with assumptions underlying the development of the major event thresholds adopted within the standard. For the Customer Guarantee element of the Performance Standards Program, exceptions to the guarantees may also be determined based on data at a state level.

In order to devise circuit-level performance measures, PacifiCorp has done considerable research into which metrics are appropriate for ranking reliability investments in order to better serve the needs of customers. The need to reliably serve the areas with the greatest numbers of customers must be balanced against the need to maintain focus on service levels where there are fewer customers. To do this, PacifiCorp implemented in 1999 a balanced set of circuit performance indices (known as CPI<sup>99</sup>) and methods that improve on those documented in IEEE 1366. In 2005, the Company modified this measure to include events that occur during a major event and events that are due to upstream transmission-level outages (known as CPI<sup>05</sup>). Circuit performance is reviewed at least annually to determine the selection of circuits to be addressed within the Company’s Worst-Performing Feeders Program; as time has elapsed and tools have evolved the Company has focused its analysis at a lower level than circuit, i.e. sub-circuit selection may have been chosen as the optimal improvement activity. Also, in order to deliver

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<sup>1</sup> State administrative rules regarding service reliability were modified during 2011, which has resulted in significant modifications to this section of the report.

more cost effective reliability improvement measures, the Company identified a category of outage causes considered to be cost-effectively avoidable called Controllable Distribution Causes, against which it assesses improvement activities. Mining of this data allows the company to optimize cost against reliability metric improvements.

### **Reliability Tools: Improving Indices and Metrics**

PacifiCorp uses the 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 newly-adopted industry guide for electric reliability, P1782-2014<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 developing projects that improve reliability, including the Company's fuse coordination program, Fuse It or Lose It (FIOLI), its circuit hardening program, Saving SAIDI, and its capital construction program, Network Initiatives. These programs 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 is assigned a value for reduced interruptions along with the cost for that project, and based upon the best cost projects, selected to align with budget and resource capacity targets. Other tools the Company has created to deliver better reliability to customers include web-based notifications when interrupting devices (such as circuit breakers, reclosers or fuses) have experienced more operations within a given time period than is the norm. This enables field engineering and operations management team members to promptly evaluate means to modify performance in that area of the system. These ad-hoc activities augment the Company's reliability planning process (which is completed annually with quarterly updates); review of historic reliability performance demonstrates the process' efficacy.

### **Report on UE 94 Statewide Reliability Service Measures**

The UE 94 Service Quality document for reliability calls for four measures, R1, R2, R3 and R4, applied on a statewide (Oregon system) basis.

While the Company's improvements in outage reporting resulted in much higher quality sustained outage event information, it disabled the method by which momentary events were calculated. As a result, the prior calculation for R3 understated the momentary outage index. To mitigate this error, OPUC Staff and PacifiCorp developed an approach that provides accurate system level momentary indices and leverages existing SCADA facilities. This plan was filed on April 1, 2005, and subsequently evaluated and approved by OPUC Staff. The calculations from the approved plan are incorporated into the Company's reported R3 measures.

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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 PacifiCorp to evaluate system reliability and determine areas where improvements should be deployed.

## Major Events Excluded from Performance

PacifiCorp filed written documentation for four Major Events in 2013 that were excluded from reliability performance results. They are summarized in the table below.

Oregon 2013 Major Events - Written Filings									
Event Date	Description	CML	CIS	PUC Report Required	Region TMED	Region SAIDI	Oregon SAIDI	Oregon SAIFI	Oregon CAIDI
February 24, 2013	CoastPlus - Loss of Substation	2,622,660	5,842	Yes	9.82	17.54	4.37	0.01	449
August 25, 2013	Central OR - Lightning Storm	1,418,614	4,666	Yes	4.48	18.30	2.37	0.01	304
September 5, 2013	Northeast and WlmVly - Lightning	2,915,651	17,680	Yes	22.77	62.74	4.86	0.03	165
September 28-29, 2013	Coast, WlmVly, South - Lightning	11,036,927	43,934	Yes	34.17	71.82	18.41	0.07	251
<b>TOTAL Oregon Major Events Filed</b>		<b>17,995,852</b>	<b>72,122</b>				<b>30.00</b>	<b>0.12</b>	<b>250</b>

The company excluded eight events where CAIDI was less than five hours, for which no filing is required according to Oregon Administrative Rules.

Oregon 2013 Major Events - Low CAIDI (<300) No Filings									
Event Date	Description	CML	CIS	PUC Report Required	Region TMED	Region SAIDI	Oregon SAIDI	Oregon SAIFI	Oregon CAIDI
March 20, 2013	Northeast OR - Tree/Wind	598,750	3,554	No	9.68	23.23	1.00	0.01	168
April 4, 2013	Northeast OR - Tree/Wind	442,675	3,683	No	9.68	17.17	0.74	0.01	120
June 13, 2013	CoastPlus - Loss of Supply (CHP)	1,579,888	17,079	No	9.82	10.52	2.63	0.03	93
June 24, 2013	Northeast OR - Loss of Supply	1,122,898	5,257	No	9.68	43.56	1.87	0.01	214
August 1, 2013	Northeast OR - Loss of Supply	273,361	3,735	No	9.68	10.60	0.46	0.01	73
August 23, 2013	Central OR - Lightning Storm	1,779,313	10,979	No	4.48	22.95	2.97	0.02	162
September 15, 2013	Northeast OR - Lightning Storm	1,079,607	3,666	No	9.68	41.88	1.80	0.01	294
November 7, 2013	CoastPlus - Substation (Tree)	1,564,208	13,312	No	9.82	10.41	2.61	0.02	118
<b>TOTAL Major Events with low CAIDI</b>		<b>8,440,700</b>	<b>61,265</b>				<b>14.07</b>	<b>0.10</b>	<b>138</b>

## Total Performance Summary

Oregon 2013 Major Events									
Event Date	Description	CML	CIS	PUC Report Required	Region TMED	Region SAIDI	Oregon SAIDI	Oregon SAIFI	Oregon CAIDI
<b>TOTAL Oregon Major Events Filed</b>		<b>17,995,852</b>	<b>72,122</b>	<b>Yes</b>			<b>30.00</b>	<b>0.12</b>	<b>250</b>
<b>TOTAL Major Events with low CAIDI (no filing required)<sup>2</sup></b>		<b>8,440,700</b>	<b>61,265</b>	<b>No</b>			<b>14.07</b>	<b>0.10</b>	<b>138</b>
<b>TOTAL MAJOR EVENTS EXCLUDED</b>		<b>26,436,552</b>	<b>133,387</b>				<b>44.08</b>	<b>0.22</b>	<b>198</b>
<b>Oregon Underlying Events - excludes major events</b>		<b>61,986,436</b>	<b>546,392</b>				<b>103.35</b>	<b>0.91</b>	<b>113</b>
<b>Oregon Total Performance - includes major events</b>		<b>88,422,988</b>	<b>679,779</b>				<b>147.43</b>	<b>1.13</b>	<b>130</b>

## Major Event Thresholds

Effective CY2012, the administrative rules were modified to replace the 10% of operating area customers methodology with IEEE P1366 “2.5 beta” or TMed methodology for determining major events. For PacifiCorp’s service territory in Oregon, all operating areas were grouped into five reliability reporting regions and each reliability region’s threshold determined according to IEEE 1366-2003/2012. The tables below depict the composition of each region and its threshold as used during CY2013 and for application during CY2014.

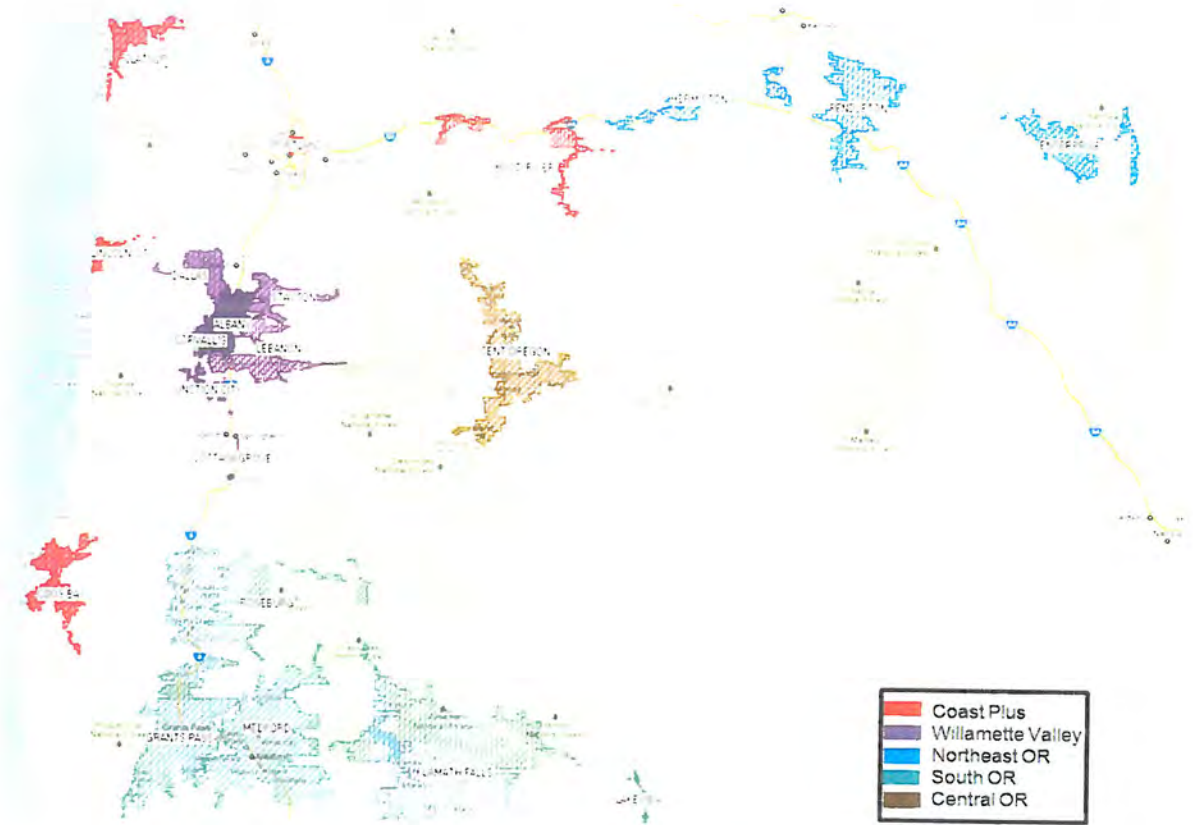
2013 Major Event Thresholds			
Reliability Region	Tmed SAIDI	Tmed CMI	Operating Areas within Region
<i>Central OR</i>	4.48	347,505	Bend/Redmond, Madras
<i>CoastPlus</i>	9.82	1,475,758	Clatsop/Astoria, Coos Bay/Coquille, Hood River, Lincoln City, Portland
<i>Northeast OR</i>	9.68	249,447	Enterprise, Hermiston, Milton-Freewater, Pendleton, Walla Walla
<i>Southern OR</i>	11.26	2,533,923	Grants Pass, Klamath Falls, Lakeview, Medford, Roseburg/Myrtlecreek
<i>WlmVly</i>	13.09	1,585,648	Albany, Corvallis, Cottage Grove/J. City, Dallas/Independence, Lebanon, Stayton

2014 Major Event Thresholds			
Reliability Region	Tmed SAIDI	Tmed CMI	Operating Areas within Region
<i>Central OR</i>	4.49	77,372	Bend/Redmond, Madras
<i>CoastPlus</i>	8.72	1,859,761	Clatsop/Astoria, Coos Bay/Coquille, Hood River, Lincoln City, Portland
<i>Northeast OR</i>	9.32	239,901	Enterprise, Hermiston, Milton-Freewater, Pendleton, Walla Walla
<i>South OR</i>	9.96	2,254,502	Grants Pass, Klamath Falls, Lakeview, Medford, Roseburg/Myrtlecreek
<i>WlmVly</i>	12.52	1,528,901	Albany, Corvallis, Cottage Grove/J. City, Dallas/Independence, Lebanon, Stayton

The following table is a 5-year view of each region’s TMed values.

Calendar Year	2014		2013		2012		2011		2010	
	CMI	SAIDI	CMI	SAIDI	CMI	SAIDI	CMI	SAIDI	CMI	SAIDI
Central OR	77,372	4.49	347,505	4.48	394,135	5.12	460,792	6.04	527,167	6.97
CoastPlus	1,859,761	8.72	1,475,758	9.82	1,409,521	9.43	1,780,515	11.77	1,772,069	12.03
Northeast OR	239,901	9.32	249,447	9.68	129,066	5.02	296,111	5.51	272,651	5.03
South OR	2,254,502	9.96	2,533,923	11.26	2,541,566	11.35	3,064,200	13.74	3,286,421	14.81
WlmVly	1,528,901	12.52	1,585,648	13.09	1,431,248	11.90	1,695,687	14.18	1,675,770	14.10

The graphic below shows the grouping of operating areas into five reliability reporting regions.



## **Standards and Guidelines**

Two questions often arise when discussing reliability, “How much money should we invest in this feeder?” and “When do we reach the point of diminishing returns?” This line of questioning positions engineers, regulators and customers to establish reasonable levels of performance. While both IEEE 1366-1998 and -2003 established methods for evaluating reliability and ensuring consistency of the methodology, it made no effort to establish minimum levels of performance. Each system, customer group and locale creates a unique set of circumstances to which such minimums cannot be fairly applied.

### **Service Quality Measures**

On an annual basis, the Company and Commission Staff review performance to identify areas that need greater focus or may result in modifications to agreed-upon Service Quality Measures (SQMs). This program, which was the direct result of Oregon’s Alternative Form of Regulation (AFOR) coincided with the Company launching its Service Standards Program. As a result of the ScottishPower merger, PacifiCorp moved to adopt system improvement target standards of its own. Subsequently, the Company has met improvement targets and continued to extend the program in reviewing “Worst Performing Circuits”, wherein five circuits are designated annually for extra scrutiny in monitoring performance and developing improvement plans. In other states the Company serves, this program may also address basic reliability metric goals, however in Oregon these are addressed through Oregon’s AFOR SQMs, which are outlined below:

<b>System Performance</b>	
System Availability	Achieve SQM R1 levels better than P-1 level
System Reliability	Achieve SQM R2 levels better than P-1 level
Worst Performing Circuits	Each year achieve a substantial (20%) improvement in the 5 worst performing circuits in each state
Supply Restoration	Achieve SQM R4 levels better than P-1 level

### **Under-Performing Circuits**

After the close of each fiscal year, the Company evaluates those circuits whose blended reliability scores rank low, using its Circuit Performance Indicator (CPI). This is the primary basis for the next year’s Worst Performing Feeders element of its Network Initiatives program. CPI is an acronym for Circuit Performance Indicator, which uses 3-year weighted reliability metrics of the circuit to identify underperforming circuits. The variables and equation for calculating CPI are:

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

**Index: 10.645**

**SAIDI: Weighting Factor 0.30, Normalizing Factor 0.029**



SAIFI: Weighting Factor 0.30, Normalizing Factor 2.439

MAIFI: Weighting Factor 0.20, Normalizing Factor 0.70

Lockouts: Weighting Factor 0.20, Normalizing Factor 2.00

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

The following distribution feeders were selected as under-performing based on CPI scores ending 12/31/2012 (in addition to other criteria, discussions with area engineers) and identified as Program Year 14 (2013) circuits in the Network Initiatives program:

ID	CIRCUIT NAME	KV	OPERATING AREA	CPI <sup>05</sup>
4C42	TERRES HGHTS	20.8	COOS BAY/COQUILLE	363
5K70	EASTSIDE	12.5	HOOD RIVER	521
5R133	GLENDALE	12.5	GRANTS PASS	574
5R259	CHINOOK	12.5	GRANTS PASS	351
5R53	ROUGH & READY	12.5	GRANTS PASS	389

The status of prior years' under-performing circuits is shown in the following table. (Targets for Program Years 1-10 were met and filed previously.)

UNDER-PERFORMING CIRCUITS	BASELINE	Performance 12/31/12
<b>Circuit Performance Indicator 2005 (CPI05)</b>		
Program Year 13 (2012):		
D.R.W.	180	134
Deschutes S	200	196
Goedeck	181	186
Little River	322	360
West	230	110
<b>TARGET = 178</b>	<b>223</b>	<b>197</b>
Program Year 12 (2011):		
Crystal Spr	175	191
Warm Springs	222	174
Idleyld	278	390
Pleasant Vly-Merlin	127	245
Diamond	71	286
<b>TARGET = 140</b>	<b>175</b>	<b>257</b>

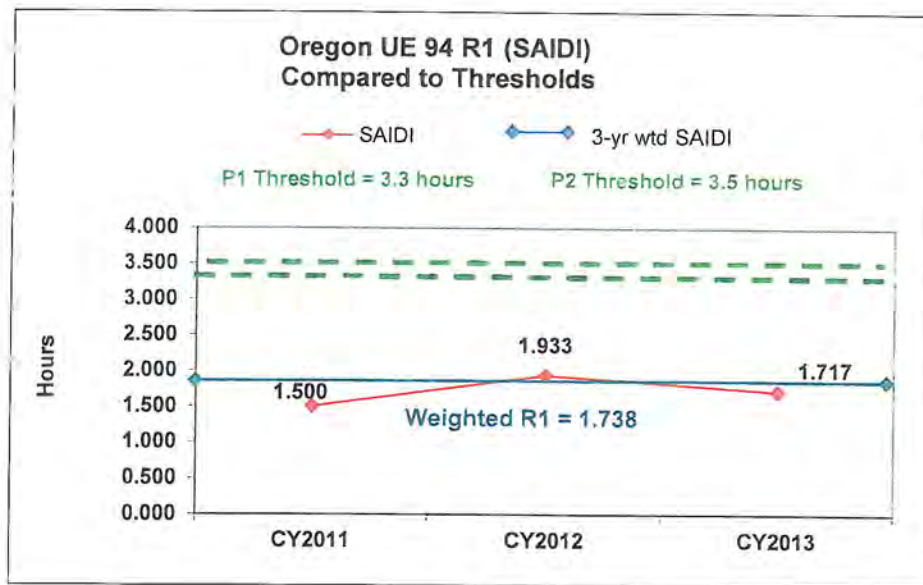
Program Year 11 (2010):		
City	105	58
Oakgrove	230	616
South (Hood River)	120	159
Malin City	241	270
Safari	158	75
<b>TARGET = 137</b>	<b>171</b>	<b>236</b>

**Oregon UE94 - Service Quality Measures  
CY 2013**

**R1 - SAIDI**

Year	SAIDI	Weighting	Product
CY2011	1.500	0.2	0.300
CY2012	1.933	0.3	0.580
CY2013	1.717	0.5	0.858

Weighted R1: 1.738

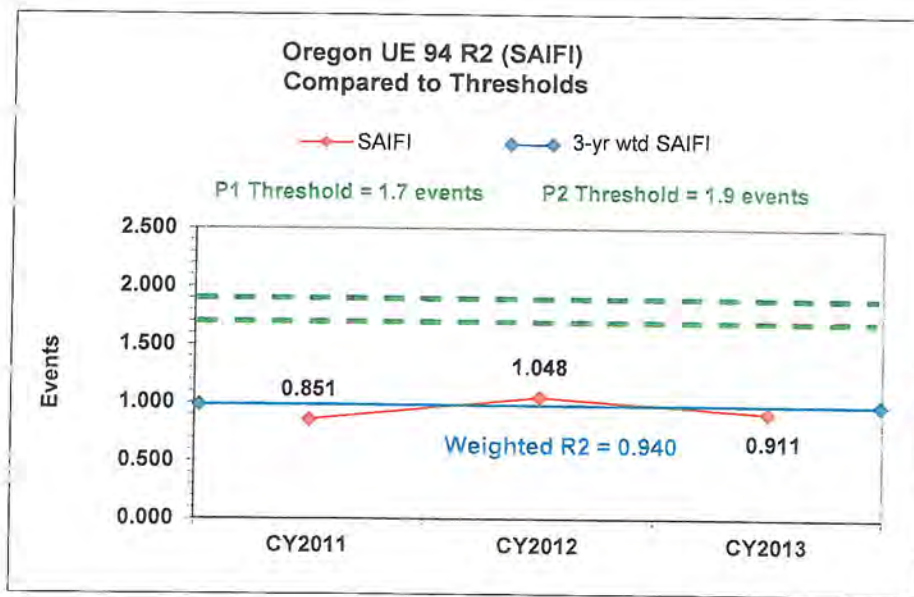


Oregon UE94 - Service Quality Measures  
CY 2013

R2 - SAIFI

Year	SAIFI	Weighting	Product
CY2011	0.851	0.2	0.170
CY2012	1.048	0.3	0.314
CY2013	0.911	0.5	0.456

Weighted R2: 0.940



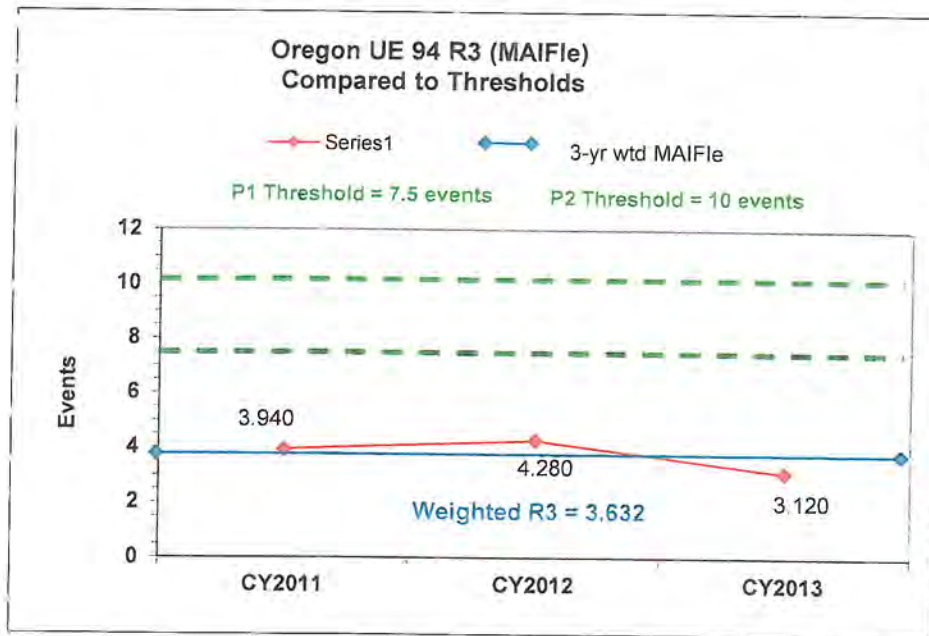
## Oregon UE94 - Service Quality Measures CY 2013

### R3 - MAIFle

Year	MAIFle	Weighting	Product
CY2011	3.940	0.2	0.788
CY2012	4.280	0.3	1.284
CY2013	3.120	0.5	1.560

Weighted R3: **3.632**

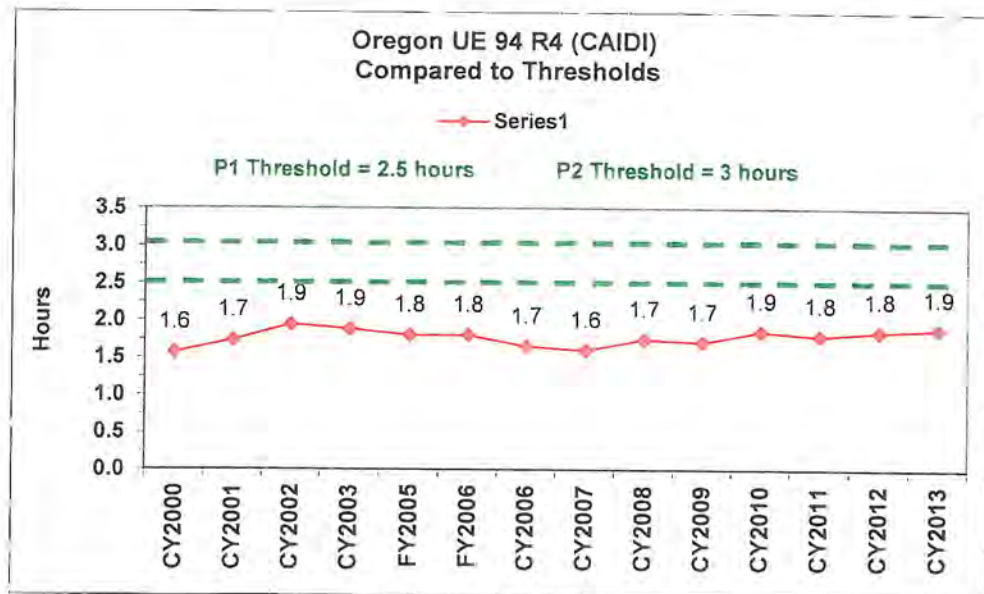
MAIFle developed based on SCADA-operated breaker data per April 1, 2005 report submitted to OPUC



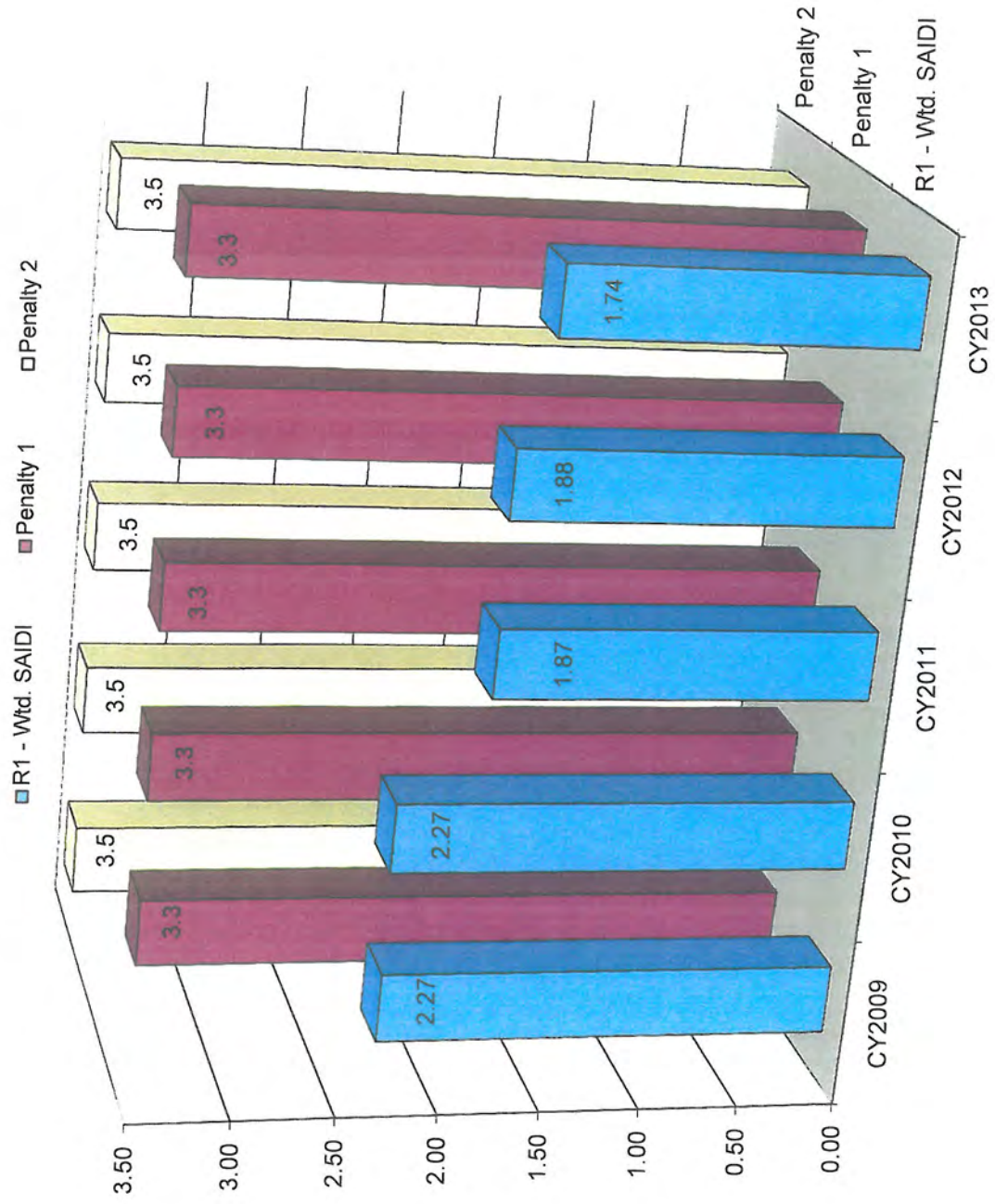
**Oregon UE94 - Service Quality Measures  
CY 2013**

**R4 - CAIDI: Customer Average Outage Duration**

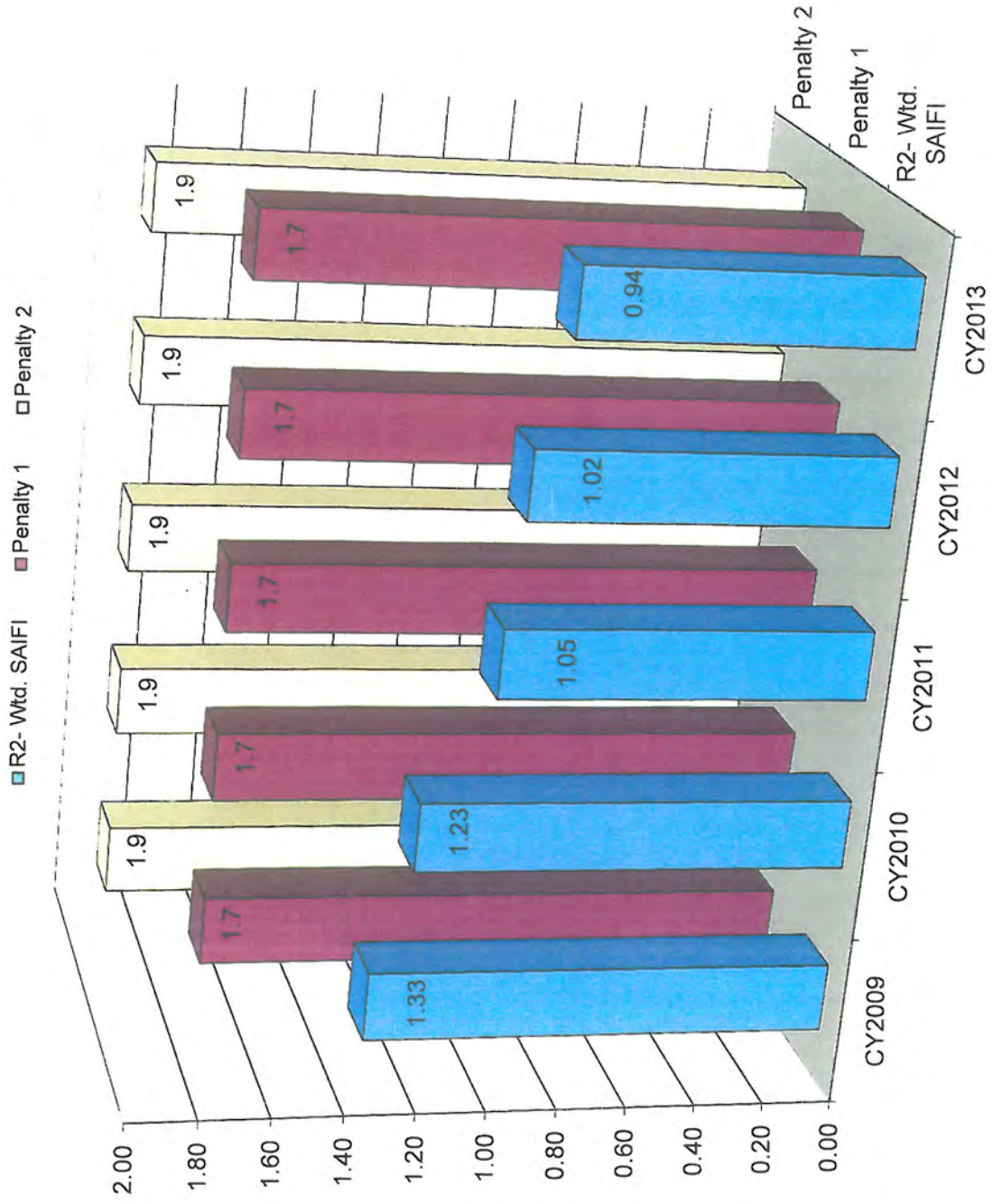
Year	CAIDI (hours)
CY2000	1.6
CY2001	1.7
CY2002	1.9
CY2003	1.9
FY2005	1.8
FY2006	1.8
CY2006	1.7
CY2007	1.6
CY2008	1.7
CY2009	1.7
CY2010	1.9
CY2011	1.8
CY2012	1.8
CY2013	1.9



### R1 - Wtd. SAIDI (excluding Major Events) and UE 94 Thresholds

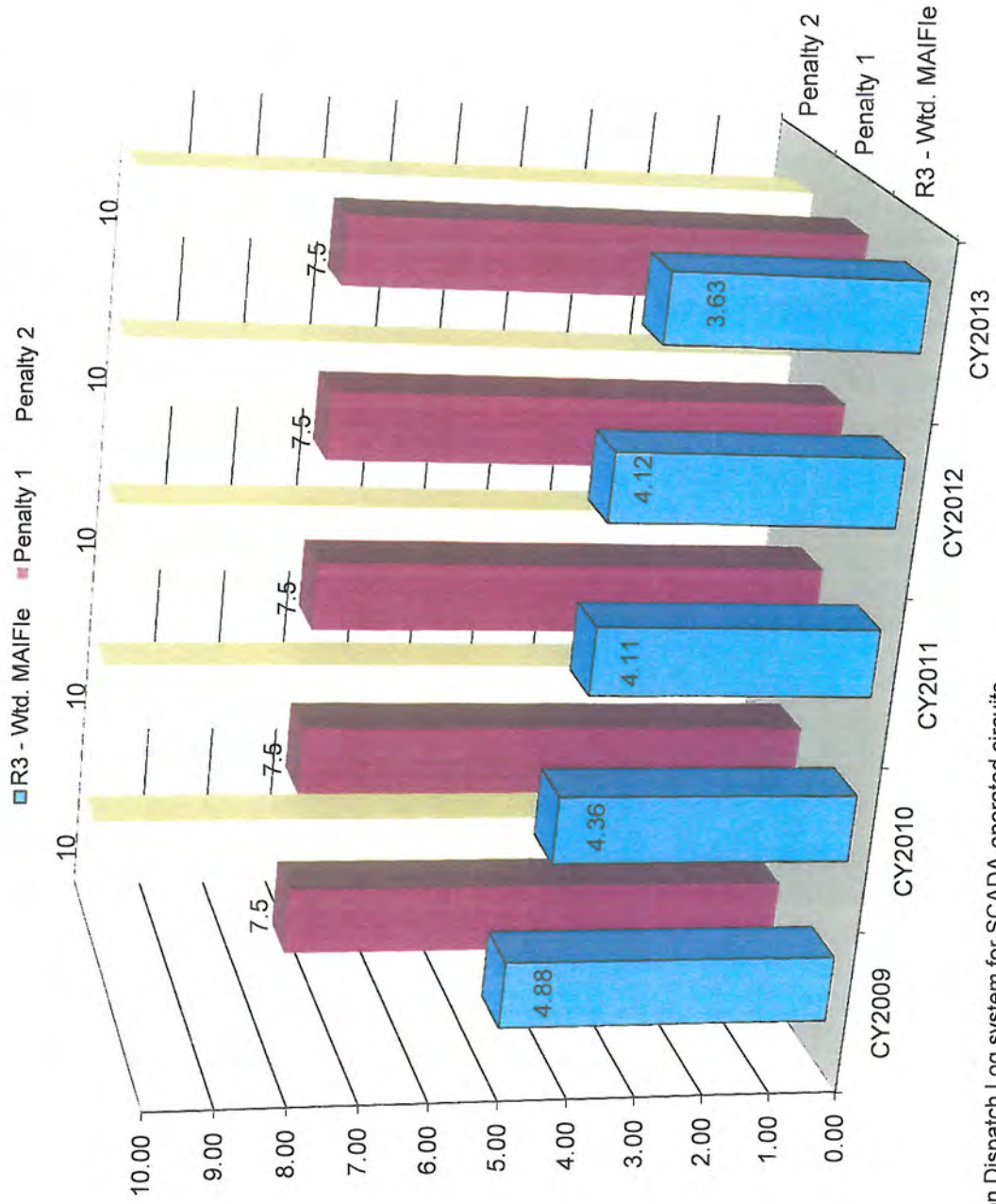


### R2 - Wtd. SAIFI (excluding Major Events) and UE 94 Thresholds





### R3 - Wtd. MAIFle (excluding Major Events) and UE 94 Thresholds



MAIFle based on Dispatch Log system for SCADA-operated circuits.

**Oregon Reliability Reporting Region Metrics - A Five-Year View**

Excluding Major Events	SAIDI					SAIFI					MAIFe				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
OR REGION	86	104	45	34	56	0.626	0.931	0.531	0.362	0.356	4.34	3.30	5.35	3.30	2.67
Central OR	134	163	90	97	68	1.251	1.341	0.788	0.885	0.755	4.46	3.87	3.71	3.98	2.64
CoastPlus	147	122	80	75	96	1.235	1.465	0.876	0.519	0.780	3.04	3.23	2.64	3.98	4.10
Northeast OR	135	130	98	139	120	1.568	0.971	0.880	1.354	0.980	4.53	4.10	3.96	4.61	3.07
South OR	129	158	109	159	148	1.407	1.558	1.090	1.236	1.357	4.99	4.32	3.39	4.85	3.77
WimVly	127	139	90	116	103	1.318	1.188	0.851	1.048	0.911	4.69	3.99	3.94	4.28	3.12

Including Major Events	SAIDI					SAIFI					MAIFe				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
OR REGION	116	104	171	95	98	1.359	0.931	0.862	0.779	0.557	4.34	3.30	5.35	3.30	2.67
Central OR	208	175	188	521	137	1.689	1.565	1.206	1.945	1.145	4.46	3.87	3.71	3.98	2.64
CoastPlus	220	171	80	149	282	1.396	1.972	0.876	0.976	1.603	3.04	3.23	2.64	3.98	4.10
Northeast OR	235	134	405	417	134	2.194	0.999	1.402	1.672	1.022	4.53	4.10	3.96	4.61	3.07
South OR	187	244	273	444	189	1.600	1.956	1.587	2.229	1.593	4.99	4.32	3.39	4.85	3.77
WimVly	202	163	279	395	147	1.803	1.356	1.295	1.708	1.133	4.69	3.99	3.94	4.28	3.12

Oregon 2013 Major Events										
Event Date	Description	CML	CIS	PUC Report Required	Region TMED	Region SAIDI	Region SAIFI	Oregon SAIDI	Oregon SAIFI	Oregon CAIDI
February 24, 2013	CoastPlus - Loss of Substation	2,622,660	5,842	Yes	9.82	17.54	4.37	4.37	0.01	449
March 20, 2013	Northeast OR - Tree/Wind	598,750	3,554	No	9.68	23.23	1.00	1.00	0.01	168
April 4, 2013	Northeast OR - Tree/Wind	442,675	3,683	No	9.68	17.17	0.74	0.74	0.01	120
June 13, 2013	CoastPlus - Loss of Supply (CHP)	1,579,888	17,079	No	9.82	10.52	2.63	2.63	0.03	93
June 24, 2013	Northeast OR - Loss of Supply	1,122,898	5,257	No	9.68	43.56	1.87	1.87	0.01	214
August 1, 2013	Northeast OR - Loss of Supply	273,361	3,735	No	9.68	10.60	0.46	0.46	0.01	73
August 23, 2013	Central OR - Lightning Storm	1,779,313	10,979	No	4.48	22.95	2.97	2.97	0.02	162
August 25, 2013	Central OR - Lightning Storm	1,418,614	4,666	Yes	4.48	18.30	2.37	2.37	0.01	304
September 5, 2013	Northeast and WlmVly - Lightning	2,915,651	17,680	Yes <sup>1</sup>	22.77	62.74	4.86	4.86	0.03	165
September 15, 2013	Northeast OR - Lightning Storm	1,079,607	3,666	No	9.68	41.88	1.80	1.80	0.01	294
September 28-29, 2013	Coast, WlmVly, South - Lightning	11,038,927	43,934	Yes <sup>1</sup>	34.17	71.82	18.41	18.41	0.07	251
November 7, 2013	CoastPlus - Substation (Tree)	1,564,208	13,312	No	9.82	10.41	2.61	2.61	0.02	118
Measure		CML	CIS	PUC Report Required			SAIDI	SAIFI	CAIDI	
<b>TOTAL Oregon Major Events Filed</b>		<b>17,995,852</b>	<b>72,122</b>	<b>Yes</b>			<b>30.00</b>	<b>0.12</b>	<b>250</b>	
<b>TOTAL Major Events with low CAIDI (no filing required)<sup>2</sup></b>		<b>8,440,700</b>	<b>61,265</b>	<b>No</b>			<b>14.07</b>	<b>0.10</b>	<b>138</b>	
<b>TOTAL MAJOR EVENTS EXCLUDED</b>		<b>26,436,552</b>	<b>133,387</b>				<b>44.08</b>	<b>0.22</b>	<b>198</b>	
<b>Oregon Underlying Events - excludes major events</b>		<b>61,986,436</b>	<b>546,392</b>				<b>103.35</b>	<b>0.91</b>	<b>113</b>	
<b>Oregon Total Performance - includes major events</b>		<b>88,422,988</b>	<b>679,779</b>				<b>147.43</b>	<b>1.13</b>	<b>130</b>	

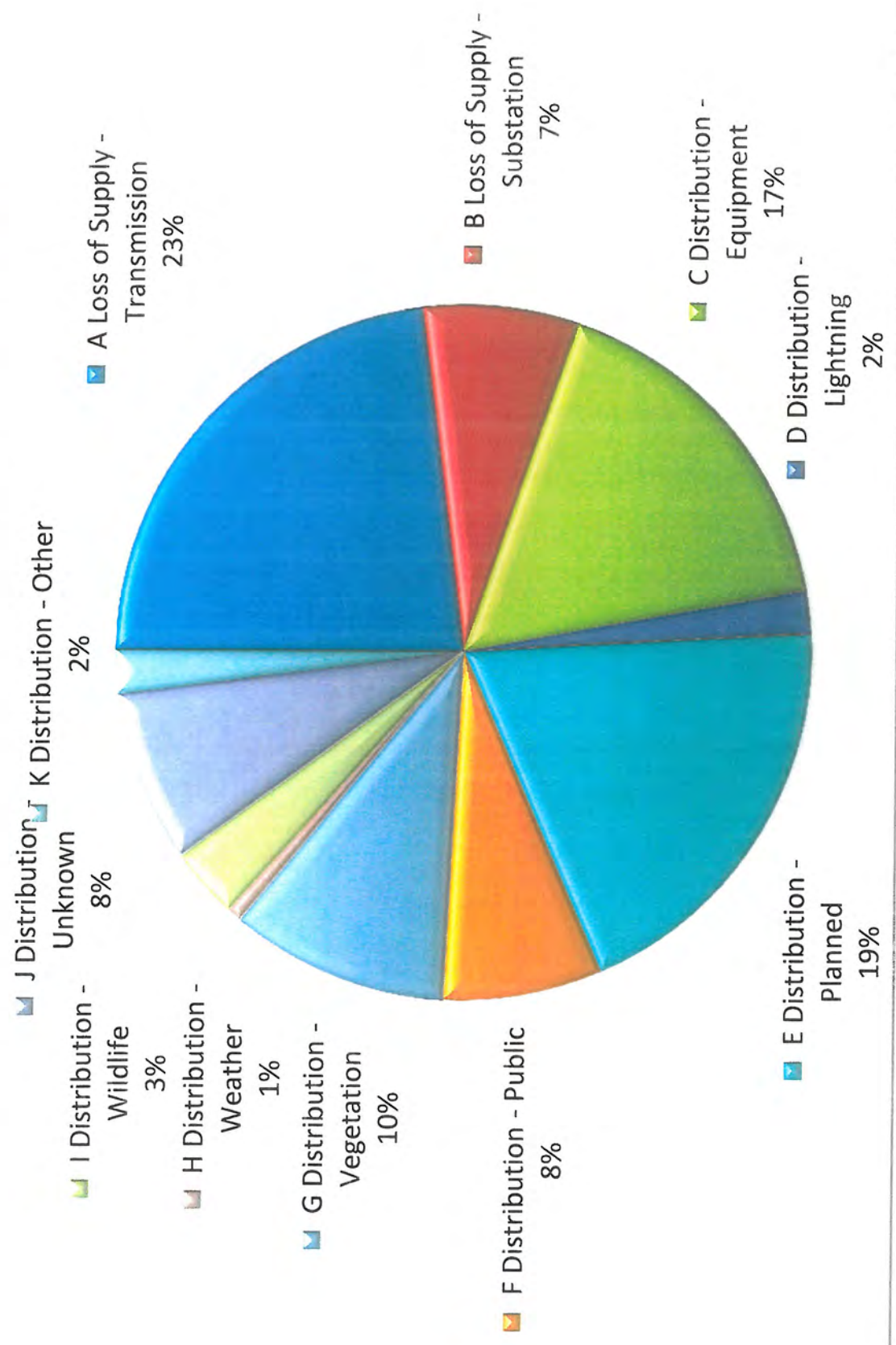
<sup>1</sup> When multiple regions are affected in the same event, if any region CAIDI exceeds 300 minutes, then all the affected regions are filed together even if their combined CAIDI is lower than 300 minutes. Each individual region's CAIDI is shown in the filing.

<sup>2</sup> Oregon Administrative Rule 860-023-0161 requires that a major event filing be completed within 30 business days after the conclusion of the event when the event CAIDI exceeds five hours.

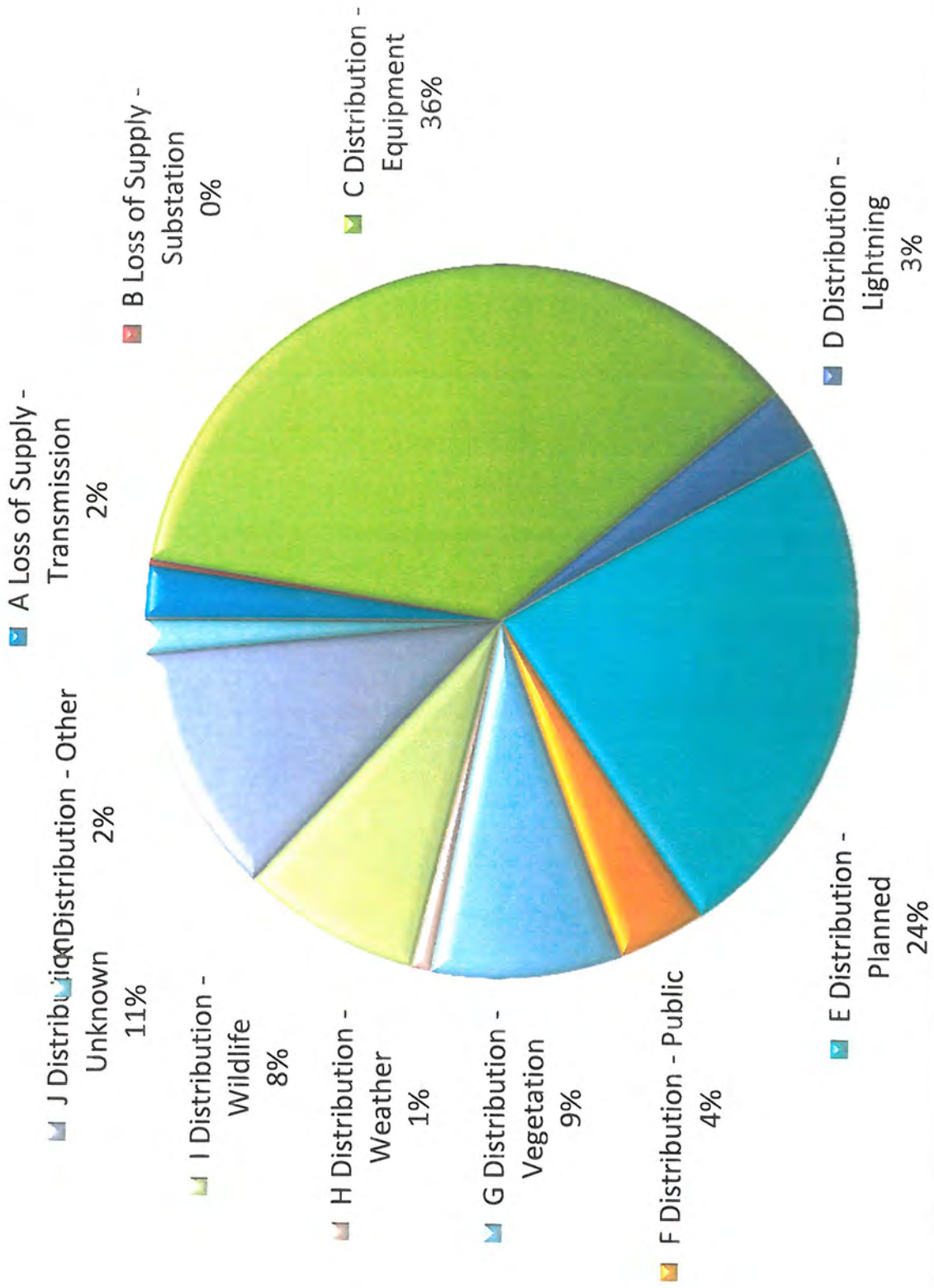
## Reliability Region and Operating Area Customer Counts

Region	Op Area	CY2013	CY2012	CY2011	CY2010	CY2009
Central OR	BEND/REDMOND	60,345	59,844	59,238	58,757	57,947
Central OR	MADRAS	17,177	17,113	17,006	16,919	16,813
<b>Central OR</b>		<b>77,522</b>	<b>76,957</b>	<b>76,244</b>	<b>75,676</b>	<b>74,760</b>
CoastPlus	CLATSOP (ASTORIA)	24,215	24,128	23,883	23,724	23,542
CoastPlus	COOS BAY/COQUILLE	27,200	27,210	27,080	26,929	26,793
CoastPlus	HOOD RIVER	9,269	9,180	9,067	8,924	8,835
CoastPlus	LINCOLN CITY	12,052	12,018	11,972	11,929	11,841
CoastPlus	PORTLAND	77,501	76,977	79,270	75,838	74,371
<b>CoastPlus</b>		<b>150,237</b>	<b>149,513</b>	<b>151,272</b>	<b>147,344</b>	<b>145,382</b>
Northeast OR	ENTERPRISE	5,483	5,457	5,412	5,383	5,335
Northeast OR	HERMISTON	4,783	4,745	4,686	4,614	4,577
Northeast OR	MILTON/FREEWATER	1,003	994	996	988	984
Northeast OR	PENDLETON	13,151	13,122	13,063	13,756	13,669
Northeast OR	WALLA WALLA OR	1,360	1,416	1,407	1,398	1,391
<b>Northeast OR</b>		<b>25,780</b>	<b>25,734</b>	<b>25,564</b>	<b>26,139</b>	<b>25,956</b>
South OR	GRANTS PASS	51,957	51,497	51,572	51,346	51,051
South OR	KLAMATH FALLS	39,004	38,925	38,763	38,492	38,246
South OR	LAKEVIEW	2,557	2,529	2,516	2,497	2,467
South OR	MEDFORD	88,690	87,985	87,397	86,957	86,269
South OR	ROSEBURG/MYRTLECREEK	42,926	42,807	42,694	42,553	42,376
<b>South OR</b>		<b>225,134</b>	<b>223,743</b>	<b>222,942</b>	<b>221,845</b>	<b>220,409</b>
WlmVly	ALBANY	32,310	32,119	31,907	31,710	31,171
WlmVly	CORVALLIS	29,330	28,981	28,820	28,695	28,527
WlmVly	COTTAGE GROVE/J. CITY	11,329	11,292	11,233	11,184	11,135
WlmVly	DALLAS/INDEPENDENCE	14,725	14,674	14,605	14,525	14,385
WlmVly	LEBANON	19,644	19,531	19,434	19,229	19,014
WlmVly	STAYTON	13,764	13,675	13,600	13,513	13,416
<b>WlmVly</b>		<b>121,102</b>	<b>120,272</b>	<b>119,599</b>	<b>118,856</b>	<b>117,648</b>

# 2013 Oregon Cause Analysis - Customer Interruptions



# 2013 Oregon Cause Analysis - Sustained Incidents



Oregon Cause Analysis Summary (excluding major events)

AFOR Cause Category	2009		2010		2011		2012		2013	
	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count
A Loss of Supply - Transmission	315,597	304	207,272	211	115,185	136	180,451	201	131,218	225
B Loss of Supply - Substation	17,467	25	18,832	31	15,297	13	14,452	15	41,699	28
C Distribution - Equipment	88,441	3,880	109,604	3,703	86,844	3,605	90,948	3,481	96,346	3,447
D Distribution - Lightning	10,159	449	6,772	180	2,850	192	3,837	196	11,265	277
E Distribution - Planned	92,474	2,081	109,952	2,213	81,532	2,085	101,289	2,211	110,718	2,244
F Distribution - Public	48,686	452	44,328	429	44,319	371	38,245	360	42,340	381
G Distribution - Vegetation	106,497	1,250	88,059	1,346	76,024	1,051	120,018	1,372	57,924	824
H Distribution - Weather	17,545	270	23,150	264	10,260	239	6,133	244	3,959	84
I Distribution - Wildlife	23,542	941	29,463	905	33,903	674	22,305	753	18,874	773
J Distribution - Unknown	52,878	1,203	67,541	1,310	52,065	1,107	52,849	990	45,895	1,092
K Distribution - Other	14,793	166	18,032	153	10,776	175	13,593	150	11,755	150
<b>OREGON TOTALS</b>	<b>788,079</b>	<b>11,021</b>	<b>723,005</b>	<b>10,745</b>	<b>529,055</b>	<b>9,648</b>	<b>644,120</b>	<b>9,973</b>	<b>571,993</b>	<b>9,525</b>

Oregon Cause Analysis by Reliability Region (excluding major events)

OR REGION	AFOR Cause	Direct Cause	2009		2010		2011		2012		2013	
			Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count
Central OR	A Loss of Supply - Transmission	LOSS OF FEED FROM SUPPLIER		0	0	0	0	0	2950	24		
Central OR	A Loss of Supply - Transmission	LOSS OF TRANSMISSION LINE		10684	9	15538	15				0	0
Central OR	A Loss of Supply - Transmission	RELAYS, BREAKERS, SWITCHES	0	2							7	2
Central OR	A Loss of Supply - Transmission	STRUCTURES, INSULATORS, CONDUCTOR					0	3			12	11
Central OR	B Loss of Supply - Substation	LOSS OF SUBSTATION							2073	2	2866	2
Central OR	C Distribution - Equipment	B/O EQUIPMENT	3843	155	4172	135	983	166	6771	143	3439	140
Central OR	C Distribution - Equipment	DETERIORATION OR ROTTING	4067	266	5736	202	5629	217	3428	208	3957	178
Central OR	C Distribution - Equipment	NEARBY FAULT	1	1	98	1						
Central OR	C Distribution - Equipment	OVERLOAD	765	10	1	1	4	2			433	7
Central OR	C Distribution - Equipment	POLE FIRE	153	2	132	4	190	4	122	4	513	5
Central OR	D Distribution - Lightning	LIGHTNING	1275	67	2321	37	1811	68	118	25	71	27
Central OR	E Distribution - Planned	CONSTRUCTION	164	6	98	14	9	2	443	19	57	15
Central OR	E Distribution - Planned	CUSTOMER NOTICE GIVEN	485	65	1295	52	1439	65	789	46	5984	59
Central OR	E Distribution - Planned	CUSTOMER REQUESTED	73	14	20	10	61	23	66	41	132	36
Central OR	E Distribution - Planned	EMERGENCY DAMAGE REPAIR	4544	55	1068	42	2067	57	2854	52	5086	52
Central OR	E Distribution - Planned	INTENTIONAL TO CLEAR TROUBLE	88	8	22793	17	38	7	1064	6	1812	6
Central OR	F Distribution - Public	DIG-IN (NON-PACIFICORP PERSONNEL)	10	8	165	9	1162	11	732	14	17	6
Central OR	F Distribution - Public	OTHER INTERFERING OBJECT	11	4			311	7	15	1		
Central OR	F Distribution - Public	OTHER UTILITY/CONTRACTOR	2717	8	137	7	67	6	621	9	210	8
Central OR	F Distribution - Public	VANDALISM OR THEFT	3	3	1	1	1	1	1	1	15	4
Central OR	F Distribution - Public	VEHICLE ACCIDENT	1586	27	2037	16	1915	25	1739	36	3713	30
Central OR	G Distribution - Vegetation	TREE - NON-PREVENTABLE	17300	98	2725	40	1150	58	1613	42	3324	39
Central OR	G Distribution - Vegetation	TREE - TRIMMABLE			4	1			8	1	3	3
Central OR	H Distribution - Weather	FREEZING FOG & FROST			1	1						
Central OR	H Distribution - Weather	ICE	1	1							0	0
Central OR	H Distribution - Weather	SNOW, SLEET AND BLIZZARD	140	24				45	49	3		
Central OR	H Distribution - Weather	WIND	231	9	2693	6	2169	7	168	5	184	3
Central OR	I Distribution - Wildlife	ANIMALS	99	35	206	32	58	20	182	28	94	25
Central OR	I Distribution - Wildlife	BIRD MORTALITY (NON-PROTECTED)	76	15	199	22	119	12	60	27	179	21
Central OR	I Distribution - Wildlife	BIRD MORTALITY (PROTECTED SPECIES)	2481	8	1101	10	7	2	27	6	6	4
Central OR	I Distribution - Wildlife	BIRD NEST (BMTS)	1509	5			37	1	1	1	5	2
Central OR	I Distribution - Wildlife	BIRD SUSPECTED, NO MORTALITY	176	11	127	19	57	10	24	9	13	8
Central OR	J Distribution - Unknown	UNKNOWN	1124	96	9870	111	6617	85	2497	82	1488	88
Central OR	K Distribution - Other	FAULTY INSTALL	2	2	6	2						
Central OR	K Distribution - Other	FIRE/SMOKE (NOT DUE TO FAULTS)	6	1	2	3	11	8	5	2	7	6
Central OR	K Distribution - Other	INCORRECT RECORDS	5	5	2	2	3	3	1	1	1	1
Central OR	K Distribution - Other	OTHER, KNOWN CAUSE	95	10	4091	10	10	11	165	7	91	9
Central OR	K Distribution - Other	PACIFICORP EMPLOYEE - FIELD	4294	10	0	0	2	2	147	2	0	0
Central OR	K Distribution - Other	SWITCHING ERROR									2	1



OR REGION	AFOR Cause	Direct Cause	2009		2010		2011		2012		2013	
			Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count
Central OR	K Distribution - Other	UNSAFE SITUATION	5	1								
CoastPlus	A Loss of Supply - Transmission	FAILURE ON OTHER LINE OR STATION										
CoastPlus	A Loss of Supply - Transmission	LOSS OF FEED FROM SUPPLIER	2758	14	10565	9	1980	5	8725	7	1006	1
CoastPlus	A Loss of Supply - Transmission	LOSS OF TRANSMISSION LINE	54911	44	55093	52	3060	6	25083	23	27389	5
CoastPlus	A Loss of Supply - Transmission	RELAYS, BREAKERS, SWITCHES							0	1	3	22
CoastPlus	A Loss of Supply - Transmission	STRUCTURES, INSULATORS, CONDU	0	1	0	2	0	1	0	5	13	7
CoastPlus	B Loss of Supply - Substation	LOSS OF SUBSTATION	3608	2	14674	18	6828	4	2492	2	10730	22
CoastPlus	C Distribution - Equipment	B/O EQUIPMENT	14425	588	12666	541	15939	551	8573	530	17436	8
CoastPlus	C Distribution - Equipment	DETERIORATION OR ROTTING	6654	594	14997	647	8630	542	3883	428	3866	538
CoastPlus	C Distribution - Equipment	NEARBY FAULT	2	2	1	1						454
CoastPlus	C Distribution - Equipment	OVERLOAD	470	14	2686	4	355	5	16	2	33	1
CoastPlus	C Distribution - Equipment	POLE FIRE	12	2	204	4	1844	3	258	5	128	4
CoastPlus	D Distribution - Lighting	LIGHTNING	425	14	114	13	129	24	38	8	78	2
CoastPlus	E Distribution - Planned	CONSTRUCTION	150	25	107	15	172	6	1036	89	104	18
CoastPlus	E Distribution - Planned	CUSTOMER NOTICE GIVEN	7801	297	5947	377	7791	326	3591	254	7046	25
CoastPlus	E Distribution - Planned	CUSTOMER REQUESTED	782	40	302	34	50	35	128	67	397	342
CoastPlus	E Distribution - Planned	EMERGENCY DAMAGE REPAIR	15426	183	15918	138	13705	136	12418	153	16289	95
CoastPlus	E Distribution - Planned	INTENTIONAL TO CLEAR TROUBLE	4695	26	200	10	2047	8	854	15	949	111
CoastPlus	E Distribution - Planned	MAINTENANCE										12
CoastPlus	E Distribution - Planned	TRANSMISSION REQUESTED	694	1	760	2	2807	4			0	1
CoastPlus	F Distribution - Public	DIG-IN (NON-PACIFICORP PERSONNE	98	11	12	5	43	9	26	7	68	9
CoastPlus	F Distribution - Public	OTHER INTERFERING OBJECT	13	2	328	5	209	7	1836	6	117	7
CoastPlus	F Distribution - Public	OTHER UTILITY/CONTRACTOR	213	15	21	12	2088	23	2838	11	1382	17
CoastPlus	F Distribution - Public	VANDALISM OR THEFT	42	6	4	4	15	5	102	5	556	8
CoastPlus	F Distribution - Public	VEHICLE ACCIDENT	18401	69	10421	75	3495	47	6052	40	5684	36
CoastPlus	G Distribution - Vegetation	TREE - NON-PREVENTABLE	34013	389	22128	323	26981	290	37247	389	11277	172
CoastPlus	G Distribution - Vegetation	TREE - TRIMMABLE	73	5	3	3	10	3	95	8	740	5
CoastPlus	H Distribution - Weather	CONDENSATION / MOISTURE	188	4	19	1						
CoastPlus	H Distribution - Weather	FREEZING FOG & FROST	61	5								
CoastPlus	H Distribution - Weather	ICE	410	10					8	3	0	0
CoastPlus	H Distribution - Weather	SNOW, SLEET AND BLIZZARD	19	3	39	2	262	12	186	57		
CoastPlus	H Distribution - Weather	WIND	5661	39	4927	53	2169	40	931	27	102	6
CoastPlus	I Distribution - Wildlife	ANIMALS	1442	101	7174	98	7986	60	4510	66	1183	84
CoastPlus	I Distribution - Wildlife	BIRD MORTALITY (NON-PROTECTED)	150	14	44	6	408	8	19	5	86	13
CoastPlus	I Distribution - Wildlife	BIRD MORTALITY (PROTECTED SPEC	303	13	1862	16	10911	20	1897	19	1989	8
CoastPlus	I Distribution - Wildlife	BIRD NEST (BMTS)	1231	7			4	1	71	2		
CoastPlus	I Distribution - Wildlife	BIRD SUSPECTED, NO MORTALITY	174	6	733	5	34	7	42	4	10	4
CoastPlus	J Distribution - Unknown	UNKNOWN	11766	158	14007	151	4262	156	8127	97	5955	134
CoastPlus	K Distribution - Other	CONTAMINATION	20	8	4461	16	1	1	578	1	1	1

OR REGION	AFOR Cause	Direct Cause	2009		2010		2011		2012		2013	
			Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count
CoastPlus	K Distribution - Other	FAULTY INSTALL	1	1	1	1	3	3			2	2
CoastPlus	K Distribution - Other	FIRE/SMOKE (NOT DUE TO FAULTS)	4	4	15	2	4	4	1803	4	13	3
CoastPlus	K Distribution - Other	FLOODING	620	2	797	1						
CoastPlus	K Distribution - Other	IMPROPER PROTECTIVE COORDINATION			2504	10					2778	5
CoastPlus	K Distribution - Other	INCORRECT RECORDS	7	3			17	6	3	3	4	4
CoastPlus	K Distribution - Other	INTERNAL CONTRACTOR	29	2								
CoastPlus	K Distribution - Other	INTERNAL TREE CONTRACTOR					1	1	14	1	19	2
CoastPlus	K Distribution - Other	OTHER, KNOWN CAUSE	2537	13	13	7	2790	13	167	17	3404	27
CoastPlus	K Distribution - Other	PACIFICORP EMPLOYEE - FIELD	113	7	71	3	2	2	35	3	3	3
CoastPlus	K Distribution - Other	SWITCHING ERROR						0	0	0		
CoastPlus	K Distribution - Other	UNSAFE SITUATION					6	1	9	1		
Northeast OR	A Loss of Supply - Transmission	FAILURE ON OTHER LINE OR STATION			0	1					0	1
Northeast OR	A Loss of Supply - Transmission	LOSS OF FEED FROM SUPPLIER	2150	7	793	4	978	5	464	4	3428	23
Northeast OR	A Loss of Supply - Transmission	LOSS OF TRANSMISSION LINE	3216	5	6219	8	2901	8	573	2	1478	4
Northeast OR	A Loss of Supply - Transmission	RELAYS, BREAKERS, SWITCHES					0	0				
Northeast OR	A Loss of Supply - Transmission	STRUCTURES, INSULATORS, CONDU	0	1							6	6
Northeast OR	A Loss of Supply - Transmission	SYSTEM PROTECTION									0	1
Northeast OR	B Loss of Supply - Substation	LOSS OF SUBSTATION			92	1					1416	1
Northeast OR	C Distribution - Equipment	B/O EQUIPMENT	2659	105	931	108	661	102	737	130	2901	111
Northeast OR	C Distribution - Equipment	DETERIORATION OR ROTTING	3144	105	2054	108	991	119	1299	91	1340	90
Northeast OR	C Distribution - Equipment	OVERLOAD	6	3	2	1	12	3			1	1
Northeast OR	C Distribution - Equipment	POLE FIRE	1349	8	4095	8	954	16	732	12	1989	13
Northeast OR	D Distribution - Lightning	LIGHTNING	1942	17	1454	30	218	29	1447	107	245	22
Northeast OR	E Distribution - Planned	CONSTRUCTION	3	1	14	2	872	1	0	8	9	6
Northeast OR	E Distribution - Planned	CUSTOMER NOTICE GIVEN	1019	55	880	86	839	61	508	26	1107	31
Northeast OR	E Distribution - Planned	CUSTOMER REQUESTED	4	4	6	6	10	6	12	12	40	26
Northeast OR	E Distribution - Planned	EMERGENCY DAMAGE REPAIR	3284	25	2956	23	1035	27	2322	36	2918	34
Northeast OR	E Distribution - Planned	INTENTIONAL TO CLEAR TROUBLE	5	2	1919	6	24	2	34	4	106	3
Northeast OR	E Distribution - Planned	MAINTENANCE										
Northeast OR	E Distribution - Planned	TRANSMISSION REQUESTED	869	2	0	0					0	1
Northeast OR	F Distribution - Public	DIG-IN (NON-PACIFICORP PERSONNEL)	4	3	17	3	13	6	5	3	5	5
Northeast OR	F Distribution - Public	OTHER INTERFERING OBJECT	5	2	1	1	148	4	223	7	3	2
Northeast OR	F Distribution - Public	OTHER UTILITY/CONTRACTOR	95	2	197	3	11	2	1	1	10	2
Northeast OR	F Distribution - Public	VANDALISM OR THEFT			10	1					3	1
Northeast OR	F Distribution - Public	VEHICLE ACCIDENT	3307	16	627	31	896	10	999	12	1076	14
Northeast OR	G Distribution - Vegetation	TREE - NON-PREVENTABLE	2279	69	1061	55	5075	40	1952	63	531	48
Northeast OR	G Distribution - Vegetation	TREE - TRIMMABLE	1	1	1	1	57	1			2	3
Northeast OR	H Distribution - Weather	FREEZING FOG & FROST					105	3			4	2
Northeast OR	H Distribution - Weather	ICE	107	13			14	2	0	1	0	1

Oregon Cause Analysis by Reliability Region (excluding major events)

OR REGION	AFOR Cause	Direct Cause	2009		2010		2011		2012		2013	
			Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count
Northeast OR	H Distribution - Weather	SNOW, SLEET AND BLIZZARD	291	16	250	6	120	6	50	6		
Northeast OR	H Distribution - Weather	WIND	1700	16	5635	26	346	12	338	31	92	11
Northeast OR	J Distribution - Wildlife	ANIMALS	318	79	566	74	1944	75	368	74	883	84
Northeast OR	J Distribution - Wildlife	BIRD MORTALITY (NON-PROTECTED)	912	26	28	14	60	26	86	35	84	18
Northeast OR	J Distribution - Wildlife	BIRD MORTALITY (PROTECTED SPEC)	21	6	322	8	111	5	75	7	18	5
Northeast OR	J Distribution - Wildlife	BIRD NEST (BMTS)			15	1			114	2	3	1
Northeast OR	J Distribution - Wildlife	BIRD SUSPECTED, NO MORTALITY	20	10	135	14	15	7	11	7	73	8
Northeast OR	J Distribution - Unknown	UNKNOWN	2638	111	6423	132	2305	119	1190	99	1437	115
Northeast OR	K Distribution - Other	CONTAMINATION					1	1	16	1	1	1
Northeast OR	K Distribution - Other	FAULTY INSTALL										
Northeast OR	K Distribution - Other	FIRE/SMOKE (NOT DUE TO FAULTS)	15	4	9	2	7	1	142	3	20	3
Northeast OR	K Distribution - Other	INCORRECT RECORDS	1	1	5	1	1	1	1	1	27	2
Northeast OR	K Distribution - Other	INTERNAL CONTRACTOR					275	3				
Northeast OR	K Distribution - Other	OTHER, KNOWN CAUSE	5	3	407	2	5	5	35	8	17	5
Northeast OR	K Distribution - Other	PACIFICORP EMPLOYEE - FIELD	1	1			998	3			0	0
South OR	A Loss of Supply - Transmission	FAILURE ON OTHER LINE OR STATION					0	1			0	0
South OR	A Loss of Supply - Transmission	LOSS OF FEED FROM SUPPLIER	64	1	19	1	66	6	104	6	20	1
South OR	A Loss of Supply - Transmission	LOSS OF GENERATOR			178	1						
South OR	A Loss of Supply - Transmission	LOSS OF TRANSMISSION LINE	209253	191	52506	80	66921	69	126428	114	52487	73
South OR	A Loss of Supply - Transmission	RELAYS, BREAKERS, SWITCHES	0	0	0	1	0	3	2	2	2	2
South OR	A Loss of Supply - Transmission	STRUCTURES, INSULATORS, CONDU	0	6	0	3	0	1	0	5	19	13
South OR	A Loss of Supply - Transmission	SYSTEM PROTECTION			0	1			0			
South OR	B Loss of Supply - Substation	LOSS OF SUBSTATION	13614	21	4066	12	8469	9	5475	9	22700	14
South OR	C Distribution - Equipment	B/O EQUIPMENT	13840	639	13588	602	17829	502	24860	575	10924	631
South OR	C Distribution - Equipment	DETERIORATION OR ROTTING	8591	588	11576	649	10364	665	8502	611	14209	562
South OR	C Distribution - Equipment	NEARBY FAULT	75	5	2664	3	2	1			0	0
South OR	C Distribution - Equipment	OVERLOAD	5884	29	5	4	640	18	79	9	5112	20
South OR	C Distribution - Equipment	POLE FIRE	1575	4	1081	5	123	8	3448	14	57	4
South OR	D Distribution - Lightning	LIGHTNING	3618	291	2221	85	489	32	635	47	7740	183
South OR	E Distribution - Planned	CONSTRUCTION	526	32	373	39	401	21	2787	164	168	54
South OR	E Distribution - Planned	CUSTOMER NOTICE GIVEN	4459	354	7271	400	5449	447	9560	353	8007	376
South OR	E Distribution - Planned	CUSTOMER REQUESTED	244	30	167	69	440	104	520	155	514	203
South OR	E Distribution - Planned	EMERGENCY DAMAGE REPAIR	11011	188	25626	309	19374	283	28342	246	24506	244
South OR	E Distribution - Planned	INTENTIONAL TO CLEAR TROUBLE	2805	27	2239	37	1497	18	3170	31	4881	36
South OR	E Distribution - Planned	MAINTENANCE									0	1
South OR	E Distribution - Planned	TRANSMISSION REQUESTED	5455	3	5923	10	18	2	4838	5	0	0
South OR	F Distribution - Public	DIG-IN (NON-PACIFICORP PERSONNEL)	140	21	125	19	370	17	109	19	255	26
South OR	F Distribution - Public	OTHER INTERFERING OBJECT	303	7	805	11	1030	8	319	12	3480	9
South OR	F Distribution - Public	OTHER UTILITY/CONTRACTOR	851	28	372	28	2324	35	1392	22	2544	20

OR REGION	AFOR Cause	Direct Cause	2009		2010		2011		2012		2013	
			Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count
South OR	F Distribution - Public	TREE-FELLED BY LOGGER	0	1								0
South OR	F Distribution - Public	VANDALISM OR THEFT	1070	7	314	11	237	6	167	6	3219	13
South OR	F Distribution - Public	VEHICLE ACCIDENT	12451	85	9454	77	7823	69	5921	49	13614	77
South OR	G Distribution - Vegetation	TREE - NON-PREVENTABLE	19651	327	36093	525	22241	403	42857	502	19215	284
South OR	G Distribution - Vegetation	TREE - TRIMMABLE	7	5	54	3	8	6	182	5	1041	7
South OR	H Distribution - Weather	CONDENSATION / MOISTURE	1	1								
South OR	H Distribution - Weather	ICE										
South OR	H Distribution - Weather	SNOW, SLEET AND BLIZZARD	389	24	5023	79	313	27	790	36	720	15
South OR	H Distribution - Weather	WIND	2359	48	4163	69	1483	58	2286	28	1324	25
South OR	I Distribution - Wildlife	ANIMALS	3604	205	4476	189	861	106	1161	140	2462	188
South OR	I Distribution - Wildlife	BIRD MORTALITY (NON-PROTECTED)	3117	90	2650	91	3163	92	5073	58	5483	82
South OR	I Distribution - Wildlife	BIRD MORTALITY (PROTECTED SPEC)	1571	31	473	17	442	20	2172	28	125	23
South OR	I Distribution - Wildlife	BIRD NEST (BMTS)	788	15	1561	10	188	10	421	12	1864	7
South OR	I Distribution - Wildlife	BIRD SUSPECTED, NO MORTALITY	390	15	1626	45	1341	49	500	22	383	33
South OR	J Distribution - Unknown	UNKNOWN	20651	506	21082	586	21928	460	24416	412	19334	482
South OR	K Distribution - Other	CONTAMINATION							109	1		
South OR	K Distribution - Other	FAULTY INSTALL	24	7	25	8	30	10	6	5	271	5
South OR	K Distribution - Other	FIRE/SMOKE (NOT DUE TO FAULTS)	2	2	36	5	568	3	4	4	8	5
South OR	K Distribution - Other	FLOODING	2	1	1	1						
South OR	K Distribution - Other	IMPROPER PROTECTIVE COORDINATION	129	9	31	5	40	4	7	4		
South OR	K Distribution - Other	INCORRECT RECORDS	88	10	5	5	49	7	51	10	269	9
South OR	K Distribution - Other	INTERNAL CONTRACTOR	0	0	527	2	103	1	45	2	103	3
South OR	K Distribution - Other	INTERNAL TREE CONTRACTOR			7	2					51	2
South OR	K Distribution - Other	OTHER, KNOWN CAUSE	305	29	3428	33	3306	47	3264	39	1382	20
South OR	K Distribution - Other	PACIFICORP EMPLOYEE - DISPATCH					0	0				
South OR	K Distribution - Other	PACIFICORP EMPLOYEE - FIELD	486	3	1037	4	5	5	2762	5	2	2
South OR	K Distribution - Other	PACIFICORP EMPLOYEE - SUB	0	0			2191	1			682	1
South OR	K Distribution - Other	TESTING/STARTUP ERROR	945	1							6	1
South OR	K Distribution - Other	UNSAFE SITUATION					4	1	28	1	2	1
MimVly	A Loss of Supply - Transmission	FAILURE ON OTHER LINE OR STATION									1	1
MimVly	A Loss of Supply - Transmission	LOSS OF FEED FROM SUPPLIER			5614	3						
MimVly	A Loss of Supply - Transmission	LOSS OF TRANSMISSION LINE	43245	28	65601	33	23741	12	16122	6	45347	27
MimVly	A Loss of Supply - Transmission	STRUCTURES, INSULATORS, CONDU	0	3	0	3	0	1	0	1	2	3
MimVly	A Loss of Supply - Transmission	SYSTEM PROTECTION	0	1								
MimVly	B Loss of Supply - Substation	LOSS OF SUBSTATION	245	2	0	0					4412	2
MimVly	C Distribution - Equipment	B/O EQUIPMENT	10714	366	16487	315	14437	308	21160	359	11270	322
MimVly	C Distribution - Equipment	DETERIORATION OR ROTTING	9826	417	16428	360	7006	365	6660	338	16694	353
MimVly	C Distribution - Equipment	NEARBY FAULT					202	5	53	15	11	4
MimVly	C Distribution - Equipment	OVERLOAD	350	6			30	2			2052	7

Oregon Cause Analysis by Region (excluding major events)

OR REGION	AFOR Cause	Direct Cause	2009			2010			2011			2012			2013		
			Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	Customers In Incident Sustained	Sustained Incident Count	
N/m/Vly	C Distribution - Equipment	POLE FIRE	36	1	1	1	19	1	367	7	3131	27					
N/m/Vly	D Distribution - Lightning	LIGHTNING	2899	60	662	15	203	39	1599	9	82	47					
N/m/Vly	E Distribution - Planned	CONSTRUCTION	235	43	110	15	524	7	185	63	2377	185					
N/m/Vly	E Distribution - Planned	CUSTOMER NOTICE GIVEN	2997	395	1831	253	5359	200	1139	143	197	81					
N/m/Vly	E Distribution - Planned	CUSTOMER REQUESTED	129	44	423	74	209	59	2756	43	27349	140					
N/m/Vly	E Distribution - Planned	EMERGENCY DAMAGE REPAIR	20356	137	11132	153	9592	156	19280	160	584	19					
N/m/Vly	E Distribution - Planned	INTENTIONAL TO CLEAR TROUBLE	4161	15	574	20	603	16	2460	19	1	1					
N/m/Vly	E Distribution - Planned	MAINTENANCE									3	1					
N/m/Vly	E Distribution - Planned	TRANSMISSION REQUESTED	10	4			5100	6									
N/m/Vly	F Distribution - Public	DIG-IN (NON-PACIFICORP PERSONNEL)	22	5	14	12	7	4	2	2	113	8					
N/m/Vly	F Distribution - Public	OTHER INTERFERING OBJECT	660	30	2520	37	1936	9	385	15	2149	18					
N/m/Vly	F Distribution - Public	OTHER UTILITY/CONTRACTOR	902	13	1734	15	5191	19	253	11	733	12					
N/m/Vly	F Distribution - Public	VANDALISM OR THEFT	5	5	3	3	2301	3	19	11	3	3					
N/m/Vly	F Distribution - Public	VEHICLE ACCIDENT	5777	74	15009	43	12726	38	14487	59	3351	45					
N/m/Vly	G Distribution - Vegetation	TREE - NON-PREVENTABLE	33147	352	25025	386	20502	250	36029	358	20950	243					
N/m/Vly	G Distribution - Vegetation	TREE - TRIMMABLE	26	4	965	9			35	4	841	20					
N/m/Vly	H Distribution - Weather	SNOW, SLEET AND BLIZZARD	40	19	9	1	25	1	850	38	0	0					
N/m/Vly	H Distribution - Weather	WIND	5947	38	391	20	2729	26	310	8	1533	21					
N/m/Vly	I Distribution - Wildlife	ANIMALS	1161	95	3925	102	4347	37	1040	59	890	59					
N/m/Vly	I Distribution - Wildlife	BIRD MORTALITY (NON-PROTECTED)	3440	99	1134	85	246	58	3440	93	847	59					
N/m/Vly	I Distribution - Wildlife	BIRD MORTALITY (PROTECTED SPECIES)	130	20	690	26	736	17	591	21	122	10					
N/m/Vly	I Distribution - Wildlife	BIRD NEST (BMTS)	91	9	9	2	25	9	13	7	1894	14					
N/m/Vly	I Distribution - Wildlife	BIRD SUSPECTED, NO MORTALITY	338	26	407	19	803	22	407	21	178	13					
N/m/Vly	J Distribution - Unknown	UNKNOWN	16699	332	16159	330	16953	287	16619	300	17681	273					
N/m/Vly	K Distribution - Other	CONTAMINATION			5	3	2	1	12	4							
N/m/Vly	K Distribution - Other	FAULTY INSTALL	2	2					1	1	16	5					
N/m/Vly	K Distribution - Other	FIRE/SMOKE (NOT DUE TO FAULTS)	2183	3	9	4	22	4	1	1	2	2					
N/m/Vly	K Distribution - Other	FLOODING					4	1	273	3							
N/m/Vly	K Distribution - Other	IMPROPER PROTECTIVE COORDINATION	9	2	91	1	97	4			320	2					
N/m/Vly	K Distribution - Other	INCORRECT RECORDS	289	5	121	4	34	2	54	2	12	3					
N/m/Vly	K Distribution - Other	INTERNAL CONTRACTOR	49	1			1	1	22	1	133	3					
N/m/Vly	K Distribution - Other	INTERNAL TREE CONTRACTOR					1	1									
N/m/Vly	K Distribution - Other	OTHER, KNOWN CAUSE	19	9	325	14	142	10	1507	11	1863	6					
N/m/Vly	K Distribution - Other	PACIFICORP EMPLOYEE - DISPATCH							0	0							
N/m/Vly	K Distribution - Other	PACIFICORP EMPLOYEE - FIELD	49	2							171	3					
N/m/Vly	K Distribution - Other	TESTING/STARTUP ERROR	2451	1			38	2			71	1					
N/m/Vly	K Distribution - Other	UNSAFE SITUATION	1	1			2	1									

## Oregon Circuits

Reliability Region	Op Area Name	Substation Name	Circuit Id	Circuit Name	Kv	Customer Count
Central OR	BEND/REDMOND	BEND	5D10	PORTLAND AVE	12.50	2,293
Central OR	BEND/REDMOND	BEND	5D11	GLEN VISTA	12.50	970
Central OR	BEND/REDMOND	BEND	5D12	DIVISION ST.	12.50	221
Central OR	BEND/REDMOND	BEND	5D196	MALLARD	12.50	1,483
Central OR	BEND/REDMOND	BEND	CO08-1	BEND-PILOT BUTTE-69KV	69.00	1
Central OR	BEND/REDMOND	BEND	CO09-1	BEND-PILOT BUTTE-69KV	69.00	1
Central OR	BEND/REDMOND	BOND STREET	5D411	BACHELOR	12.50	1,670
Central OR	BEND/REDMOND	BOND STREET	5D413	OLD MILL	12.50	354
Central OR	BEND/REDMOND	BOND STREET	5D418	BLAKELY	12.50	1,266
Central OR	BEND/REDMOND	CHINA HAT	5D140	LAVA (CHINA HAT)	12.50	2,306
Central OR	BEND/REDMOND	CHINA HAT	5D142	HIGH DESERT	12.50	1,581
Central OR	BEND/REDMOND	CHINA HAT	5D144	D.R.W.	12.50	2,411
Central OR	BEND/REDMOND	CLEVELAND AVE.	5D30	ARROWHEAD	12.50	885
Central OR	BEND/REDMOND	CLEVELAND AVE.	5D35	WICKIUP	12.50	962
Central OR	BEND/REDMOND	CLEVELAND AVE.	5D38	TOMAHAWK	12.50	1,400
Central OR	BEND/REDMOND	CLEVELAND AVE.	5D94	TEEPEE	12.50	2,896
Central OR	BEND/REDMOND	CLEVELAND AVE.	5D96	OBSIDIAN	12.50	784
Central OR	BEND/REDMOND	CLEVELAND AVE.	5D98	HUCKLEBERRY	12.50	1,315
Central OR	BEND/REDMOND	CLEVELAND AVE.	CO11	CLEVELAND-CHINA HAT-69KV	69.00	1
Central OR	BEND/REDMOND	COVE (OR)	CO20	COVE-ROUND BUTTE(PGE)#1-230KV	230.00	-
Central OR	BEND/REDMOND	COVE (OR)	CO21	COVE-ROUND BUTTE(PGE)#2-230KV	230.00	-
Central OR	BEND/REDMOND	CROOKED RIVER RANCH	4D131	CANYON	20.80	1,740
Central OR	BEND/REDMOND	CROOKED RIVER RANCH	4D30	CROOKED R.R.	20.80	762
Central OR	BEND/REDMOND	DESCHUTES	5D184	PRONGHORN	12.50	1,115
Central OR	BEND/REDMOND	DESCHUTES	5D2	DESCHUTES S	12.50	961
Central OR	BEND/REDMOND	HUNTERS CIRCLE	5D192	Mackinaw	12.50	613
Central OR	BEND/REDMOND	MIDPOINT	CO01-1	MIDPOINT-HEMMINGWAY-500KV	500.00	-
Central OR	BEND/REDMOND	OVERPASS	5D104	AWBREY	12.50	674
Central OR	BEND/REDMOND	OVERPASS	5D106	NEZ PERCE	12.50	2,625
Central OR	BEND/REDMOND	OVERPASS	5D120	CHINOOK	12.50	1,301
Central OR	BEND/REDMOND	OVERPASS	5D128	PAUTE	12.50	1,737

# Oregon Circuits

Central OR	BEND/REDMOND	OVERPASS	5D155	APACHE	12.50	1,801
Central OR	BEND/REDMOND	PILOT BUTTE	5D261	KLONDIKE	12.50	2,844
Central OR	BEND/REDMOND	PILOT BUTTE	5D263	DRAKE FEEDER	12.50	2,095
Central OR	BEND/REDMOND	PILOT BUTTE	CO09	BEND-PILOT BUTTE-TAP TO REDMOND-	69.00	3
Central OR	BEND/REDMOND	PILOT BUTTE	CO16	PILOT BUTTE-CLEVELAND-69KV	69.00	2
Central OR	BEND/REDMOND	PILOT BUTTE	CO17	PILOT BUTTE - CEC 69KV	69.00	2
Central OR	BEND/REDMOND	PILOT BUTTE	CO-1-BPA	PONDEROSA(BPA)-PILOT BUTTE-230KV	230.00	1
Central OR	BEND/REDMOND	PILOT BUTTE	CO-2-BPA	REDMOND(BPA)-PILOT BUTTE-230KV	230.00	1
Central OR	BEND/REDMOND	PILOT BUTTE	CO-3-BPA	LAPINE(BPA)-PILOT BUTTE-230KV	230.00	1
Central OR	BEND/REDMOND	REDMOND	5D21	SOUTH (REDMOND)	12.50	717
Central OR	BEND/REDMOND	REDMOND	5D22	INDUSTRIAL	12.50	1,449
Central OR	BEND/REDMOND	REDMOND	5D223	TETHEROW	12.50	818
Central OR	BEND/REDMOND	REDMOND	5D226	CLINE FALLS	12.50	1,454
Central OR	BEND/REDMOND	REDMOND	5D227	WINDSOR	12.50	2,677
Central OR	BEND/REDMOND	REDMOND	5D228	CITY	12.50	1,334
Central OR	BEND/REDMOND	REDMOND	5D229	JUNIPER	12.50	416
Central OR	BEND/REDMOND	REDMOND	CO006	REDMOND-COVE-69KV	69.00	2
Central OR	BEND/REDMOND	REDMOND	CO03-1	REDMOND(BPA)-HOUSTON LAKE-115KV	115.00	-
Central OR	BEND/REDMOND	REDMOND	CO06A	TAP TO CROOKED RIVER-69KV	69.00	1
Central OR	BEND/REDMOND	REDMOND	CO06B	TAP TO OPAL SPRINGS-69KV	69.00	8
Central OR	BEND/REDMOND	REDMOND	CO07	REMOND-REDMOND BPA-69KV	69.00	-
Central OR	BEND/REDMOND	REDMOND BPA	CO02	REDMOND BPA-REDMOND-115KV	115.00	-
Central OR	BEND/REDMOND	SHEVLIN PARK	5D238	WOLVERINE (SHP) (WAS 5D327)	12.50	2,746
Central OR	BEND/REDMOND	SHEVLIN PARK	5D241	BADGER (SHP)	12.50	2,910
Central OR	BEND/REDMOND	SHEVLIN PARK	5D243	Black Bear	12.50	537
Central OR	BEND/REDMOND	SUMMER LAKE (BPA)	CO01-1A	SUMMER LAKE (BPA)-HEMMINGWAY-500	500.00	1
Central OR	BEND/REDMOND	YEW AVENUE	5D322	BIRDIE	12.50	1,437
Central OR	BEND/REDMOND	YEW AVENUE	5D323	FAIRWAY	12.50	391
Central OR	BEND/REDMOND	YEW AVENUE	5D325	EAGLE	12.50	2,365
Central OR	BEND/REDMOND	YEW AVENUE	CO18	TAP TO YEW AVE-115KV	115.00	1
Central OR	MADRAS	CHERRY LANE	5D295	7 PEAKS	12.50	146
Central OR	MADRAS	COVE (OR)	CO005	COVE-WARM SPRINGS-69KV	69.00	1
Central OR	MADRAS	COVE (OR)	CO012	COVE-WARM SPRINGS-69KV	69.00	1
Central OR	MADRAS	CULVER	5D5	CULVER	12.50	1,774

## Oregon Circuits

Central OR	MADRAS	MADRAS	5D52	MADRAS RURAL	12.50	1,027
Central OR	MADRAS	MADRAS	5D53	AGATE	12.50	1,321
Central OR	MADRAS	MADRAS	5D57	QUARTZ	12.50	1,421
Central OR	MADRAS	MADRAS	5D61	MADRAS CITY	12.50	1,333
Central OR	MADRAS	MADRAS	CO14-1	PONDEROSA-HOUSTON LAKE#1-115KV	115.00	-
Central OR	MADRAS	MADRAS	CO19	PONDEROSA-HOUSTON LAKE#2-115KV	115.00	-
Central OR	MADRAS	MADRAS	5D1	POWELL BUTTE	12.50	606
Central OR	MADRAS	MADRAS	5D126	RIMROCK	12.50	2,240
Central OR	MADRAS	MADRAS	5D167	NORTHVILLE	12.50	1,260
Central OR	MADRAS	MADRAS	5D25	OCHOCO	12.50	989
Central OR	MADRAS	MADRAS	5D47	MC KAY (PRINEVILLE)	12.50	1,649
Central OR	MADRAS	MADRAS	5D48	LAMONTA	12.50	643
Central OR	MADRAS	MADRAS	5D50	PINE CONE	12.50	77
Central OR	MADRAS	MADRAS	5D69	GRIMES FLAT	12.50	1,597
Central OR	MADRAS	MADRAS	4D68	WARM SPRINGS (OR)	20.80	1,084
Central OR	MADRAS	MADRAS	CO05	MADRAS-WARM SPRINGS-69KV	69.00	-
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	CL01-2	ASTORIA-BPA ALLSTON 115KV	115.00	-
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	CL01-3	ASTORIA-TILLAMOOK-115KV	115.00	-
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	5A10	HAYSTACK	12.50	1,535
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	5A8	ECOLA	12.50	1,260
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	5A51	JOHN DAY	12.50	261
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	5A52	SCANDINAVIAN	12.50	105
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	5A92	SVENSEN	12.50	701
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	5A93	BRADWOOD	12.50	941
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	CL03	LEWIS & CLARK-CLATSOP-BPA-115KV	115.00	-
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	5A80	GROVE	12.50	2,363
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	5A81	CENTRAL	12.50	1,639
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	5A82	NECANICUM	12.50	1,194
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	5A83	GEARHART	12.50	3,107
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	5A15	CITY	12.50	1,808
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	5A16	MILL (WARRENTON)	12.50	523
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	5A20	SOUTH (WARRENTON)	12.50	1,523
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	5A202	PORT DOCK	12.50	1,230
CoastPlus	CLATSOP (ASTORIA)	CLATSOP (ASTORIA)	5A204	MOO COW	12.50	1,132



## Oregon Circuits

CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A205	FIFTH STREET	12.50	955
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A206	YOUNGS BAY #6	12.50	330
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A210	YOUNGS BAY #10	12.50	1,276
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A211	OLNEY	12.50	974
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A213	INDUSTRIAL	12.50	1,354
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	CL01-1	YOUNGS BAY-ASTORIA-115KV	115.00	-
CoastPlus	COOS BAY/COQUILLE	BANDON TIE (BPA)	L804	BANDON	20.80	736
CoastPlus	COOS BAY/COQUILLE	COOS RIVER	4C106	COOS RIVER	20.80	1,402
CoastPlus	COOS BAY/COQUILLE	COQUILLE	4C41	HENRY STREET	20.80	1,773
CoastPlus	COOS BAY/COQUILLE	COQUILLE	4C42	TERRES HGHTS	20.80	1,625
CoastPlus	COOS BAY/COQUILLE	COQUILLE	4C43	INDUSTRIAL	20.80	179
CoastPlus	COOS BAY/COQUILLE	COQUILLE	CB07	COQUILLE-MYRTLE POINT-115KV	115.00	-
CoastPlus	COOS BAY/COQUILLE	EMPIRE NEW	4C108	EMPIRE	20.80	1,747
CoastPlus	COOS BAY/COQUILLE	EMPIRE NEW	4C89	SCOTT	20.80	1,423
CoastPlus	COOS BAY/COQUILLE	EMPIRE NEW	4C90	CHARLESTON	20.80	2,186
CoastPlus	COOS BAY/COQUILLE	FAIRVIEW (BPA)	CB01	FAIRVIEW-ISTHMUS-230KV	230.00	-
CoastPlus	COOS BAY/COQUILLE	FAIRVIEW (BPA)	CB02	FAIRVIEW-LOCKHART-115KV	115.00	-
CoastPlus	COOS BAY/COQUILLE	FAIRVIEW (BPA)	CB02-1	FAIRVIEW-COQUILLE-115KV	115.00	1
CoastPlus	COOS BAY/COQUILLE	G P COQUILLE	L804X	BANDON	20.80	-
CoastPlus	COOS BAY/COQUILLE	ISTHMUS	CB06	ISTHMUS-LOCKHART-115KV	115.00	-
CoastPlus	COOS BAY/COQUILLE	JORDAN POINT	5C11	WEYCO#2	12.50	1
CoastPlus	COOS BAY/COQUILLE	JORDAN POINT	5C24	WEYCO #8	12.50	28
CoastPlus	COOS BAY/COQUILLE	JORDAN POINT	5C5	MENASHA	12.50	-
CoastPlus	COOS BAY/COQUILLE	JORDAN POINT	5C6	SAND DUNES (JORDAN POINT)	12.50	30
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	4C48	CITY CENTER	20.80	1,598
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	4C49	EASTSIDE	20.80	800
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	4C5	GEORGIA-PAC	20.80	103
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	4C50	BUNKERHILL	20.80	1,911
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	4C97	ENGLEWOOD	20.80	1,421
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	CB02-2	LOCKHART-COQUILLE-115KV	115.00	1
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	CB03	LOCKHART-STATE STREET-115KV	115.00	-
CoastPlus	COOS BAY/COQUILLE	MYRTLE POINT	4C36	NORTH (MYRTLE POINT)	20.80	362
CoastPlus	COOS BAY/COQUILLE	MYRTLE POINT	4C37	MAPLE STREET	20.80	2,204
CoastPlus	COOS BAY/COQUILLE	SOUTH DUNES	5C9	DOUGLAS CHIP	12.50	2

## Oregon Circuits

CoastPlus	COOS BAY/COQUILLE	STATE STREET	4C112	WOODLAND	20.80	1,874
CoastPlus	COOS BAY/COQUILLE	STATE STREET	4C66	BAYSHORE	20.80	1,728
CoastPlus	COOS BAY/COQUILLE	STATE STREET	4C67	INDUSTRIAL	20.80	2,280
CoastPlus	COOS BAY/COQUILLE	STATE STREET	4C86	BANGOR	20.80	1,783
CoastPlus	COOS BAY/COQUILLE	STATE STREET	CB05	STATE STREET-JORDAN POINT-115KV	115.00	-
CoastPlus	HOOD RIVER	DEE	3K15	US PLYWOOD (HOOD RIVER)	69.00	1
CoastPlus	HOOD RIVER	GORDON HOLLOW	4K1	SHERMAN 208	20.80	448
CoastPlus	HOOD RIVER	GRASS VALLEY	6K1	KENT	7.20	64
CoastPlus	HOOD RIVER	GRASS VALLEY	8K4	GRASS VALLEY CITY	2.40	100
CoastPlus	HOOD RIVER	HOOD RIVER	5K29	MOSIER FDR	12.50	-
CoastPlus	HOOD RIVER	HOOD RIVER	5K37	RESIDENTIAL	12.50	2,014
CoastPlus	HOOD RIVER	HOOD RIVER	5K43	BELMONT	12.50	1,109
CoastPlus	HOOD RIVER	HOOD RIVER	5K44	NORTH (HOOD RIVER)	12.50	1,753
CoastPlus	HOOD RIVER	HOOD RIVER	5K70	EASTSIDE	7.20	1,036
CoastPlus	HOOD RIVER	HOOD RIVER	5K74	SOUTH (HOOD RIVER)	12.50	1,619
CoastPlus	HOOD RIVER	HOOD RIVER	6K336	WEST SIDE	7.20	2
CoastPlus	HOOD RIVER	KENWOOD	5K50	OAKGROVE	12.50	721
CoastPlus	HOOD RIVER	MORO	8K6	MORO	2.40	118
CoastPlus	HOOD RIVER	POWERDALE JUNCTION SWITCH	HR03-1	POWERDALE JUNCTION-BALD MOUNTA	69.00	1
CoastPlus	HOOD RIVER	TUCKER	HR01	TUCKER-POWERDALE-69KV	69.00	3
CoastPlus	HOOD RIVER	TUCKER	HR04	TUCKER-POWERDALE-69KV	69.00	2
CoastPlus	HOOD RIVER	WASCO	7K1	WASCO	4.10	277
CoastPlus	LINCOLN CITY	BOYER	LC01	BOYER-DEVILS LAKE #1-115KV	115.00	-
CoastPlus	LINCOLN CITY	BOYER	LC01-A	BOYER-GRAND RONDE(PGE)-115KV	115.00	1
CoastPlus	LINCOLN CITY	BOYER	LC02	BOYER-DEVILS LAKE #2-115KV	115.00	-
CoastPlus	LINCOLN CITY	DEVILS LAKE	4A310	INLAND FEEDER	20.80	1,850
CoastPlus	LINCOLN CITY	DEVILS LAKE	4A312	OCEAN	20.80	2,897
CoastPlus	LINCOLN CITY	DEVILS LAKE	4A316	LAKE (DEVILS LAKE)	20.80	4,475
CoastPlus	LINCOLN CITY	DEVILS LAKE	4A338	SIUSLAW	20.80	660
CoastPlus	LINCOLN CITY	GLENEDEN	7A364	GLENEDEN	4.10	714
CoastPlus	LINCOLN CITY	GLENEDEN	7A366	SALISHAN	4.10	359
CoastPlus	LINCOLN CITY	NELSCOTT	7A390	NELSCOTT	4.10	358
CoastPlus	LINCOLN CITY	PGE GRAND RONDE	R114	BOYER	12.00	-
CoastPlus	LINCOLN CITY	WECOMA BEACH	7A354	WECOMA	4.10	719

# Oregon Circuits

CoastPlus	PORTLAND	ALBINA	5P111	ALBINA 11C01-UG	11.70	331
CoastPlus	PORTLAND	ALBINA	5P150	ALBINA 11C15	11.70	165
CoastPlus	PORTLAND	ALBINA	5P194	11C24-UG	11.70	25
CoastPlus	PORTLAND	ALBINA	5P196	11C16-UG	11.70	467
CoastPlus	PORTLAND	ALBINA	5P200	11C20-UG	11.70	423
CoastPlus	PORTLAND	ALBINA	5P66	11C25	11.70	55
CoastPlus	PORTLAND	ALBINA	5P91	11C11-UG	11.70	345
CoastPlus	PORTLAND	ALBINA	5P92	11C12-UG	11.70	348
CoastPlus	PORTLAND	ALBINA	P12	ALBINA-KNOTT-HOLLADAY-115KV	115.00	-
CoastPlus	PORTLAND	ALBINA	P12-1	ALBINA-RIVERGATE-115KV	115.00	2
CoastPlus	PORTLAND	ALDERWOOD 115/12.5	5P22	ALDERWOOD #2	12.50	202
CoastPlus	PORTLAND	ALDERWOOD 115/12.5	5P23	ALDERWOOD #1-UG	12.50	-
CoastPlus	PORTLAND	ALDERWOOD 115/12.5	5P33	ALDERWOOD #4	12.50	186
CoastPlus	PORTLAND	ALDERWOOD 115/12.5	5P604	ALDERWOOD #3	12.50	182
CoastPlus	PORTLAND	BLOSS	5P170	OFFICE	12.50	-
CoastPlus	PORTLAND	BLOSS	5P172	FURNACE	12.50	1
CoastPlus	PORTLAND	BPA ST JOHNS	P10-2	BPA ST JOHNS-ST JOHNS-115KV	115.00	-
CoastPlus	PORTLAND	BPA ST JOHNS	P11	ST JOHNS-KNOTT-115KV	115.00	-
CoastPlus	PORTLAND	COLUMBIA (OR)	5P266	#2	12.50	2,635
CoastPlus	PORTLAND	COLUMBIA (OR)	5P268	COLUMBIA #1	12.50	331
CoastPlus	PORTLAND	COLUMBIA (OR)	5P474	COLUMBIA #6	12.50	568
CoastPlus	PORTLAND	COLUMBIA (OR)	5P476	COLUMBIA #3	12.50	859
CoastPlus	PORTLAND	COLUMBIA (OR)	5P478	COLUMBIA #4	12.50	841
CoastPlus	PORTLAND	COLUMBIA (OR)	5P480	COLUMBIA #5	12.50	21
CoastPlus	PORTLAND	COLUMBIA (OR)	P23	COLUMBIA-KNOTT-57KV (OR)	57.00	-
CoastPlus	PORTLAND	COLUMBIA (OR)	P25	COLUMBIA-PARK ROSE-57KV	57.00	-
CoastPlus	PORTLAND	CULLY	5P288	CULLY #3-UG	12.50	805
CoastPlus	PORTLAND	CULLY	5P290	CULLY #2	12.50	2,379
CoastPlus	PORTLAND	CULLY	5P292	CULLY #1	12.50	2,922
CoastPlus	PORTLAND	HARRISON	P17	HARRISON-PGE EASTPORT-115KV	115.00	1
CoastPlus	PORTLAND	HARRISON	P18	HARRISON-LINCOLN-115KV	115.00	-
CoastPlus	PORTLAND	HOLLADAY (OR)	5P145	HOLLADAY #1-UG	11.70	7
CoastPlus	PORTLAND	HOLLADAY (OR)	5P146	HOLLADAY #2-UG	11.70	1
CoastPlus	PORTLAND	HOLLADAY (OR)	5P147	HOLLADAY #3-UG	11.70	26

# Oregon Circuits

CoastPlus	PORTLAND	HOLLADAY (OR)	5P156	HOLLADAY #4-UG	11.70	196
CoastPlus	PORTLAND	HOLLADAY (OR)	5P157	HOLLADAY #5-UG	11.70	320
CoastPlus	PORTLAND	HOLLADAY (OR)	5P158	HOLLADAY #6	11.70	837
CoastPlus	PORTLAND	HOLLADAY (OR)	P13	HOLLADAY-HARRISON-115KV	115.00	-
CoastPlus	PORTLAND	HOLLYWOOD	5P203	HOLLYWOOD #3	12.50	1,318
CoastPlus	PORTLAND	HOLLYWOOD	5P204	HOLLYWOOD #2	12.50	1,669
CoastPlus	PORTLAND	HOLLYWOOD	5P205	HOLLYWOOD #1	12.50	2,125
CoastPlus	PORTLAND	HOLLYWOOD	5P208	HOLLYWOOD #5	12.50	1,699
CoastPlus	PORTLAND	HOLLYWOOD	5P209	HOLLYWOOD #4	12.50	2,354
CoastPlus	PORTLAND	KILLINGSWORTH	5P123	KILLINGSWORTH #3	12.50	379
CoastPlus	PORTLAND	KILLINGSWORTH	5P217	KILLINGSWORTH #5	12.50	455
CoastPlus	PORTLAND	KILLINGSWORTH	5P41	KILLINGSWORTH #4	12.50	2,741
CoastPlus	PORTLAND	KILLINGSWORTH	5P88	KILLINGSWORTH #1-UG	12.50	16
CoastPlus	PORTLAND	KILLINGSWORTH	5P89	KILLINGSWORTH #2	12.50	3,099
CoastPlus	PORTLAND	KNOTT	5P231	KNOTT #1	12.50	2,575
CoastPlus	PORTLAND	KNOTT	5P232	KNOTT #2	12.50	1,185
CoastPlus	PORTLAND	KNOTT	5P233	KNOTT #3	12.50	2,291
CoastPlus	PORTLAND	KNOTT	5P366	11010	11.70	7
CoastPlus	PORTLAND	KNOTT	5P372	11046	11.70	418
CoastPlus	PORTLAND	KNOTT	5P374	11020	11.70	1,023
CoastPlus	PORTLAND	KNOTT	P26	KNOTT-PARKROSE-57KV	57.00	7
CoastPlus	PORTLAND	LINCOLN (OR)	5P418	11D17	11.70	54
CoastPlus	PORTLAND	LINCOLN (OR)	5P420	11D14	11.70	18
CoastPlus	PORTLAND	LINCOLN (OR)	5P422	11D06-UG	11.70	553
CoastPlus	PORTLAND	LINCOLN (OR)	5P424	11D03-UG	11.70	1
CoastPlus	PORTLAND	LINCOLN (OR)	5P426	11D04-UG	11.70	334
CoastPlus	PORTLAND	LINCOLN (OR)	5P430	11D05-UG	11.70	366
CoastPlus	PORTLAND	LINCOLN (OR)	5P432	11D02-UG	11.70	474
CoastPlus	PORTLAND	LINCOLN (OR)	5P434	11D12-UG	11.70	17
CoastPlus	PORTLAND	LINCOLN (OR)	5P436	11G18-UG	11.70	108
CoastPlus	PORTLAND	LINCOLN (OR)	5P438	11D08-UG	11.70	18
CoastPlus	PORTLAND	LINCOLN (OR)	5P456	11D09-UG	11.70	183
CoastPlus	PORTLAND	LINCOLN (OR)	5P458	11D07-UG	11.70	216
CoastPlus	PORTLAND	LINCOLN (OR)	5P460	11D01-UG	11.70	-

## Oregon Circuits

CoastPlus	PORTLAND	LINCOLN (OR)	5P462	11G13-UG	11.70	34
CoastPlus	PORTLAND	LINCOLN (OR)	5P464	11G16-UG	11.60	58
CoastPlus	PORTLAND	LINCOLN (OR)	P16	LINCOLN-URBAN-115KV	115.00	-
CoastPlus	PORTLAND	MALLORY	5P162	MALLORY #1	12.80	1,928
CoastPlus	PORTLAND	MALLORY	5P164	MALLORY #2	12.80	3,141
CoastPlus	PORTLAND	MERWIN	P08	MERWIN-BPA CARDWELL-115KV	115.00	-
CoastPlus	PORTLAND	MERWIN	P09	MERWIN-YALE-115KV	115.00	-
CoastPlus	PORTLAND	MERWIN	P10-1	MERWIN-ST JOHNS-115KV	115.00	-
CoastPlus	PORTLAND	MERWIN	P-GEN1	MERWIN #1-MERWIN-115KV	115.00	-
CoastPlus	PORTLAND	MERWIN	P-GEN2	MERWIN #2-MERWIN-115KV	115.00	-
CoastPlus	PORTLAND	MERWIN	P-GEN3	MERWIN #3-MERWIN-115KV	115.00	-
CoastPlus	PORTLAND	PARKROSE	5P244	PARKROSE#4	12.50	3,112
CoastPlus	PORTLAND	PARKROSE	5P246	PARKROSE#3	12.50	3,094
CoastPlus	PORTLAND	PARKROSE	5P250	PARKROSE#2	12.50	677
CoastPlus	PORTLAND	PARKROSE	5P252	PARKROSE#1	12.50	1,817
CoastPlus	PORTLAND	RUSSELLVILLE	5P274	RUSSELLVILLE #3	12.50	3,038
CoastPlus	PORTLAND	RUSSELLVILLE	5P276	RUSSELLVILLE #4	12.50	2,125
CoastPlus	PORTLAND	RUSSELLVILLE	5P278	RUSSELLVILLE #1	12.50	3,244
CoastPlus	PORTLAND	RUSSELLVILLE	5P280	RUSSELLVILLE #2	12.50	1,305
CoastPlus	PORTLAND	SWIFT	P-GEN4	SWIFT UNIT #1-SWIFT-230KV	230.00	-
CoastPlus	PORTLAND	SWIFT	P-GEN5	SWIFT UNIT #2-SWIFT-230KV	230.00	-
CoastPlus	PORTLAND	SWIFT	P-GEN6	SWIFT UNIT #3-SWIFT-230KV	230.00	-
CoastPlus	PORTLAND	TROUTDALE	P14	TROUTDALE-KNOTT-115KV	115.00	-
CoastPlus	PORTLAND	TROUTDALE	P19	TROUTDALE-ALBINA-69KV	69.00	-
CoastPlus	PORTLAND	TROUTDALE	P22-1	TROUTDALE-LADY-SUB #8-69KV	69.00	-
CoastPlus	PORTLAND	TROUTDALE	P22-2	TROUTDALE-JAMES RIV WEST-69KV	69.00	1
CoastPlus	PORTLAND	TROUTDALE	P22-3	TROUTDALE-JAMES RIV EAST-69KV	69.00	-
CoastPlus	PORTLAND	TROUTDALE	P34	TROUTDALE-CPU RUNYAN-115KV	115.00	-
CoastPlus	PORTLAND	TROUTDALE TIE (BPA)	P03	BPA TROUTDALE-PGE GRESHAM-230KV	230.00	-
CoastPlus	PORTLAND	TROUTDALE TIE (BPA)	P04	BPA TROUTDALE-PGE LINNEAMAN-230KV	230.00	-
CoastPlus	PORTLAND	VERNON	5P391	VERNON #1	12.50	1,834
CoastPlus	PORTLAND	VERNON	5P392	VERNON NO. 2	12.50	2,491
CoastPlus	PORTLAND	VERNON	5P393	VERNON #3	12.50	3,073
CoastPlus	PORTLAND	VERNON	5P394	VERNON # 4	12.50	3,176

## Oregon Circuits

CoastPlus	PORTLAND	VERNON	5P395	VERNON # 5	12.50	2,161
CoastPlus	PORTLAND	YALE	5P53	YALE VILLAGE	12.50	-
Northeast OR	ENTERPRISE	ENTERPRISE (OR)	4W8	CREIGHTON LN	20.80	1,452
Northeast OR	ENTERPRISE	ENTERPRISE (OR)	5W15	CITY	12.50	963
Northeast OR	ENTERPRISE	ENTERPRISE (OR)	5W26	RURAL (ENTERPRISE)	12.50	1,074
Northeast OR	ENTERPRISE	ENTERPRISE (OR)	WW07	ENTERPRISE-ELGIN-69KV	69.00	-
Northeast OR	ENTERPRISE	HURRICANE (OR)	WW08	HURRICANE-ENTERPRISE-69KV	69.00	-
Northeast OR	ENTERPRISE	JOSEPH	5W21	PRAIRIE	12.50	874
Northeast OR	ENTERPRISE	MINAM	5W18	MINAM	12.50	13
Northeast OR	ENTERPRISE	PALLETTE	4W14	PALLETTE NORTH	19.90	177
Northeast OR	ENTERPRISE	PALLETTE	4W15	PALLETTE SOUTH	19.90	55
Northeast OR	ENTERPRISE	WALLOWA	5W28	CITY	12.50	873
Northeast OR	HERMISTON	ARLINGTON	5K25	ARLINGTON	12.50	553
Northeast OR	HERMISTON	BLALOCK	5K40	BLALOCK	12.50	26
Northeast OR	HERMISTON	COLD SPRINGS	WW16	COLD SPRINGS-HERMISTON-69KV	69.00	1
Northeast OR	HERMISTON	CREEK	4K30	WILLOW CREEK	34.50	-
Northeast OR	HERMISTON	CREEK	WW13	WILLOW CREEK-BPA DEMOSS-69KV	69.00	-
Northeast OR	HERMISTON	DALREED	4K40	SIM/TAG	34.50	92
Northeast OR	HERMISTON	DALREED	4K46	BOEING	34.50	170
Northeast OR	HERMISTON	HERMISTON	5W602	RURAL (HERMISTON)	12.50	1,391
Northeast OR	HERMISTON	HERMISTON	WW14-1	HERMISTON-HINKLE-69KV	69.00	-
Northeast OR	HERMISTON	HINKLE	5W82	MEADOWS	12.50	380
Northeast OR	HERMISTON	MCNARY (BPA)	WW15	BPA MCNARY-HERMISTON-69KV	69.00	6
Northeast OR	HERMISTON	UMATILLA	5W658	UMATILLA	12.50	1,184
Northeast OR	HERMISTON	UMATILLA	5W660	MCNARY	12.50	916
Northeast OR	HERMISTON	UMATILLA	5W664	PORT FEEDER	12.50	49
Northeast OR	MILTON/FREEWATER	UMAPINE	5W105	UMAPINE FEEDER	12.50	999
Northeast OR	PENDLETON	ATHENA	5W703	CITY	12.50	864
Northeast OR	PENDLETON	ATHENA	5W705	HELIX	12.50	436
Northeast OR	PENDLETON	BUCKAROO	5W201	STATE HOSP.	12.50	412
Northeast OR	PENDLETON	BUCKAROO	5W202	REITH	12.50	1,535
Northeast OR	PENDLETON	BUCKAROO	5W203	MONTEE	12.50	1,648
Northeast OR	PENDLETON	HERMISTON	WW14	HERMISTON-PENDLETON-69KV	69.00	-
Northeast OR	PENDLETON	PENDLETON	5W401	WEST HILLS	12.50	1,756

## Oregon Circuits

Northeast OR	PENDLETON	PENDLETON	5W402	HARRIS HTS	12.50	2,114
Northeast OR	PENDLETON	PENDLETON	5W403	MISSION	12.50	1,073
Northeast OR	PENDLETON	PENDLETON	7W451	BUSINESS	4.10	261
Northeast OR	PENDLETON	PENDLETON	7W452	NORTHWEST	4.10	525
Northeast OR	PENDLETON	PENDLETON	7W453	SOUTHWEST (PENDELTON)	4.10	337
Northeast OR	PENDLETON	PENDLETON	7W454	EAST END	4.10	300
Northeast OR	PENDLETON	PENDLETON	WW10	PENDLETON-BPA ROUNDUP-69KV	69.00	-
Northeast OR	PENDLETON	PENDLETON	WW12	PENDLETON-BPA ROUNDUP-69KV	69.00	-
Northeast OR	PENDLETON	PILOT ROCK	5W404	MILL (PILOT ROCK)	12.50	3
Northeast OR	PENDLETON	PILOT ROCK	5W406	PILOT ROCK CITY	12.50	1,408
Northeast OR	PENDLETON	ROUNDUP (BPA)	WW11	BPA ROUNDUP-PILOT ROCK-69KV	69.00	-
Northeast OR	PENDLETON	WESTON NEW (OR)	5W40	WESTON CANNERY	12.50	14
Northeast OR	PENDLETON	WESTON NEW (OR)	5W7	SCOTT'S FEEDER	12.50	465
Northeast OR	WALLA WALLA	UMAPINE	5W106	FERNDALE	12.50	1,360
South OR	GRANTS PASS	AGNESS AVE	5R172	SPALDING MILL	12.50	889
South OR	GRANTS PASS	AGNESS AVE	5R173	JONES CREEK	12.50	876
South OR	GRANTS PASS	AGNESS AVE	5R322	ANTEATER	12.50	971
South OR	GRANTS PASS	APPLEGATE	5R267	MURPHY	12.50	1,022
South OR	GRANTS PASS	APPLEGATE	5R278	HIGHWAY	12.50	1,625
South OR	GRANTS PASS	APPLEGATE	R23-2	APPLEGATE-HUMBUG CREEK-69KV	69.00	1
South OR	GRANTS PASS	APPLEGATE	R23-21	APPLEGATE-PROVOLT-69KV	69.00	1
South OR	GRANTS PASS	APPLEGATE	R23-22	PROVOLT-HUMBUG CREEK-69KV	69.00	1
South OR	GRANTS PASS	APPLEGATE	R23-A	TAP TO PROVOLT-69KV	69.00	-
South OR	GRANTS PASS	BEACON	5R104	SAVAGE ST	12.50	1,247
South OR	GRANTS PASS	BEACON	5R105	BEACON ST	12.50	831
South OR	GRANTS PASS	CAVE JUNCTION	5R52	FREE& EASY	12.50	2,435
South OR	GRANTS PASS	CAVE JUNCTION	5R53	ROUGH & READY	12.50	1,585
South OR	GRANTS PASS	CAVE JUNCTION	R02-2	CAVE JCTN-DEL NORTE-115KV	115.00	-
South OR	GRANTS PASS	CAVE JUNCTION	R04	CAVE JCTN-DEL NORTE-115KV	115.00	-
South OR	GRANTS PASS	CAVE JUNCTION	S15	CAVE JCTN-HAPPY CAMP-69KV	69.00	-
South OR	GRANTS PASS	CAVEMAN	5R295	QUAIL	12.50	1,150
South OR	GRANTS PASS	CAVEMAN	5R82	WASHINGTON	12.50	1,204
South OR	GRANTS PASS	CAVEMAN	5R98	MANZANITA	12.50	595
South OR	GRANTS PASS	CAVEMAN	5R99	CAVEMAN	12.50	1,177

## Oregon Circuits

South OR	GRANTS PASS	DOWELL	5R331	DOVE	12.50	1,489
South OR	GRANTS PASS	DOWELL	5R334	DUCK	12.50	2,363
South OR	GRANTS PASS	EASY VALLEY	5R123	G STREET	12.50	2,007
South OR	GRANTS PASS	EASY VALLEY	5R125	ROGUE	12.50	1,702
South OR	GRANTS PASS	EASY VALLEY	5R259	CHINOOK	12.50	1,307
South OR	GRANTS PASS	FIELDER CREEK	4R33	ELK FDR.	20.80	1,627
South OR	GRANTS PASS	FIELDER CREEK	4R34	BEAR FDR	20.80	876
South OR	GRANTS PASS	GLENDALE SUBSTATION	5R133	GLENDALE	12.50	1,976
South OR	GRANTS PASS	GLENDALE SUBSTATION	5R143	INDUSTRIAL	12.50	695
South OR	GRANTS PASS	GRANTS PASS	R01-B	GRANTS PASS-WHITE CITY-115KV	115.00	-
South OR	GRANTS PASS	GRANTS PASS	R02-1	GRANTS PASS-APPLEGATE-115KV	115.00	-
South OR	GRANTS PASS	GRANTS PASS	R03	GRANTS PASS-CAVE JCTN-115KV	115.00	-
South OR	GRANTS PASS	GRANTS PASS	R05	GRANTS PASS-MERLIN-115KV	115.00	-
South OR	GRANTS PASS	GRANTS PASS	R07	GRANTS PASS-EASY VALLEY-115KV	115.00	-
South OR	GRANTS PASS	GRANTS PASS	R13-1	GRANTS PASS-ROGUE RIVER-69KV	69.00	-
South OR	GRANTS PASS	GRANTS PASS	R13-3	ROGUE RIVER-GOLD HILL-69KV	69.00	1
South OR	GRANTS PASS	GRANTS PASS	R24	GRANTS PASS-BEACON-69KV	69.00	-
South OR	GRANTS PASS	JEROME PRAIRIE	5R62	WILD PRAIRIE	12.50	1,640
South OR	GRANTS PASS	JEROME PRAIRIE	5R63	WOOD RIVER	12.50	1,606
South OR	GRANTS PASS	MERLIN	5R232	MERLIN-HUGO	12.50	2,078
South OR	GRANTS PASS	MERLIN	5R234	PARADISE	12.50	1,186
South OR	GRANTS PASS	MERLIN	5R248	PLEASANT VALLEY-MERLIN FEEDER	12.50	1,842
South OR	GRANTS PASS	MERLIN	5R251	BADGER	12.50	920
South OR	GRANTS PASS	NEW O'BRIEN	5R106	O'BRIEN	12.50	462
South OR	GRANTS PASS	PARK STREET (OR)	5R114	FRUITDALE	12.50	2,118
South OR	GRANTS PASS	PARK STREET (OR)	5R115	ALLEN CREEK	12.50	1,001
South OR	GRANTS PASS	PARK STREET (OR)	5R121	NEW HOPE	12.50	1,863
South OR	GRANTS PASS	PARK STREET (OR)	5R164	EXPRESS	12.50	320
South OR	GRANTS PASS	PARK STREET (OR)	5R169	PORTOLA	12.50	1,533
South OR	GRANTS PASS	PROVOLT	5R67	NORTH-SOUTH	12.50	1,399
South OR	GRANTS PASS	ROGUE RIVER	4R7	EVANS VALLEY	20.80	233
South OR	GRANTS PASS	ROGUE RIVER	5R77	SAVAGE/MIMER	12.50	1,798
South OR	GRANTS PASS	ROGUE RIVER	5R78	ROCKY POINT (ROGUE RIVER)	12.50	1,068
South OR	GRANTS PASS	SCENIC	R13-2	SCENIC-GOLD HILL-69KV	69.00	-



## Oregon Circuits

South OR	GRANTS PASS	SELMA	5R65	DEER CREEK	12.50	1,236
South OR	KLAMATH FALLS	BEATTY	5L1	BEATTY	12.50	427
South OR	KLAMATH FALLS	BLY	5L14	TOWN (BLY)	12.50	459
South OR	KLAMATH FALLS	BOISE CASCADE	7L9	BOISE CASCADE	4.10	1
South OR	KLAMATH FALLS	BONANZA (OR)	5L7	POE VALLEY	12.50	453
South OR	KLAMATH FALLS	BRYANT	5L2	GARY STREET	12.50	2,194
South OR	KLAMATH FALLS	BRYANT	5L3	WASHBURN	12.50	1,884
South OR	KLAMATH FALLS	BRYANT	5L4	SUMMERS LANE	12.50	2,046
South OR	KLAMATH FALLS	BRYANT	5L5	MOYINA HTS.	12.50	2,493
South OR	KLAMATH FALLS	CASEBEER SUB	4L16	LANGELL VLY	20.80	1,209
South OR	KLAMATH FALLS	CHILOQUIN	5L57	CRATER LAKE	12.00	1,110
South OR	KLAMATH FALLS	CHILOQUIN	BB04-1	KLAMATH FALLS-CHILOQUIN-230KV	230.00	-
South OR	KLAMATH FALLS	CHILOQUIN	BB04-2	CHILOQUIN-LA PINE-230KV	230.00	-
South OR	KLAMATH FALLS	CHILOQUIN	K02	CHILOQUIN-MILE HI-115KV	115.00	-
South OR	KLAMATH FALLS	CHILOQUIN	K11	CHILOQUIN-CHILOQUIN MARKET-69KV	69.00	-
South OR	KLAMATH FALLS	CHILOQUIN MARKET	5L37	WILLIAMSON	12.50	491
South OR	KLAMATH FALLS	DAIRY	5L42	SWAN LAKE	12.50	324
South OR	KLAMATH FALLS	DAIRY	5L43	DAIRY	12.50	492
South OR	KLAMATH FALLS	DORRIS	K10	DORRIS-TUNNEL-69KV	69.00	-
South OR	KLAMATH FALLS	FISHHOLE	K05-2	FISHHOLE-SPRAGUE RIVER-69KV	69.00	-
South OR	KLAMATH FALLS	HAMAKER	5L55	KENO	12.50	1,764
South OR	KLAMATH FALLS	HAMAKER	5L56	MOUNTAIN	12.50	167
South OR	KLAMATH FALLS	HENLEY	5L58	HENLEY	12.50	237
South OR	KLAMATH FALLS	HENLEY	5L59	WEST	12.50	554
South OR	KLAMATH FALLS	HORNET	5L44	HOMEDALE	12.50	2,711
South OR	KLAMATH FALLS	HORNET	5L45	CRYSTAL SPR	12.50	1,503
South OR	KLAMATH FALLS	JOHN C. BOYLE SUB	BB06-4	BOYLE-COPCO 2-230KV	230.00	-
South OR	KLAMATH FALLS	KLAMATH	BB06-1	BOYLE-KLAMATH FALLS-230KV	230.00	-
South OR	KLAMATH FALLS	KLAMATH	K05-1	KLAMATH FALLS-BONANZA-69KV	69.00	-
South OR	KLAMATH FALLS	KLAMATH	K07-1	KLAMATH FALLS-WESTSIDE-69KV	69.00	1
South OR	KLAMATH FALLS	KLAMATH	K08	KLAMATH FALLS-WEYERHAUSER-69KV	69.00	-
South OR	KLAMATH FALLS	KLAMATH	K12	COPCO 2-KLAMATH FALLS-69KV	69.00	1
South OR	KLAMATH FALLS	KLAMATH	K12-1	KLAMATH FALLS-WEYERHAUSER-69KV	69.00	-
South OR	KLAMATH FALLS	KLAMATH	K12F	COPCO 2-KLAMATH FALLS-TAP TO RUN	69.00	1

## Oregon Circuits

South OR	KLAMATH FALLS	KLAMATH	K13-1	KLAMATH FALLS-WESTSIDE-69KV	69.00	1
South OR	KLAMATH FALLS	KLAMATH COGEN 500KV SWIT	BB02-1	KLAMATH CO-GEN - CAPT JACK	500.00	-
South OR	KLAMATH FALLS	KLAMATH COGEN 500KV SWIT	BB02-2	KLAMATH COGEN-MERIDAN 500KV LINE	500.00	-
South OR	KLAMATH FALLS	LAKEPORT	5L49	WOCUS	12.50	214
South OR	KLAMATH FALLS	LAKEPORT	5L54	SOUTH (LAKEPORT)	12.50	2,475
South OR	KLAMATH FALLS	LAKEPORT	5L61	JELDWEN	12.50	8
South OR	KLAMATH FALLS	MALIN	BB01	MALIN-ROUND MOUNTAIN #2-525KV	500.00	-
South OR	KLAMATH FALLS	MALIN	BB05	KLAMATH FALLS-MALIN-230KV	230.00	-
South OR	KLAMATH FALLS	MALIN	BB14	CAPTAIN JACK-MALIN-500KV	500.00	-
South OR	KLAMATH FALLS	MALIN	BB17	MALIN-BPA WARNER-230KV	230.00	-
South OR	KLAMATH FALLS	MALIN	K09	MALIN-NEWELL-69KV	69.00	-
South OR	KLAMATH FALLS	MERRILL (OR)	5L26	LAKE (MERRILL)	12.50	1,032
South OR	KLAMATH FALLS	MERRILL (OR)	5L27	NORTH (MERRILL)	12.50	565
South OR	KLAMATH FALLS	MERRILL (OR)	K04-3	MERRILL-HORNET-69KV	69.00	1
South OR	KLAMATH FALLS	MERRILL (OR)	K04B	MERRILL JCT-TUNNEL TAP-69KV	69.00	1
South OR	KLAMATH FALLS	MILE-HI	K15	MILE HI-LAKEVIEW-69KV	69.00	-
South OR	KLAMATH FALLS	MODOC	5L36	MODOC	12.50	1,000
South OR	KLAMATH FALLS	ROSS AVENUE	5L46	ELDORADO	12.50	1,393
South OR	KLAMATH FALLS	ROSS AVENUE	5L47	FORT ROAD	12.50	-
South OR	KLAMATH FALLS	ROSS AVENUE	5L48	BROAD ST.	12.50	1,247
South OR	KLAMATH FALLS	RUNNING Y	4L50	ROCKY POINT FEEDER (RUNNING Y)	20.80	1,495
South OR	KLAMATH FALLS	SHASTA WAY	7L25	SHASTA WAY	4.10	441
South OR	KLAMATH FALLS	SPRAGUE RIVER	5L8	SPRAGUE RIVER	12.50	515
South OR	KLAMATH FALLS	SPRAGUE RIVER	K05-3	SPRAGUE RIVER-DAIRY-69KV	69.00	1
South OR	KLAMATH FALLS	SUMMER LAKE (BPA)	CO01-2	MALIN-SUMMER LAKE-500KV	500.00	-
South OR	KLAMATH FALLS	TEXUM	5L112	ANDERSON	12.50	1,241
South OR	KLAMATH FALLS	TEXUM	5L113	TOWER	12.50	333
South OR	KLAMATH FALLS	TEXUM	5L116	ALTAMONT	12.50	1,547
South OR	KLAMATH FALLS	TURKEY HILL	5L20	MALIN CITY	12.50	855
South OR	KLAMATH FALLS	TURKEY HILL	5L23	RURAL (TURKEY HILL)	12.50	333
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L12	ORINDALE	12.50	824
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L15	CALIFORNIA	12.50	1,401
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L16	MAIN ST (WEST SIDE HE PLANT)	12.50	118
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L17	PINE ST (WEST SIDE HE PLANT)	12.50	523

## Oregon Circuits

South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L18	RIVERSIDE (WEST SIDE HE PLANT)	12.50	609
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L19	LAKESHORE	12.50	304
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	8L10	CITY WTR PMP	2.40	1
South OR	KLAMATH FALLS	WEYERHAEUSER	WT1	WEYERHAEUSER	69.00	1
South OR	LAKEVIEW	MILE-HI	5L104	INDUSTRIAL	12.50	766
South OR	LAKEVIEW	MILE-HI	5L105	BUSINESS	12.50	1,774
South OR	LAKEVIEW	MILE-HI	K03	MILE HI-ALTURAS-115KV	115.00	16
South OR	MEDFORD	ASHLAND (MTN.AVE, PUD)	5R241	CITY	12.50	30
South OR	MEDFORD	ASHLAND (MTN.AVE, PUD)	5R245	VALLEY VIEW	12.50	998
South OR	MEDFORD	BEALL LANE	5R359	BEEHIVE	12.50	2
South OR	MEDFORD	BEALL LANE	5R361	BULLDOG	12.50	1,660
South OR	MEDFORD	BEALL LANE	5R364	BOBCAT	12.50	2,204
South OR	MEDFORD	BELKNAP	5R1	KOGAP	12.50	1,016
South OR	MEDFORD	BELKNAP	5R2	RIVERSIDE (BELKNAP)	12.50	680
South OR	MEDFORD	BELKNAP	5R3	BARNETT	12.50	1,562
South OR	MEDFORD	BELKNAP	5R47	STEWART	12.50	2,121
South OR	MEDFORD	BROOKHURST	5R118	SPRINGBROOK	12.50	1,681
South OR	MEDFORD	BROOKHURST	5R135	ROBERTS (BROOKHURST)	12.50	1,487
South OR	MEDFORD	BROOKHURST	5R32	ROXY	12.50	1,656
South OR	MEDFORD	BROOKHURST	5R33	CRATER LAKE	12.50	1,633
South OR	MEDFORD	BROOKHURST	5R75	SUNRISE (BROOKHURST)	12.50	1,184
South OR	MEDFORD	CAMPBELL	5R216	VOORHIES	12.50	614
South OR	MEDFORD	CAMPBELL	5R218	PHOENIX	12.50	1,550
South OR	MEDFORD	CAMPBELL	5R227	FERN VALLEY	12.50	1,312
South OR	MEDFORD	CAMPBELL	5R312	COBRA	12.50	1,529
South OR	MEDFORD	DODGE BRIDGE	4R1	SALMON	20.80	1,654
South OR	MEDFORD	DODGE BRIDGE	4R35	MEADOWS ROAD	20.80	1,372
South OR	MEDFORD	FOOTHILLS	5R252	HILLCREST ROAD	12.50	-
South OR	MEDFORD	FOOTHILLS	5R38	HOSPITAL	12.50	771
South OR	MEDFORD	FOOTHILLS	5R39	PIERCE ROAD	12.50	1,156
South OR	MEDFORD	FRALEY	5R87	TABLE ROCK	12.50	518
South OR	MEDFORD	FRALEY	5R88	DODGE BRIDGE	12.50	387
South OR	MEDFORD	GOLD HILL	5R103	GOLD HILL	12.50	2,039
South OR	MEDFORD	GRIFFIN CREEK	5R200	ARNOLD LANE	12.50	-

## Oregon Circuits

South OR	MEDFORD	GRIFFIN CREEK	5R204	HULL RD	12.50	2,580
South OR	MEDFORD	GRIFFIN CREEK	5R206	GRIFFIN CREEK	12.50	1,704
South OR	MEDFORD	HUMBUG CREEK	5R287	HUMMINGBIRD	12.50	682
South OR	MEDFORD	LONE PINE	R01-A	LONE PINE-SCENIC-115KV	115.00	-
South OR	MEDFORD	LONE PINE	R10	LONE PINE-SAGE ROAD-115KV	115.00	-
South OR	MEDFORD	LONE PINE	R11-1	LONE PINE-PROSPECT CENTRAL-115KV	115.00	-
South OR	MEDFORD	LONE PINE	R12	LONE PINE-PROSPECT CNTRL-69KV	69.00	-
South OR	MEDFORD	LONE PINE	R19	LONE PINE-TALENT-69KV	69.00	-
South OR	MEDFORD	LONE PINE	R25	LONE PINE-MEDFORD-69KV	69.00	-
South OR	MEDFORD	LONE PINE	R26	LONE PINE-SAGE ROAD-115KV	115.00	-
South OR	MEDFORD	LONE PINE	R27-1	LONE PINE-BALDY SW STA-115KV	115.00	1
South OR	MEDFORD	MEDCO	5R280	BOISE CASCADE	12.50	1
South OR	MEDFORD	MEDFORD	5R21	MELROSE	12.50	1,623
South OR	MEDFORD	MEDFORD	5R23	SPRING ST.	12.50	1,616
South OR	MEDFORD	MEDFORD	5R250	BIG Y	12.50	1,876
South OR	MEDFORD	MEDFORD	5R253	APPLE	12.50	1,130
South OR	MEDFORD	MEDFORD	5R257	PEAR	12.50	601
South OR	MEDFORD	MEDFORD	5R659	MCLEAN	12.50	691
South OR	MEDFORD	MEDFORD	R23	MEDFORD-APPLEGATE-69KV	69.00	-
South OR	MEDFORD	MEDFORD	R23-1	MEDFORD-HUMBUG CREEK-69KV	69.00	1
South OR	MEDFORD	MEDFORD	R23-11	MEDFORD-JACKSONVILLE-69KV	69.00	1
South OR	MEDFORD	MEDFORD	R23-12	JACKSONVILLE-HUMBUG CREEK-69KV	69.00	1
South OR	MEDFORD	MERIDIAN	BB07	LONE PINE #1-MERIDIAN-230KV	230.00	-
South OR	MEDFORD	MERIDIAN	BB13	MERIDIAN-GRANTS PASS-230KV	230.00	-
South OR	MEDFORD	MERIDIAN	BB16	LONE PINE #2-MERIDIAN-230KV	230.00	-
South OR	MEDFORD	NEW JACKSONVILLE SUB-DIST	5R284	STAGE RD	12.50	2,099
South OR	MEDFORD	NEW JACKSONVILLE SUB-DIST	5R285	JACKSONVILLE HWY	12.50	2,099
South OR	MEDFORD	OAK KNOLL	5R55	SISKIYOU	12.50	1,612
South OR	MEDFORD	OAK KNOLL	R08	TAP TO OAK KNOLL-115KV	115.00	1
South OR	MEDFORD	OAK KNOLL	R11-2A	BLADY SW STA-OAK KNOLL TAP-115KV	115.00	1
South OR	MEDFORD	OAK KNOLL	R11-2B	OAK KNOLL TAP-COPCO 2-115KV	115.00	1
South OR	MEDFORD	PROSPECT 3 HE PLANT	5R290	P-3 FOREBAY	12.50	1
South OR	MEDFORD	PROSPECT CENTRAL	5R40	NEW CASCADE	12.50	351
South OR	MEDFORD	PROSPECT CENTRAL	8R5	COTTAGES	2.40	5

## Oregon Circuits

South OR	MEDFORD	PROSPECT CENTRAL	8R8	DAM & FOREBAY	2.40	2
South OR	MEDFORD	PROSPECT CENTRAL	R14	PROSPECT CNTRL-PROSPECT #3-69KV	69.00	-
South OR	MEDFORD	PROSPECT CENTRAL	R15	PROSPECT-PROSPECT CNTRL #1-69KV	69.00	-
South OR	MEDFORD	PROSPECT CENTRAL	R16	PROSPECT-PROSPECT CNTRL #2-69KV	69.00	-
South OR	MEDFORD	PROSPECT CENTRAL	R17	PROSPECT-PROSPECT CNTRL #2-69KV	69.00	-
South OR	MEDFORD	RED BLANKET	7R5	PROSPECT	4.10	403
South OR	MEDFORD	ROXY ANN	5R350	St. Bernard	12.50	1,059
South OR	MEDFORD	ROXY ANN	5R354	RACCOON	12.50	1,335
South OR	MEDFORD	RUCH	5R68	APLEGATE	12.50	918
South OR	MEDFORD	RUCH	5R69	RUCH	12.50	555
South OR	MEDFORD	SAGE ROAD (OR)	5R209	TIMBER PROD	12.50	2
South OR	MEDFORD	SAGE ROAD (OR)	5R211	COLUMBUS	12.50	1,994
South OR	MEDFORD	SAGE ROAD (OR)	5R226	BOISE	12.50	856
South OR	MEDFORD	SAGE ROAD (OR)	5R27	MCANDREWS	12.50	120
South OR	MEDFORD	SAGE ROAD (OR)	5R28	ROSS	12.50	1,717
South OR	MEDFORD	SAGE ROAD (OR)	5R29	EDWARDS	12.50	766
South OR	MEDFORD	SAGE ROAD (OR)	R01-C	SAGE ROAD-SCENIC-115KV	115.00	-
South OR	MEDFORD	SAGE ROAD (OR)	R27-3	BALDY SW STA-SAGE ROAD-115KV	115.00	1
South OR	MEDFORD	SCENIC	5R174	UPTON	12.50	2,019
South OR	MEDFORD	SCENIC	5R180	HEAD RD	12.50	1,415
South OR	MEDFORD	SCENIC	5R182	TAYLOR RD	12.50	1,478
South OR	MEDFORD	SCENIC	5R184	CHENEY	12.50	1,454
South OR	MEDFORD	STEVENS ROAD	4R13	HENRY MILLER	20.80	1,368
South OR	MEDFORD	STEVENS ROAD	4R17	Stingray	20.80	2,483
South OR	MEDFORD	STEVENS ROAD	4R41	ANTELOPE	20.80	1,910
South OR	MEDFORD	TAKELMA	4R9	LOST CK. (TAKELMA)	20.80	2,651
South OR	MEDFORD	TALENT	5R237	TALENT	12.50	2,525
South OR	MEDFORD	TALENT	5R238	ANDERSON CRK	12.50	1,650
South OR	MEDFORD	TALENT	5R239	HARTLEY ROAD	12.50	1,540
South OR	MEDFORD	TALENT	5R240	NORTH HWY	12.50	1,079
South OR	MEDFORD	TOLO	5R90	TBL ROCK LBR	12.50	165
South OR	MEDFORD	TOLO	5R91	SAMS VALLEY	12.50	658
South OR	MEDFORD	TOLO	5R92	KIRTLAND RD	12.50	208
South OR	MEDFORD	VILAS ROAD	5R110	MCLAUGHLIN	12.50	966

## Oregon Circuits

South OR	MEDFORD	VILAS ROAD	5R146	KING CENTER	12.50	1,408
South OR	MEDFORD	VILAS ROAD	5R305	WEBFOOT	12.50	1,016
South OR	MEDFORD	WHITE CITY	5R11	EAGLE POINT	12.50	1,448
South OR	MEDFORD	WHITE CITY	5R12	INDUSTRIAL	12.50	33
South OR	MEDFORD	WHITE CITY	5R13	FIR-PLY	12.50	24
South OR	MEDFORD	WHITE CITY	5R14	AGATE	12.50	107
South OR	MEDFORD	WHITE CITY	5R19	3M	12.50	95
South OR	MEDFORD	WHITE CITY	5R66	4 CORNERS	12.50	1,657
South OR	MEDFORD	WHITE CITY	5R76	AVE C	12.50	90
South OR	ROSEBURG/MYRTLECREEK	ALVEY (BPA)	BB03	ALVEY-DIXONVILLE-500KV	500.00	-
South OR	ROSEBURG/MYRTLECREEK	ALVEY (BPA)	WI03	ALVEY-DIXONVILLE-230KV	230.00	-
South OR	ROSEBURG/MYRTLECREEK	CARNES	5U44	RND PRARIE	12.50	417
South OR	ROSEBURG/MYRTLECREEK	CARNES	5U45	GREEN	12.50	-
South OR	ROSEBURG/MYRTLECREEK	CLEARWATER	U07	CLEARWATER-LEMOLO #1-115KV	115.00	-
South OR	ROSEBURG/MYRTLECREEK	CLEARWATER	U08	CLEARWATER-LEMOLO #2-115KV	115.00	-
South OR	ROSEBURG/MYRTLECREEK	CLEARWATER	U09	CLEARWATER-CLEARWATER #1-115KV	115.00	-
South OR	ROSEBURG/MYRTLECREEK	CLEARWATER #1 SUB	6U17	BRIGGS	7.20	3
South OR	ROSEBURG/MYRTLECREEK	CLEARWATER #2 SUB	6U33	CLEARWATER	7.20	103
South OR	ROSEBURG/MYRTLECREEK	CLOAKE	4U37	RUSA	20.80	1
South OR	ROSEBURG/MYRTLECREEK	CLOAKE	4U38	HARVARD	20.80	3,439
South OR	ROSEBURG/MYRTLECREEK	CLOAKE	4U39	GOEDECK	20.80	1,074
South OR	ROSEBURG/MYRTLECREEK	DAYS CREEK	U01	DAYS CREEK-PROSPECT CNTRL-115KV	115.00	-
South OR	ROSEBURG/MYRTLECREEK	DAYS CREEK	U13-1	DAYS CREEK-GAZLEY-69KV	69.00	1
South OR	ROSEBURG/MYRTLECREEK	DAYS CREEK	U14	DAYS CREEK-MYRTLE CREEK-69KV	69.00	-
South OR	ROSEBURG/MYRTLECREEK	DIXONVILLE	BB08	DIXONVILLE-GRANTS PASS-230KV	230.00	-
South OR	ROSEBURG/MYRTLECREEK	DIXONVILLE	BB09	DIXONVILLE-RESTON-230KV	230.00	-
South OR	ROSEBURG/MYRTLECREEK	DIXONVILLE	BB10	DIXONVILLE-MERIDIAN-500KV	500.00	-
South OR	ROSEBURG/MYRTLECREEK	DIXONVILLE	BB12	DIXONVILLE 500KV-DIXONVILLE-230KV	230.00	1
South OR	ROSEBURG/MYRTLECREEK	DIXONVILLE	U02	DIXONVILLE-DAYS CREEK-115KV	115.00	-
South OR	ROSEBURG/MYRTLECREEK	DIXONVILLE	U03	DIXONVILLE-TOKETEE SW STA-115KV	115.00	-
South OR	ROSEBURG/MYRTLECREEK	DIXONVILLE	U05	DIXONVILLE-SODA SPRINGS-115KV	115.00	-
South OR	ROSEBURG/MYRTLECREEK	DIXONVILLE	U10-1	DIXONVILLE-LOOKING GLASS-69KV	69.00	-
South OR	ROSEBURG/MYRTLECREEK	DIXONVILLE	U11	DIXONVILLE-ROBERTS CREEK-115KV	115.00	-
South OR	ROSEBURG/MYRTLECREEK	DIXONVILLE	U12-1	DIXONVILLE-WINCHESTER-115KV	115.00	1

## Oregon Circuits

South OR	ROSEBURG/MYRTLECREEK	DIXONVILLE	U12-2	DIXONVILLE-OAKLAND-115KV	115.00	-
South OR	ROSEBURG/MYRTLECREEK	DIXONVILLE	U15	DIXONVILLE-DOUGLAS VENEER-69KV	69.00	-
South OR	ROSEBURG/MYRTLECREEK	GARDEN VALLEY	4U80	EDENBOWER	20.80	657
South OR	ROSEBURG/MYRTLECREEK	GARDEN VALLEY	4U81	VALLEY	20.80	1,322
South OR	ROSEBURG/MYRTLECREEK	GAZLEY	5U46	CANYONVILLE	12.50	426
South OR	ROSEBURG/MYRTLECREEK	GAZLEY	5U52	BEALS CREEK FEEDER	12.50	910
South OR	ROSEBURG/MYRTLECREEK	GLIDE SUBSTATION	5U83	IDLEYLD	12.50	1,004
South OR	ROSEBURG/MYRTLECREEK	GLIDE SUBSTATION	5U84	LITTLE RIVER	12.50	1,354
South OR	ROSEBURG/MYRTLECREEK	GREEN SUBSTATION	5U32	SAFARI	12.50	2,281
South OR	ROSEBURG/MYRTLECREEK	GREEN SUBSTATION	5U33	SUNNYSLOPE	12.50	1,453
South OR	ROSEBURG/MYRTLECREEK	ILLAHEE FLATS	6U13	ILLAHEE FLATS SINGLE PHASE RECLOS	7.20	26
South OR	ROSEBURG/MYRTLECREEK	LEMOLO # 1	5U920	DIAMOND LAKE	12.50	179
South OR	ROSEBURG/MYRTLECREEK	MYRTLE CREEK	5U76	SUPER Y	12.50	1,566
South OR	ROSEBURG/MYRTLECREEK	MYRTLE CREEK	5U77	BOOMER HILL	12.50	2,335
South OR	ROSEBURG/MYRTLECREEK	NICKEL MOUNTAIN	BB11	NICKEL MOUNTAIN-HANNA TAP SW STA	115.00	1
South OR	ROSEBURG/MYRTLECREEK	NICKEL MOUNTAIN	U17-1	NICKEL MOUNTAIN-RIDDLE-115KV	115.00	1
South OR	ROSEBURG/MYRTLECREEK	OAKLAND (OR)	5U11	UMPQUA	12.50	1,368
South OR	ROSEBURG/MYRTLECREEK	OAKLAND (OR)	5U12	STAGECOACH	12.50	551
South OR	ROSEBURG/MYRTLECREEK	RIDDLE	5U1	TRI CITY	12.50	1,022
South OR	ROSEBURG/MYRTLECREEK	RIDDLE	5U2	COW CREEK	12.50	1,611
South OR	ROSEBURG/MYRTLECREEK	RIDDLE	5U3	HANNA	12.50	270
South OR	ROSEBURG/MYRTLECREEK	RIDDLE	U13-2	RIDDLE-MYRTLE CREEK-GAZLEY-69KV	69.00	1
South OR	ROSEBURG/MYRTLECREEK	RIDDLE-VENEER	5U23	FORD MILL	12.50	1
South OR	ROSEBURG/MYRTLECREEK	RIDDLE-VENEER	5U50	RFP-LVL (EWP)	12.00	50
South OR	ROSEBURG/MYRTLECREEK	ROBERTS CREEK	U10-3	ROBERTS CREEK-GREEN-69KV	69.00	-
South OR	ROSEBURG/MYRTLECREEK	ROBERTS CREEK	U13	ROBERTS CREEK-MYRTLE CREEK-69KV	69.00	-
South OR	ROSEBURG/MYRTLECREEK	ROSEBURG	4U10	DIAMOND	20.80	2,503
South OR	ROSEBURG/MYRTLECREEK	ROSEBURG	4U22	DIXON	20.80	1,104
South OR	ROSEBURG/MYRTLECREEK	ROSEBURG	4U5	DOUGLAS	20.80	2,098
South OR	ROSEBURG/MYRTLECREEK	ROSEBURG	5U10	DIXON	12.50	-
South OR	ROSEBURG/MYRTLECREEK	ROSEBURG LUMBER CO	5U95	ROSEBURG LBR	12.50	1
South OR	ROSEBURG/MYRTLECREEK	SLIDE CREEK	6U76	SLIDE CREEK CAMP	7.20	6
South OR	ROSEBURG/MYRTLECREEK	SODA SPRINGS HE PLT	6U1	DRY CREEK	7.20	24
South OR	ROSEBURG/MYRTLECREEK	SODA SPRINGS HE PLT	U04	SODA SPRINGS-TOKETEE-115KV	115.00	-

## Oregon Circuits

South OR	ROSEBURG/MYRTLECREEK	SOUTHGATE	4U30	SHADY POINT	20.80	1,598
South OR	ROSEBURG/MYRTLECREEK	SOUTHGATE	4U31	BOOTH	20.80	1,375
South OR	ROSEBURG/MYRTLECREEK	STEAMBOAT	6U18	STEAMBOAT	7.20	22
South OR	ROSEBURG/MYRTLECREEK	SUTHERLIN	5U35	NON-PAREIL	12.50	1,342
South OR	ROSEBURG/MYRTLECREEK	SUTHERLIN	5U36	DEADY	12.50	1,326
South OR	ROSEBURG/MYRTLECREEK	SUTHERLIN	5U56	Industrial	12.50	474
South OR	ROSEBURG/MYRTLECREEK	TILLER	5U89	JACKSON CRK	12.50	322
South OR	ROSEBURG/MYRTLECREEK	TOKETEE	6U21	BACK UP FOR CLEARWATER 6U33	6.90	-
South OR	ROSEBURG/MYRTLECREEK	TOKETEE	8U12	TOKETEE CITY	2.40	19
South OR	ROSEBURG/MYRTLECREEK	TOKETEE	U06	TOKETEE-CLEARWATER-115KV	115.00	-
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	4U18	WILBUR	20.80	1,667
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	5U15	NEWTON CREEK	12.50	1,760
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	5U17	FISHER	12.50	746
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	5U19	EVANS	12.50	749
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	U10-2	WINCHESTER-GARDEN VALLEY-69KV	69.00	-
South OR	ROSEBURG/MYRTLECREEK	WINSTON	5U48	BROCKWAY	12.50	882
South OR	ROSEBURG/MYRTLECREEK	WINSTON	5U49	DILLARD	12.50	1,478
WlmVly	ALBANY	BPA ALBANY	WI09	BPA ALBANY-HAZELWOOD-115KV	115.00	-
WlmVly	ALBANY	HAZELWOOD	4M335	WEST HIGH	20.80	1,487
WlmVly	ALBANY	HAZELWOOD	4M336	RIVERVIEW (HAZELWOOD)	20.80	1,231
WlmVly	ALBANY	HAZELWOOD	WI07	HAZELWOOD-FRY-115KV	115.00	-
WlmVly	ALBANY	HAZELWOOD	WI10	HAZELWOOD-MARYS RIVER-115KV	115.00	-
WlmVly	ALBANY	HAZELWOOD	WI10-1	HAZELWOOD-GRANT-115KV	115.00	1
WlmVly	ALBANY	HAZELWOOD	WI14-1	HAZELWOOD-QUEEN AVE-69KV	69.00	1
WlmVly	ALBANY	JEFFERSON (OR)	4M117	MARION	20.80	742
WlmVly	ALBANY	JEFFERSON (OR)	4M125	MINT	20.80	2,568
WlmVly	ALBANY	MURDER CREEK	4M243	SCRAVEL HILL	20.80	3,776
WlmVly	ALBANY	MURDER CREEK	4M245	RURAL NW	20.80	1,857
WlmVly	ALBANY	MURDER CREEK	4M249	DURA-PACIFIC	20.80	4
WlmVly	ALBANY	MURDER CREEK	4M250	INDUSTRIAL	20.80	1,267
WlmVly	ALBANY	MURDER CREEK	5M131	WAH CHANG SOUTH	12.50	1
WlmVly	ALBANY	MURDER CREEK	5M132	WAH CHANG WEST	12.50	-
WlmVly	ALBANY	OREMET	4M295	OAK CREEK	20.80	111
WlmVly	ALBANY	OREMET	4M296	ROGERSDALE	20.80	3,129



## Oregon Circuits

WimVly	ALBANY	OREMET	5M19	OREMET	12.50	3
WimVly	ALBANY	OREMET	5M20	OREMET-BPA	12.50	-
WimVly	ALBANY	PARRISH GAP	WI15-1	PARRISH GAP-STAYTON-69KV	69.00	1
WimVly	ALBANY	PARRISH GAP	WI15-3	PARRISH GAP-JEFFERSON-69KV	69.00	1
WimVly	ALBANY	PARRISH GAP	WI15-4	JEFFERSON-JEFFERSON TAP-69KV	69.00	1
WimVly	ALBANY	QUEEN AVE	4M217	SANTIAM	20.80	2,000
WimVly	ALBANY	QUEEN AVE	4M258	HILL STREET	20.80	2,131
WimVly	ALBANY	QUEEN AVE	4M261	WAVERLY	20.80	3,362
WimVly	ALBANY	QUEEN AVE	4M262	GEARY STREET	20.80	2,608
WimVly	ALBANY	QUEEN AVE	WI14-2	QUEEN-SCIO-69KV	69.00	3
WimVly	ALBANY	QUEEN AVE	WI17	JEFFERSON JCT-JEFFERSON TAP-69KV	69.00	1
WimVly	ALBANY	VINE STREET	4M15	FERRY	20.80	2,229
WimVly	ALBANY	VINE STREET	4M16	WATER STREET	20.80	3,790
WimVly	ALBANY	VINE STREET	WI13-3	VINE ST-INDEPENDENCE-69KV	69.00	1
WimVly	ALBANY	VINE STREET	WI16	VINE STREET-JEFFERSON TAP-69KV	69.00	1
WimVly	ALBANY	WESTERN KRAFT	5M24	WEST MAIN	12.50	1
WimVly	ALBANY	WESTERN KRAFT	5M25	EAST MAIN	12.50	2
WimVly	CORVALLIS	BUCHANAN	4M130	HEWLETT PACKARD	20.80	2,679
WimVly	CORVALLIS	BUCHANAN	4M133	PEORIA	20.80	2,489
WimVly	CORVALLIS	BUCHANAN	4M134	N. NINTH ST.	20.80	2,617
WimVly	CORVALLIS	BUCHANAN	WI06-3	BUCHANAN-DIXON-115KV	115.00	1
WimVly	CORVALLIS	CIRCLE BLVD	4M394	H. P. #1	20.80	4
WimVly	CORVALLIS	CIRCLE BLVD	4M396	H. P. #2	20.80	-
WimVly	CORVALLIS	CIRCLE BLVD	4M427	H. P. #3	20.80	1
WimVly	CORVALLIS	CIRCLE BLVD	4M428	H. P. #4	20.80	-
WimVly	CORVALLIS	CIRCLE BLVD	4M429	H. P. #5	20.80	1
WimVly	CORVALLIS	CIRCLE BLVD	4M430	H. P. #6	20.80	-
WimVly	CORVALLIS	CIRCLE BLVD	WI06-2	CIRCLE BLVD-BUCHANAN-115KV	115.00	1
WimVly	CORVALLIS	DIXON	7M26	FOURTH ST.	4.10	201
WimVly	CORVALLIS	DIXON	7M29	SECOND ST.	4.10	305
WimVly	CORVALLIS	GRANT	4M265	HIGH SCHOOL	20.80	2,539
WimVly	CORVALLIS	GRANT	4M266	CHINTIMINI	20.80	2,539
WimVly	CORVALLIS	GRANT	4M268	KINGS ROAD	20.80	2,556
WimVly	CORVALLIS	GRANT	4M269	29TH STREET	20.80	3,287

## Oregon Circuits

WimVly	CORVALLIS	GRANT	WI10-2	GRANT-HILLVIEW-115KV	115.00	1
WimVly	CORVALLIS	HILLVIEW	4M180	WEST HILLS	20.80	1,709
WimVly	CORVALLIS	HILLVIEW	4M181	PHILOMATH	20.80	651
WimVly	CORVALLIS	HILLVIEW	4M182	SUNSET	20.80	1,535
WimVly	CORVALLIS	HILLVIEW	4M185	PLYMOUTH	20.80	2,245
WimVly	CORVALLIS	MARYS RIVER	4M151	GREENBERRY	20.80	3,612
WimVly	CORVALLIS	MARYS RIVER	4M152	AVERY	20.80	191
WimVly	CORVALLIS	MARYS RIVER	4M153	GALLAGHER	20.80	161
WimVly	CORVALLIS	MARYS RIVER	WI06-4	MARY'S RIVER-DIXON-115KV	115.00	1
WimVly	CORVALLIS	MARYS RIVER	WI10-3	MARY'S RIVER-HILLVIEW-115KV	115.00	1
WimVly	COTTAGE GROVE/J.CITY	ALVEY (BPA)	WI12	BPA ALVEY-VILLAGE GREEN-115KV	115.00	-
WimVly	COTTAGE GROVE/J.CITY	CALAPOOYA	WI23	CALAPOOYA-HALSEY-69KV	69.00	-
WimVly	COTTAGE GROVE/J.CITY	COBURG	4M220	DETERING	20.80	529
WimVly	COTTAGE GROVE/J.CITY	DIAMOND HILL	WI02-2	DIAMOND HILL-BPA ALVEY-230KV	230.00	-
WimVly	COTTAGE GROVE/J.CITY	DIAMOND HILL	WI19	DIAMOND HILL-BROWNSVILLE-69KV	69.00	-
WimVly	COTTAGE GROVE/J.CITY	DIAMOND HILL	WI20	DIAMOND HILL-EWEB MCKENZIE-69KV	69.00	-
WimVly	COTTAGE GROVE/J.CITY	DIAMOND HILL	WI21	DIAMOND HILL-JUNCTION CITY-69KV	69.00	-
WimVly	COTTAGE GROVE/J.CITY	GOSHEN (OR)	4M360	GOSHEN FDR	20.80	1,660
WimVly	COTTAGE GROVE/J.CITY	HARRISBURG SUB	4M400	TERRITORIAL	20.80	1,907
WimVly	COTTAGE GROVE/J.CITY	JUNCTION CITY	4M102	6TH STREET	20.80	1,174
WimVly	COTTAGE GROVE/J.CITY	JUNCTION CITY	4M99	PRAIRIE ROAD	20.80	935
WimVly	COTTAGE GROVE/J.CITY	LANCASTER	4M209	MONROE	20.80	1,128
WimVly	COTTAGE GROVE/J.CITY	MARTIN CREEK (BPA)	WI12B	BPA MARTIN CREEK-VLG GREEN-115KV	115.00	-
WimVly	COTTAGE GROVE/J.CITY	VILLAGE GREEN	4M84	NORTH SIDE	20.80	2,394
WimVly	COTTAGE GROVE/J.CITY	VILLAGE GREEN	4M86	MADISON	20.80	1,598
WimVly	DALLAS/INDEPENDENCE	DALLAS	4M100	RURAL (DALLAS)	20.80	4,397
WimVly	DALLAS/INDEPENDENCE	DALLAS	4M201	INDUSTRIAL	20.80	35
WimVly	DALLAS/INDEPENDENCE	DALLAS	4M202	ELLENDALE	20.80	2,896
WimVly	DALLAS/INDEPENDENCE	DALLAS	4M238	DALLAS	20.80	2,315
WimVly	DALLAS/INDEPENDENCE	INDEPENDENCE	4M22	RICKREAL	20.80	1,984
WimVly	DALLAS/INDEPENDENCE	INDEPENDENCE	4M25	BUENA VISTA	20.80	3,097
WimVly	DALLAS/INDEPENDENCE	MONPAC	WI05	MONPAC-BPA SALEM-115KV	115.00	-
WimVly	DALLAS/INDEPENDENCE	MONPAC	WI13-4	MONPAC-INDEPENDENCE-69KV	69.00	1
WimVly	LEBANON	BROWNSVILLE	4M17	CALAPOOIA	12.50	1,919

# Oregon Circuits

W/lmVly	LEBANON	CROWFOOT	4M204	CROWFOOT	20.80	1,532
W/lmVly	LEBANON	CROWFOOT	4M206	US PLYWOOD (LEBANON)	20.80	1,766
W/lmVly	LEBANON	FRY	WI01-A	FRY-PARRISH GAP-230KV	230.00	1
W/lmVly	LEBANON	FRY	WI02-1	FRY-DIAMOND HILL	230.00	-
W/lmVly	LEBANON	FRY	WI06	FRY-MARYS RIVER-115KV	115.00	-
W/lmVly	LEBANON	FRY	WI06-1	FRY-CIRCLE BLVD-115KV	115.00	1
W/lmVly	LEBANON	FRY	WI08	FRY-WESTERN KRAFT-115KV	115.00	-
W/lmVly	LEBANON	FRY	WI11	FRY-FOSTER-115KV	115.00	-
W/lmVly	LEBANON	FRY	WI11-1	FOSTER-BPA LEBANON-115KV	115.00	-
W/lmVly	LEBANON		4M61	TANGENT	20.80	2,477
W/lmVly	LEBANON		4M62	RALSTON	20.80	2,026
W/lmVly	LEBANON		4M63	TENNESSEE	20.80	1,851
W/lmVly	LEBANON		4M79	CROWN Z	20.80	990
W/lmVly	LEBANON	SWEET HOME	4M37	HOLLEY	20.80	2,054
W/lmVly	LEBANON	SWEET HOME	4M38	NARROWS	20.80	993
W/lmVly	LEBANON	SWEET HOME	4M93	AMES CREEK	20.80	1,710
W/lmVly	LEBANON	SWEET HOME	4M94	FOSTER	20.80	2,316
W/lmVly	STAYTON	BPA SANTIAM	ZB001	BPA SANTIAM-BPA ALBANY#1-230KV	230.00	-
W/lmVly	STAYTON	LYONS	WI14-3A	TAP TO EVERGREEN BIO POWER-69KV	69.00	1
W/lmVly	STAYTON	LYONS	WI14-4	LYONS-SANTIAM SWITCH STATION-69K	69.00	1
W/lmVly	STAYTON	NEW LYONS	4M120	MILL CITY	20.80	1,967
W/lmVly	STAYTON	NEW LYONS	4M70	MEHAMA	20.80	997
W/lmVly	STAYTON	NEW STAYTON	4M19	AUMSVILLE	20.80	3,140
W/lmVly	STAYTON	NEW STAYTON	4M353	WEST STAYTON	20.80	3,448
W/lmVly	STAYTON	NEW STAYTON	4M370	CASCADE	20.80	1,651
W/lmVly	STAYTON	NEW STAYTON	4M50	3RD STREET	20.80	952
W/lmVly	STAYTON	PARRISH GAP	WI01-B	PARRISH GAP-PGE BETHEL-230KV	230.00	1
W/lmVly	STAYTON	SCIO	5M126	THOMAS	12.50	1,603
W/lmVly	STAYTON	SCIO	WI14-3	SCIO-LYONS-69KV	69.00	1
W/lmVly	STAYTON	STAYTON CITY	WI15-2	STAYTON-SANTIAM SWITCH STATION-6	69.00	1
W/lmVly	STAYTON	STAYTON CITY	WI15A	SANTIAM SW STA-SANTIAM(BPA)-69KV	69.00	1

### Oregon 2013 Circuit Metrics (excluding major events)

OR Reliability Region	Op Area Name	Substation Name	Circuit Id	Circuit Name	Customers In Incident Sustained	Customer Minutes Lost for Incident	Circuit Customer Count	SAIDI	SAIFI
Central OR	BEND/REDMOND	BEND	5D10	PORTLAND AVE	360	25,526	2,293	11.13	0.157
Central OR	BEND/REDMOND	BEND	5D11	GLEN VISTA	33	6,970	970	7.19	0.034
Central OR	BEND/REDMOND	BEND	5D12	DIVISION ST.	13	749	221	3.39	0.059
Central OR	BEND/REDMOND	BEND	5D196	MALLARD	260	34,021	1,483	22.94	0.175
Central OR	BEND/REDMOND	BOND STREET	5D411	BACHELOR	1,374	319,876	1,670	191.54	0.823
Central OR	BEND/REDMOND	BOND STREET	5D418	BLAKELY	6	495	1,266	0.39	0.005
Central OR	BEND/REDMOND	CHINA HAT	5D140	LAVA (CHINA HAT)	1,300	283,645	2,306	123.00	0.564
Central OR	BEND/REDMOND	CHINA HAT	5D142	HIGH DESERT	3,365	422,178	1,581	267.03	2.128
Central OR	BEND/REDMOND	CHINA HAT	5D144	D.R.W.	1,367	307,038	2,411	127.35	0.567
Central OR	BEND/REDMOND	CLEVELAND AVE.	5D30	ARROWHEAD	4	422	885	0.48	0.005
Central OR	BEND/REDMOND	CLEVELAND AVE.	5D35	WICKIUP	15	910	962	0.95	0.016
Central OR	BEND/REDMOND	CLEVELAND AVE.	5D38	TOMAHAWK	355	83,157	1,400	59.40	0.254
Central OR	BEND/REDMOND	CLEVELAND AVE.	5D94	TEEPEE	327	56,804	2,896	23.07	0.113
Central OR	BEND/REDMOND	CLEVELAND AVE.	5D96	OBSIDIAN	145	13,834	784	17.65	0.185
Central OR	BEND/REDMOND	CLEVELAND AVE.	5D98	HUCKLEBERRY	82	8,174	1,315	6.22	0.062
Central OR	BEND/REDMOND	CROOKED RIVER RANCH	4D131	CANYON	34	4,985	1,740	2.87	0.020
Central OR	BEND/REDMOND	CROOKED RIVER RANCH	4D30	CROOKED R.R.	157	41,540	762	54.51	0.206
Central OR	BEND/REDMOND	DESCHUTES	5D184	PRONGHORN	159	50,274	1,115	45.09	0.143
Central OR	BEND/REDMOND	DESCHUTES	5D2	DESCHUTES S	139	34,861	961	36.28	0.145
Central OR	BEND/REDMOND	HUNTERS CIRCLE	5D192	Mackinaw	126	28,152	613	45.93	0.206
Central OR	BEND/REDMOND	OVERPASS	5D104	AWBREY	5	832	674	1.23	0.007
Central OR	BEND/REDMOND	OVERPASS	5D106	NEZ PERCE	228	28,607	2,625	10.90	0.087
Central OR	BEND/REDMOND	OVERPASS	5D120	CHINOOK	60	10,807	1,301	8.31	0.046
Central OR	BEND/REDMOND	OVERPASS	5D128	PAIUTE	66	11,217	1,737	6.46	0.038
Central OR	BEND/REDMOND	OVERPASS	5D155	APACHE	2,197	244,946	1,801	136.01	1.220
Central OR	BEND/REDMOND	PILOT BUTTE	5D261	KLONDIKE	1,431	218,090	2,844	76.68	0.503
Central OR	BEND/REDMOND	PILOT BUTTE	5D263	DRAKE FEEDER	122	18,137	2,095	8.66	0.058
Central OR	BEND/REDMOND	REDMOND	5D21	SOUTH (REDMOND)	0	0	717	0.00	0.000
Central OR	BEND/REDMOND	REDMOND	5D22	INDUSTRIAL	146	14,033	1,449	9.68	0.101
Central OR	BEND/REDMOND	REDMOND	5D223	TETHEROW	4	372	818	0.45	0.005
Central OR	BEND/REDMOND	REDMOND	5D226	CLINE FALLS	434	57,440	1,454	39.51	0.298
Central OR	BEND/REDMOND	REDMOND	5D227	WINDSOR	1,108	68,435	2,677	25.56	0.414
Central OR	BEND/REDMOND	REDMOND	5D228	CITY	118	21,123	1,334	15.83	0.088
Central OR	BEND/REDMOND	REDMOND	5D229	JUNIPER	80	32,893	416	79.07	0.192
Central OR	BEND/REDMOND	SHEVLIN PARK	5D238	WOLVERINE (SHP)	162	22,189	2,746	8.08	0.059
Central OR	BEND/REDMOND	SHEVLIN PARK	5D241	BADGER (SHP)	312	59,649	2,910	20.50	0.107

### Oregon 2013 Circuit Metrics (excluding major events)

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Central OR	BEND/REDMOND	SHEVLIN PARK	5D243	Black Bear	69	21,412	537	39.87	0.128
Central OR	BEND/REDMOND	YEW AVENUE	5D322	BIRDIE	239	51,837	1,437	36.07	0.166
Central OR	BEND/REDMOND	YEW AVENUE	5D323	FAIRWAY	15	2,623	391	6.71	0.038
Central OR	BEND/REDMOND	YEW AVENUE	5D325	EAGLE	49	4,455	2,365	1.88	0.021
Central OR	MADRAS	CHERRY LANE	5D295	7 PEAKS	4	939	146	6.43	0.027
Central OR	MADRAS	CULVER	5D5	CULVER	3,895	774,904	1,774	436.81	2.196
Central OR	MADRAS	MADRAS	5D52	MADRAS RURAL	1,204	45,714	1,027	44.51	1.172
Central OR	MADRAS	MADRAS	5D53	AGATE	150	24,607	1,321	18.63	0.114
Central OR	MADRAS	MADRAS	5D57	QUARTZ	80	9,021	1,421	6.35	0.056
Central OR	MADRAS	MADRAS	5D61	MADRAS CITY	428	58,575	1,333	43.94	0.321
Central OR	MADRAS	POWELL BUTTE	5D1	POWELL BUTTE	116	19,416	606	32.04	0.191
Central OR	MADRAS	PRINEVILLE	5D126	RIMROCK	403	57,516	2,240	25.68	0.180
Central OR	MADRAS	PRINEVILLE	5D167	NORTHVILLE	227	35,372	1,260	28.07	0.180
Central OR	MADRAS	PRINEVILLE	5D25	OCHOCO	833	120,016	989	121.35	0.842
Central OR	MADRAS	PRINEVILLE	5D47	MC KAY (PRINEVILLE)	100	22,599	1,649	13.70	0.061
Central OR	MADRAS	PRINEVILLE	5D48	LAMONTA	28	4,637	643	7.21	0.044
Central OR	MADRAS	PRINEVILLE	5D69	GRIMES FLAT	2,545	343,210	1,597	214.91	1.594
Central OR	MADRAS	WARM SPRINGS	4D68	WARM SPRINGS (OF)	1,391	205,394	1,084	189.48	1.283
CoastPlus	CLATSOP (ASTORIA)	CANNON BEACH	5A10	HAYSTACK	109	13,179	1,535	8.59	0.071
CoastPlus	CLATSOP (ASTORIA)	CANNON BEACH	5A8	ECOLA	1,459	92,689	1,260	73.56	1.158
CoastPlus	CLATSOP (ASTORIA)	FERN HILL SUB	5A51	JOHN DAY	694	68,293	261	261.66	2.659
CoastPlus	CLATSOP (ASTORIA)	FERN HILL SUB	5A52	SCANDINAVIAN	46	3,257	105	31.02	0.438
CoastPlus	CLATSOP (ASTORIA)	KNAPPA SVENSEN	5A92	SVENSEN	430	19,221	701	27.42	0.613
CoastPlus	CLATSOP (ASTORIA)	KNAPPA SVENSEN	5A93	BRADWOOD	267	50,208	941	53.36	0.284
CoastPlus	CLATSOP (ASTORIA)	SEASIDE	5A80	GROVE	1,043	27,159	2,363	11.49	0.441
CoastPlus	CLATSOP (ASTORIA)	SEASIDE	5A81	CENTRAL	89	7,905	1,639	4.82	0.054
CoastPlus	CLATSOP (ASTORIA)	SEASIDE	5A82	NECANICUM	3,706	108,820	1,194	91.14	3.104
CoastPlus	CLATSOP (ASTORIA)	SEASIDE	5A83	GEARHART	1,687	271,143	3,107	87.27	0.543
CoastPlus	CLATSOP (ASTORIA)	WARRENTON	5A15	CITY	476	87,540	1,808	48.42	0.263
CoastPlus	CLATSOP (ASTORIA)	WARRENTON	5A16	MILL (WARRENTON)	18	1,806	523	3.45	0.034
CoastPlus	CLATSOP (ASTORIA)	WARRENTON	5A20	SOUTH (WARRENTON)	1,216	164,680	1,523	108.13	0.798
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A202	PORT DOCK	47	4,314	1,230	3.51	0.038
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A204	MOO COW	1,219	46,006	1,132	40.64	1.077
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A205	FIFTH STREET	22	989	955	1.04	0.023
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A206	YOUNGS BAY #6	0	0	330	0.00	0.000
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A210	YOUNGS BAY #10	127	13,365	1,276	10.47	0.100

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CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A211	OLNEY	1,651	237,978	974	244.33	1.695
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A213	INDUSTRIAL	2	404	1,354	0.30	0.001
CoastPlus	COOS BAY/COQUILLE	BANDON TIE (BPA)	L804	BANDON	90	9,020	736	12.26	0.122
CoastPlus	COOS BAY/COQUILLE	COOS RIVER	4C106	COOS RIVER	2,483	491,209	1,402	350.36	1.771
CoastPlus	COOS BAY/COQUILLE	COQUILLE	4C41	HENRY STREET	282	21,622	1,773	12.20	0.159
CoastPlus	COOS BAY/COQUILLE	COQUILLE	4C42	TERRES HIGHTS	2,522	212,827	1,625	130.97	1.552
CoastPlus	COOS BAY/COQUILLE	COQUILLE	4C43	INDUSTRIAL	1	61	179	0.34	0.006
CoastPlus	COOS BAY/COQUILLE	EMPIRE NEW	4C108	EMPIRE	1,824	61,497	1,747	35.20	1.044
CoastPlus	COOS BAY/COQUILLE	EMPIRE NEW	4C89	SCOTT	1,445	45,581	1,423	32.03	1.015
CoastPlus	COOS BAY/COQUILLE	EMPIRE NEW	4C90	CHARLESTON	4,666	514,809	2,186	235.50	2.134
CoastPlus	COOS BAY/COQUILLE	JORDAN POINT	5C6	SAND DUNES (JORDAN POINT)	1	358	30	11.94	0.033
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	4C48	CITY CENTER	91	6,816	1,598	4.27	0.057
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	4C49	EASTSIDE	32	2,398	800	3.00	0.040
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	4C5	GEORGIA-PAC	14	1,211	103	11.76	0.136
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	4C50	BUNKERHILL	3,620	230,925	1,911	120.84	1.894
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	4C97	ENGLEWOOD	43	2,805	1,421	1.97	0.030
CoastPlus	COOS BAY/COQUILLE	MYRTLE POINT	4C36	NORTH (MYRTLE POINT)	34	8,456	362	23.36	0.094
CoastPlus	COOS BAY/COQUILLE	MYRTLE POINT	4C37	MAPLE STREET	1,476	166,823	2,204	75.69	0.670
CoastPlus	COOS BAY/COQUILLE	STATE STREET	4C112	WOODLAND	302	35,817	1,874	19.11	0.161
CoastPlus	COOS BAY/COQUILLE	STATE STREET	4C66	BAYSHORE	1,575	109,491	1,728	63.36	0.911
CoastPlus	COOS BAY/COQUILLE	STATE STREET	4C67	INDUSTRIAL	2,427	427,987	2,280	187.71	1.064
CoastPlus	COOS BAY/COQUILLE	STATE STREET	4C86	BANGOR	2,151	143,941	1,783	80.73	1.206
CoastPlus	HOOD RIVER	GORDON HOLLOW	4K1	SHERMAN 208	936	16,178	448	36.11	2.089
CoastPlus	HOOD RIVER	GRASS VALLEY	6K1	KENT	131	3,129	64	48.88	2.047
CoastPlus	HOOD RIVER	GRASS VALLEY	8K4	GRASS VALLEY CIT	202	3,785	100	37.85	2.020
CoastPlus	HOOD RIVER	HOOD RIVER	5K37	RESIDENTIAL	160	7,071	2,014	3.51	0.079
CoastPlus	HOOD RIVER	HOOD RIVER	5K43	BELMONT	2,038	234,644	1,109	211.58	1.838
CoastPlus	HOOD RIVER	HOOD RIVER	5K44	NORTH (HOOD RIVER)	479	22,594	1,753	12.89	0.273
CoastPlus	HOOD RIVER	HOOD RIVER	5K70	EASTSIDE	374	61,387	1,036	59.25	0.361
CoastPlus	HOOD RIVER	HOOD RIVER	5K74	SOUTH (HOOD RIVER)	276	27,370	1,619	16.91	0.170
CoastPlus	HOOD RIVER	KENWOOD	5K50	OAKGROVE	37	9,580	721	13.29	0.051
CoastPlus	HOOD RIVER	MORO	8K6	MORO	239	3,948	118	33.45	2.025
CoastPlus	HOOD RIVER	WASCO	7K1	WASCO	555	9,435	277	34.06	2.004
CoastPlus	LINCOLN CITY	DEVILS LAKE	4A310	INLAND FEEDER	2,142	155,982	1,850	84.31	1.158
CoastPlus	LINCOLN CITY	DEVILS LAKE	4A312	OCEAN	3,392	258,596	2,897	89.26	1.171
CoastPlus	LINCOLN CITY	DEVILS LAKE	4A316	LAKE (DEVILS LAKE)	6,044	904,473	4,475	202.12	1.351

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CoastPlus	LINCOLN CITY	DEVILS LAKE	4A338	SIUSLAW	385	54,169	660	82.07	0.583
CoastPlus	LINCOLN CITY	GLENEDEN	7A364	GLENEDEN	180	37,633	714	52.71	0.252
CoastPlus	LINCOLN CITY	GLENEDEN	7A366	SALISHAN	6	617	359	1.72	0.017
CoastPlus	LINCOLN CITY	NELSCOTT	7A390	NELSCOTT	794	65,535	358	183.06	2.218
CoastPlus	LINCOLN CITY	PGE GRAND RONDE	R114	BOYER	11	2,564	0	0.00	0.000
CoastPlus	LINCOLN CITY	PGE GRAND RONDE	R136	BOYER	19	3,471	19	182.68	1.000
CoastPlus	LINCOLN CITY	WECOMA BEACH	7A354	WECOMA	920	62,721	719	87.23	1.280
CoastPlus	PORTLAND	ALBINA	5P111	ALBINA 11C01-UG	1	622	331	1.88	0.003
CoastPlus	PORTLAND	ALBINA	5P150	ALBINA 11C15	309	8,268	165	50.11	1.873
CoastPlus	PORTLAND	ALBINA	5P66	11C25	3	256	55	4.66	0.055
CoastPlus	PORTLAND	ALBINA	5P92	11C12-UG	1	10	348	0.03	0.003
CoastPlus	PORTLAND	ALDERWOOD 115/12.5	5P22	ALDERWOOD #2	202	2,222	202	11.00	1.000
CoastPlus	PORTLAND	ALDERWOOD 115/12.5	5P33	ALDERWOOD #4	381	104,832	186	563.61	2.048
CoastPlus	PORTLAND	ALDERWOOD 115/12.5	5P604	ALDERWOOD #3	366	5,881	182	32.32	2.011
CoastPlus	PORTLAND	BLOSS	5P172	FURNACE	0	0	1	0.00	0.000
CoastPlus	PORTLAND	COLUMBIA (OR)	5P266	#2	116	16,491	2,635	6.26	0.044
CoastPlus	PORTLAND	COLUMBIA (OR)	5P268	COLUMBIA #1	118	16,801	331	50.76	0.356
CoastPlus	PORTLAND	COLUMBIA (OR)	5P474	COLUMBIA #6	32	5,852	568	10.30	0.056
CoastPlus	PORTLAND	COLUMBIA (OR)	5P476	COLUMBIA #3	57	12,260	859	14.27	0.066
CoastPlus	PORTLAND	COLUMBIA (OR)	5P478	COLUMBIA #4	2,545	601,085	841	714.73	3.026
CoastPlus	PORTLAND	CULLY	5P288	CULLY #3-UG	1	53	805	0.07	0.001
CoastPlus	PORTLAND	CULLY	5P290	CULLY #2	98	6,448	2,379	2.71	0.041
CoastPlus	PORTLAND	CULLY	5P292	CULLY #1	2,869	130,610	2,922	44.70	0.982
CoastPlus	PORTLAND	HOLLADAY (OR)	5P146	HOLLADAY #2-UG	0	0	1	0.00	0.000
CoastPlus	PORTLAND	HOLLADAY (OR)	5P156	HOLLADAY #4-UG	3	623	196	3.18	0.015
CoastPlus	PORTLAND	HOLLADAY (OR)	5P158	HOLLADAY #6	27	1,936	837	2.31	0.032
CoastPlus	PORTLAND	HOLLYWOOD	5P203	HOLLYWOOD #3	64	6,531	1,318	4.96	0.049
CoastPlus	PORTLAND	HOLLYWOOD	5P204	HOLLYWOOD #2	258	52,114	1,669	31.22	0.155
CoastPlus	PORTLAND	HOLLYWOOD	5P205	HOLLYWOOD #1	33	8,664	2,125	4.08	0.016
CoastPlus	PORTLAND	HOLLYWOOD	5P208	HOLLYWOOD #5	451	40,167	1,699	23.64	0.265
CoastPlus	PORTLAND	HOLLYWOOD	5P209	HOLLYWOOD #4	55	5,691	2,354	2.42	0.023
CoastPlus	PORTLAND	KILLINGSWORTH	5P123	KILLINGSWORTH #3	563	43,129	379	113.80	1.485
CoastPlus	PORTLAND	KILLINGSWORTH	5P217	KILLINGSWORTH #5	451	6,484	455	14.25	0.991
CoastPlus	PORTLAND	KILLINGSWORTH	5P41	KILLINGSWORTH #4	3,069	86,210	2,741	31.45	1.120
CoastPlus	PORTLAND	KILLINGSWORTH	5P88	KILLINGSWORTH #1	16	199	16	12.42	1.000
CoastPlus	PORTLAND	KILLINGSWORTH	5P89	KILLINGSWORTH #2	3,578	54,318	3,099	17.53	1.155

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CoastPlus	PORTLAND	KNOTT	5P231	KNOTT #1	103	24,526	2,575	9.52	0.040
CoastPlus	PORTLAND	KNOTT	5P232	KNOTT #2	19	5,305	1,185	4.48	0.016
CoastPlus	PORTLAND	KNOTT	5P233	KNOTT #3	2,480	217,698	2,291	95.02	1.082
CoastPlus	PORTLAND	KNOTT	5P372	11046	4	809	418	1.93	0.010
CoastPlus	PORTLAND	KNOTT	5P374	11020	12	1,377	1,023	1.35	0.012
CoastPlus	PORTLAND	LINCOLN (OR)	5P422	11D06-UG	0	0	553	0.00	0.000
CoastPlus	PORTLAND	MALLORY	5P152	MALLORY #1	28	3,681	1,928	1.91	0.015
CoastPlus	PORTLAND	MALLORY	5P164	MALLORY #2	344	78,735	3,141	25.07	0.110
CoastPlus	PORTLAND	PARKROSE	5P244	PARKROSE#4	3,282	121,055	3,112	38.90	1.055
CoastPlus	PORTLAND	PARKROSE	5P246	PARKROSE#3	3,267	237,195	3,094	76.66	1.056
CoastPlus	PORTLAND	PARKROSE	5P250	PARKROSE#2	2,046	86,604	677	127.92	3.022
CoastPlus	PORTLAND	PARKROSE	5P252	PARKROSE#1	1,887	129,876	1,817	71.48	1.039
CoastPlus	PORTLAND	RUSSELLVILLE	5P274	RUSSELLVILLE #3	6,906	1,344,961	3,038	442.71	2.273
CoastPlus	PORTLAND	RUSSELLVILLE	5P276	RUSSELLVILLE #4	2,785	418,006	2,125	196.71	1.311
CoastPlus	PORTLAND	RUSSELLVILLE	5P278	RUSSELLVILLE #1	851	26,942	3,244	8.31	0.262
CoastPlus	PORTLAND	RUSSELLVILLE	5P280	RUSSELLVILLE #2	178	51,077	1,305	39.14	0.136
CoastPlus	PORTLAND	VERNON	5P391	VERNON #1	3,772	405,017	1,834	220.84	2.057
CoastPlus	PORTLAND	VERNON	5P392	VERNON NO. 2	3,310	42,307	2,491	16.98	1.329
CoastPlus	PORTLAND	VERNON	5P393	VERNON #3	2,897	56,331	3,073	18.33	0.943
CoastPlus	PORTLAND	VERNON	5P394	VERNON # 4	3,281	51,684	3,176	16.27	1.033
CoastPlus	PORTLAND	VERNON	5P395	VERNON # 5	2,255	41,626	2,161	19.26	1.043
Northeast OR	ENTERPRISE	ENTERPRISE (OR)	4W8	CREIGHTON LN	2,181	198,103	1,452	136.43	1.502
Northeast OR	ENTERPRISE	ENTERPRISE (OR)	5W15	CITY	78	5,096	963	5.29	0.081
Northeast OR	ENTERPRISE	ENTERPRISE (OR)	5W26	RURAL (ENTERPRIS	306	20,563	1,074	19.15	0.285
Northeast OR	ENTERPRISE	JOSEPH	5W21	PRAIRIE	1,192	105,108	874	120.26	1.364
Northeast OR	ENTERPRISE	MINAM	5W18	MINAM	40	7,231	13	556.26	3.077
Northeast OR	ENTERPRISE	PALLETTE	4W14	PALLETTE NORTH	1,464	93,232	177	526.74	8.271
Northeast OR	ENTERPRISE	PALLETTE	4W15	PALLETTE SOUTH	444	28,030	55	509.63	8.073
Northeast OR	ENTERPRISE	WALLOWA	5W28	CITY	267	22,806	873	26.12	0.306
Northeast OR	HERMISTON	ARLINGTON	5K25	ARLINGTON	2,863	450,203	553	814.11	5.177
Northeast OR	HERMISTON	BLALOCK	5K40	BLALOCK	155	33,938	26	1305.32	5.962
Northeast OR	HERMISTON	CREEK	4K30	WILLOW CREEK	0	0	0	0.00	0.000
Northeast OR	HERMISTON	DALREED	4K40	SIM/TAG	110	53,020	92	576.30	1.196
Northeast OR	HERMISTON	DALREED	4K46	BOEING	32	6,350	170	37.35	0.188
Northeast OR	HERMISTON	HERMISTON	5W602	RURAL (HERMISTON	415	48,753	1,391	35.05	0.298
Northeast OR	HERMISTON	HINKLE	5W82	MEADOWS	210	35,913	380	94.51	0.553



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Northeast OR	HERMISTON	UMATILLA	5W658	UMATILLA	384	38,475	1,184	32.50	0.324
Northeast OR	HERMISTON	UMATILLA	5W660	MCNARY	412	57,247	916	62.50	0.450
Northeast OR	HERMISTON	UMATILLA	5W664	PORT FEEDER	1	91	49	1.85	0.020
Northeast OR	MILTON/FREEWATER	UMAPINE	5W105	UMAPINE FEEDER	804	75,472	999	75.55	0.805
Northeast OR	PENDLETON	ATHENA	5W703	CITY	84	17,625	864	20.40	0.097
Northeast OR	PENDLETON	ATHENA	5W705	HELIX	222	41,737	436	95.73	0.509
Northeast OR	PENDLETON	BUCKAROO	5W201	STATE HOSP.	840	62,173	412	150.91	2.039
Northeast OR	PENDLETON	BUCKAROO	5W202	REITH	722	80,165	1,535	52.23	0.470
Northeast OR	PENDLETON	BUCKAROO	5W203	MONTEE	1,637	329,204	1,648	199.76	0.993
Northeast OR	PENDLETON	PENDLETON	5W401	WEST HILLS	175	22,740	1,756	12.95	0.100
Northeast OR	PENDLETON	PENDLETON	5W402	HARRIS HTS	361	51,970	2,114	24.58	0.171
Northeast OR	PENDLETON	PENDLETON	5W403	MISSION	2,217	254,433	1,073	237.12	2.066
Northeast OR	PENDLETON	PENDLETON	7W452	NORTHWEST	8	2,142	525	4.08	0.015
Northeast OR	PENDLETON	PENDLETON	7W453	SOUTHWEST (PEND	359	70,785	337	210.05	1.065
Northeast OR	PENDLETON	PILOT ROCK	5W404	MILL (PILOT ROCK)	2	303	3	100.86	0.667
Northeast OR	PENDLETON	PILOT ROCK	5W406	PILOT ROCK CITY	1,796	278,983	1,408	198.14	1.276
Northeast OR	PENDLETON	WESTON NEW (OR)	5W7	SCOTTS FEEDER	354	31,353	465	67.43	0.761
Northeast OR	WALLA WALLA	UMAPINE	5W106	FERNDAL	849	64,378	1,360	47.34	0.624
South OR	GRANTS PASS	AGNESS AVE	5R172	SPALDING MILL	485	84,707	889	95.28	0.546
South OR	GRANTS PASS	AGNESS AVE	5R173	JONES CREEK	115	28,108	876	32.09	0.131
South OR	GRANTS PASS	AGNESS AVE	5R322	ANTEATER	34	7,344	971	7.56	0.035
South OR	GRANTS PASS	APPLEGATE	5R267	MURPHY	2,560	324,506	1,022	317.52	2.505
South OR	GRANTS PASS	APPLEGATE	5R278	HIGHWAY	3,741	571,605	1,625	351.76	2.302
South OR	GRANTS PASS	BEACON	5R104	SAVAGE ST	97	17,213	1,247	13.80	0.078
South OR	GRANTS PASS	BEACON	5R105	BEACON ST	131	23,980	831	28.86	0.158
South OR	GRANTS PASS	CAVE JUNCTION	5R52	FREE& EASY	640	235,710	2,435	96.80	0.263
South OR	GRANTS PASS	CAVE JUNCTION	5R53	ROUGH & READY	125	17,030	1,585	10.74	0.079
South OR	GRANTS PASS	CAVEJUNCTION	5R295	QUAIL	86	19,184	1,150	16.68	0.075
South OR	GRANTS PASS	CAVEJUNCTION	5R82	WASHINGTON	59	5,720	1,204	4.75	0.049
South OR	GRANTS PASS	CAVEJUNCTION	5R98	MANZANITA	23	5,438	595	9.14	0.039
South OR	GRANTS PASS	CAVEJUNCTION	5R99	CAVEJUNCTION	1,219	201,119	1,177	170.87	1.036
South OR	GRANTS PASS	DOWELL	5R331	DOVE	54	9,869	1,489	6.63	0.036
South OR	GRANTS PASS	DOWELL	5R334	DUCK	6,459	486,987	2,363	206.09	2.733
South OR	GRANTS PASS	EASY VALLEY	5R123	G STREET	6,299	322,523	2,007	160.70	3.139
South OR	GRANTS PASS	EASY VALLEY	5R125	ROGUE	591	107,597	1,702	63.22	0.347
South OR	GRANTS PASS	EASY VALLEY	5R259	CHINOOK	1,423	105,891	1,307	81.02	1.089

### Oregon 2013 Circuit Metrics (excluding major events)

OR Reliability Region	Op Area Name	Substation Name	Circuit Id	Circuit Name	Customers In Incident Sustained	Customer Minutes Lost for Incident	Circuit Customer Count	SAIDI	SAIFI
South OR	GRANTS PASS	FIELDER CREEK	4R33	ELK FDR.	67	14,307	1,627	8.79	0.041
South OR	GRANTS PASS	FIELDER CREEK	4R34	BEAR FDR	180	54,316	876	62.00	0.205
South OR	GRANTS PASS	GLENDALE SUBSTATION	5R133	GLENDALE	2,929	1,002,945	1,976	507.56	1.482
South OR	GRANTS PASS	GLENDALE SUBSTATION	5R143	INDUSTRIAL	509	156,351	695	224.96	0.732
South OR	GRANTS PASS	JEROME PRAIRIE	5R62	WILD PRAIRIE	2,014	199,939	1,640	121.91	1.228
South OR	GRANTS PASS	JEROME PRAIRIE	5R63	WOOD RIVER	7,269	1,712,820	1,606	1066.51	4.526
South OR	GRANTS PASS	MERLIN	5R232	MERLIN-HUGO	1,705	199,270	2,078	96.90	0.821
South OR	GRANTS PASS	MERLIN	5R234	PARADISE	1,278	106,407	1,186	89.72	1.078
South OR	GRANTS PASS	MERLIN	5R248	PLEASANT VALLEY	680	137,385	1,842	74.58	0.369
South OR	GRANTS PASS	MERLIN	5R251	BADGER	121	30,716	920	33.39	0.132
South OR	GRANTS PASS	NEW O'BRIEN	5R106	O'BRIEN	1,024	181,345	462	392.52	2.216
South OR	GRANTS PASS	PARK STREET (OR)	5R114	FRUITDALE	340	58,395	2,118	27.57	0.161
South OR	GRANTS PASS	PARK STREET (OR)	5R115	ALLEN CREEK	62	22,816	1,001	22.79	0.062
South OR	GRANTS PASS	PARK STREET (OR)	5R121	NEW HOPE	214	79,827	1,863	42.85	0.115
South OR	GRANTS PASS	PARK STREET (OR)	5R164	EXPRESS	3	825	320	2.58	0.009
South OR	GRANTS PASS	PARK STREET (OR)	5R169	PORTOLA	325	37,667	1,533	24.57	0.212
South OR	GRANTS PASS	PROVOLT	5R67	NORTH-SOUTH	1,709	368,284	1,399	263.25	1.222
South OR	GRANTS PASS	ROGUE RIVER	4R7	EVANS VALLEY	466	109,734	233	470.96	2.000
South OR	GRANTS PASS	ROGUE RIVER	5R77	SAVAGE/WIMMER	480	94,211	1,798	52.40	0.267
South OR	GRANTS PASS	ROGUE RIVER	5R78	ROCKY POINT (ROG)	113	19,148	1,068	17.93	0.106
South OR	GRANTS PASS	SELMA	5R65	DEER CREEK	163	35,483	1,236	28.71	0.132
South OR	KLAMATH FALLS	BEATTY	5L1	BEATTY	820	100,268	427	234.82	1.920
South OR	KLAMATH FALLS	BLV	5L14	TOWN (BLV)	617	32,897	459	71.67	1.344
South OR	KLAMATH FALLS	BONANZA (OR)	5L7	POE VALLEY	950	164,787	453	363.77	2.097
South OR	KLAMATH FALLS	BRYANT	5L2	GARY STREET	388	134,539	2,194	61.32	0.177
South OR	KLAMATH FALLS	BRYANT	5L3	WASHBURN	36	6,403	1,884	3.40	0.019
South OR	KLAMATH FALLS	BRYANT	5L4	SUMMERS LANE	3,101	316,306	2,046	154.60	1.516
South OR	KLAMATH FALLS	BRYANT	5L5	MOYINA HTS.	2,665	25,154	2,493	10.09	1.069
South OR	KLAMATH FALLS	CASEBEER SUB	4L16	LANGELL VLY	2,694	465,719	1,209	385.21	2.228
South OR	KLAMATH FALLS	CHILOQUIN	5L57	CRATER LAKE	1,977	320,429	1,110	288.68	1.781
South OR	KLAMATH FALLS	CHILOQUIN MARKET	5L37	WILLIAMSON	112	19,491	491	39.70	0.228
South OR	KLAMATH FALLS	DAIRY	5L42	SWAN LAKE	722	44,675	324	137.89	2.228
South OR	KLAMATH FALLS	DAIRY	5L43	DAIRY	1,139	72,283	492	146.92	2.315
South OR	KLAMATH FALLS	HAMAKER	5L55	KENO	637	64,180	1,764	36.38	0.361
South OR	KLAMATH FALLS	HAMAKER	5L56	MOUNTAIN	54	10,583	167	63.37	0.323
South OR	KLAMATH FALLS	HENLEY	5L58	HENLEY	731	41,410	237	174.72	3.084

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OR Reliability Region	Op Area Name	Substation Name	Circuit Id	Circuit Name	Customers In Incident Sustained	Customer Minutes Lost for Incident	Circuit Customer Count	SAIDI	SAIFI
South OR	KLAMATH FALLS	HENLEY	5L59	WEST	1,730	102,093	554	184.28	3.123
South OR	KLAMATH FALLS	HORNET	5L44	HOMEDALE	5,711	356,131	2,711	131.37	2.107
South OR	KLAMATH FALLS	HORNET	5L45	CRYSTAL SPR	5,436	278,209	1,503	185.10	3.617
South OR	KLAMATH FALLS	LAKEPORT	5L49	WOCUS	220	7,515	214	35.12	1.028
South OR	KLAMATH FALLS	LAKEPORT	5L54	SOUTH (LAKEPORT)	5,017	215,066	2,475	86.89	2.027
South OR	KLAMATH FALLS	LAKEPORT	5L61	JELDWEN	8	266	8	33.27	1.000
South OR	KLAMATH FALLS	MERRILL (OR)	5L26	LAKE (MERRILL)	2,686	123,138	1,032	119.32	2.603
South OR	KLAMATH FALLS	MERRILL (OR)	5L27	NORTH (MERRILL)	1,592	148,578	565	262.97	2.818
South OR	KLAMATH FALLS	MODOC	5L36	MODOC	491	86,328	1,000	86.33	0.491
South OR	KLAMATH FALLS	ROSS AVENUE	5L46	ELDORADO	13	695	1,393	0.50	0.009
South OR	KLAMATH FALLS	ROSS AVENUE	5L48	BROAD ST.	550	29,561	1,247	23.71	0.441
South OR	KLAMATH FALLS	RUNNING Y	4L50	ROCKY POINT FEED	588	200,173	1,495	133.90	0.393
South OR	KLAMATH FALLS	SHASTA WAY	7L25	SHASTA WAY	2	305	441	0.69	0.005
South OR	KLAMATH FALLS	SPRAGUE RIVER	5L8	SPRAGUE RIVER	597	24,211	515	47.01	1.159
South OR	KLAMATH FALLS	TEXUM	5L112	ANDERSON	17	1,112	1,241	0.90	0.014
South OR	KLAMATH FALLS	TEXUM	5L113	TOWER	1,567	153,237	333	460.17	4.706
South OR	KLAMATH FALLS	TEXUM	5L116	ALTAMONT	731	87,519	1,547	56.57	0.473
South OR	KLAMATH FALLS	TURKEY HILL	5L20	MALIN CITY	2,314	136,912	855	160.13	2.706
South OR	KLAMATH FALLS	TURKEY HILL	5L23	RURAL (TURKEY HILL)	1,010	89,859	333	269.85	3.033
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L12	ORINDALE	948	35,492	824	43.07	1.150
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L15	CALIFORNIA	2,850	163,997	1,401	117.06	2.034
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L16	MAIN ST (WEST SIDE)	118	3,003	118	25.45	1.000
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L17	PINE ST (WEST SIDE)	537	14,058	523	26.88	1.027
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L18	RIVERSIDE (WEST SIDE)	618	16,928	609	27.80	1.015
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L19	LAKE SHORE	305	7,799	304	25.65	1.003
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	8L10	CITY WTR PMP	1	25	1	25.45	1.000
South OR	LAKEVIEW	MILE-HI	5L104	INDUSTRIAL	830	20,038	766	26.16	1.084
South OR	LAKEVIEW	MILE-HI	5L105	BUSINESS	1,874	27,614	1,774	15.57	1.056
South OR	MEDFORD	ASHLAND (MTN.AVE., PUD)	5R245	VALLEY VIEW	4,116	122,685	998	122.93	4.124
South OR	MEDFORD	BEALL LANE	5R359	BEEHIVE	2	10	2	5.22	1.000
South OR	MEDFORD	BEALL LANE	5R361	BULLDOG	2,139	115,320	1,660	69.47	1.289
South OR	MEDFORD	BEALL LANE	5R364	BOBCAT	2,288	28,992	2,204	13.15	1.038
South OR	MEDFORD	BELKNAP	5R1	KOGAP	1,046	154,603	1,016	152.17	1.030
South OR	MEDFORD	BELKNAP	5R2	RIVERSIDE (BELKNAP)	2,669	145,001	680	213.24	3.925
South OR	MEDFORD	BELKNAP	5R3	BARNETT	231	41,418	1,562	26.52	0.148
South OR	MEDFORD	BELKNAP	5R47	STEWART	312	33,715	2,121	15.90	0.147

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South OR	MEDFORD	BROOKHURST	5R118	SPRINGBROOK	113	24,234	1,681	14.42	0.067
South OR	MEDFORD	BROOKHURST	5R135	ROBERTS (BROOKHURST)	41	4,936	1,487	3.32	0.028
South OR	MEDFORD	BROOKHURST	5R32	ROXY	164	39,176	1,656	23.66	0.099
South OR	MEDFORD	BROOKHURST	5R33	CRATER LAKE	113	34,985	1,633	21.42	0.069
South OR	MEDFORD	BROOKHURST	5R75	SUNRISE (BROOKHURST)	1,256	78,090	1,184	65.95	1.061
South OR	MEDFORD	CAMPBELL	5R218	PHOENIX	2,996	267,676	1,550	172.69	1.933
South OR	MEDFORD	CAMPBELL	5R227	FERN VALLEY	1,685	74,284	1,312	56.62	1.284
South OR	MEDFORD	CAMPBELL	5R312	COBRA	116	9,431	1,529	6.17	0.076
South OR	MEDFORD	DODGE BRIDGE	4R1	SALMON	900	297,279	1,654	179.73	0.544
South OR	MEDFORD	DODGE BRIDGE	4R35	MEADOWS ROAD	1,721	96,070	1,372	70.02	1.254
South OR	MEDFORD	FOOTHILLS	5R38	HOSPITAL	45	10,864	771	14.09	0.058
South OR	MEDFORD	FOOTHILLS	5R39	PIERCE ROAD	361	72,072	1,156	62.35	0.312
South OR	MEDFORD	FRACLEY	5R87	TABLE ROCK	881	289,506	518	558.89	1.701
South OR	MEDFORD	FRACLEY	5R88	DODGE BRIDGE	19	1,821	387	4.71	0.049
South OR	MEDFORD	GOLD HILL	5R103	GOLD HILL	1,410	180,609	2,039	88.58	0.692
South OR	MEDFORD	GRIFFIN CREEK	5R204	HULL RD	2,619	439,955	2,580	170.53	1.015
South OR	MEDFORD	GRIFFIN CREEK	5R206	GRIFFIN CREEK	2,159	322,191	1,704	189.08	1.267
South OR	MEDFORD	HUMBURG CREEK	5R287	HUMBURG CREEK	817	65,631	682	96.23	1.198
South OR	MEDFORD	MEDFORD	5R21	MELROSE	17	4,433	1,623	2.73	0.010
South OR	MEDFORD	MEDFORD	5R23	SPRING ST.	178	57,668	1,616	35.69	0.110
South OR	MEDFORD	MEDFORD	5R250	BIG Y	323	85,549	1,876	45.60	0.172
South OR	MEDFORD	MEDFORD	5R253	APPLE	57	12,581	1,130	11.13	0.050
South OR	MEDFORD	MEDFORD	5R257	PEAR	6	1,919	601	3.19	0.010
South OR	MEDFORD	MEDFORD	5R659	MCLEAN	168	33,039	691	47.81	0.243
South OR	MEDFORD	NEW JACKSONVILLE SUB-DISTRICT	5R284	STAGE RD	1,903	106,981	2,099	50.97	0.907
South OR	MEDFORD	NEW JACKSONVILLE SUB-DISTRICT	5R285	JACKSONVILLE HWY	4,276	108,318	2,099	51.60	2.037
South OR	MEDFORD	OAK KNOLL	5R55	SISKIYOU	3,138	397,218	1,612	246.41	1.947
South OR	MEDFORD	PROSPECT CENTRAL	5R40	NEW CASCADE	685	152,247	351	433.75	1.952
South OR	MEDFORD	RED BLANKET	7R5	PROSPECT	16	1,629	403	4.04	0.040
South OR	MEDFORD	ROXY ANN	5R350	St. Bernard	277	39,759	1,059	37.54	0.262
South OR	MEDFORD	ROXY ANN	5R354	RACCOON	1,383	43,458	1,335	32.55	1.036
South OR	MEDFORD	RUCH	5R68	APPLEGATE	1,622	145,812	918	158.84	1.767
South OR	MEDFORD	RUCH	5R69	RUCH	630	42,673	555	76.89	1.135
South OR	MEDFORD	SAGE ROAD (OR)	5R209	TIMBER PROD	1	5	2	2.61	0.500
South OR	MEDFORD	SAGE ROAD (OR)	5R211	COLUMBUS	2,240	55,647	1,994	27.91	1.123
South OR	MEDFORD	SAGE ROAD (OR)	5R226	BOISE	924	32,984	856	38.53	1.079

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South OR	MEDFORD	SAGE ROAD (OR)	5R27	MCANDREWS	120	626	120	5.22	1.000
South OR	MEDFORD	SAGE ROAD (OR)	5R28	ROSS	1,767	16,547	1,717	9.64	1.029
South OR	MEDFORD	SAGE ROAD (OR)	5R29	EDWARDS	779	4,969	766	6.49	1.017
South OR	MEDFORD	SCENIC	5R174	UPTON	4,193	182,765	2,019	90.52	2.077
South OR	MEDFORD	SCENIC	5R180	HEAD RD	70	5,955	1,415	4.21	0.049
South OR	MEDFORD	SCENIC	5R182	TAYLOR RD	284	50,762	1,478	34.35	0.192
South OR	MEDFORD	SCENIC	5R184	CHENEY	94	13,659	1,454	9.39	0.065
South OR	MEDFORD	STEVENS ROAD	4R13	HENRY MILLER	1,505	292,374	1,368	213.72	1.100
South OR	MEDFORD	STEVENS ROAD	4R17	Stingray	913	168,190	2,483	67.74	0.368
South OR	MEDFORD	STEVENS ROAD	4R41	ANTELOPE	3,113	455,591	1,910	238.53	1.630
South OR	MEDFORD	TAKELIMA	4R9	LOST CK. (TAKELIMA	11,927	2,449,840	2,651	924.12	4.499
South OR	MEDFORD	TALENT	5R237	TALENT	1,525	234,232	2,525	92.77	0.604
South OR	MEDFORD	TALENT	5R238	ANDERSON CRK	929	82,467	1,650	49.98	0.563
South OR	MEDFORD	TALENT	5R239	HARTLEY ROAD	400	77,178	1,540	50.12	0.260
South OR	MEDFORD	TALENT	5R240	NORTH HWY	202	21,100	1,079	19.55	0.187
South OR	MEDFORD	TOLO	5R90	TBL ROCK LBR	30	2,036	165	12.34	0.182
South OR	MEDFORD	TOLO	5R91	SAMS VALLEY	1,954	457,618	658	695.47	2.970
South OR	MEDFORD	TOLO	5R92	KIRTLAND RD	82	31,390	208	150.91	0.394
South OR	MEDFORD	VILAS ROAD	5R110	MCLAUGHLIN	1,172	114,823	966	118.86	1.213
South OR	MEDFORD	VILAS ROAD	5R146	KING CENTER	36	2,829	1,408	2.01	0.026
South OR	MEDFORD	VILAS ROAD	5R305	WEBFOOT	0	0	1,016	0.00	0.000
South OR	MEDFORD	WHITE CITY	5R11	EAGLE POINT	2,945	296,366	1,448	204.67	2.034
South OR	MEDFORD	WHITE CITY	5R12	INDUSTRIAL	0	0	33	0.00	0.000
South OR	MEDFORD	WHITE CITY	5R13	FIR-PLY	0	0	24	0.00	0.000
South OR	MEDFORD	WHITE CITY	5R14	AGATE	229	3,383	107	31.62	2.140
South OR	MEDFORD	WHITE CITY	5R19	3M	7	481	95	5.07	0.074
South OR	MEDFORD	WHITE CITY	5R66	4 CORNERS	0	0	1,657	0.00	0.000
South OR	MEDFORD	WHITE CITY	5R76	AVE C	3	2,051	90	22.79	0.033
South OR	ROSEBURG/MYRTLECREEK	CARNES	5U44	RND PRARIE	234	29,963	417	71.85	0.561
South OR	ROSEBURG/MYRTLECREEK	CLEARWATER #1 SUB	6U17	BRIGGS	14	3,971	3	1323.72	4.667
South OR	ROSEBURG/MYRTLECREEK	CLEARWATER #2 SUB	6U33	CLEARWATER	210	9,552	103	92.74	2.039
South OR	ROSEBURG/MYRTLECREEK	CLOAKE	4U37	RUSA	2	433	1	433.25	2.000
South OR	ROSEBURG/MYRTLECREEK	CLOAKE	4U38	HARVARD	4,688	857,044	3,439	249.21	1.363
South OR	ROSEBURG/MYRTLECREEK	CLOAKE	4U39	GOEDECK	2,476	515,618	1,074	480.09	2.305
South OR	ROSEBURG/MYRTLECREEK	GARDEN VALLEY	4U80	EDENBOWER	2	230	657	0.35	0.003
South OR	ROSEBURG/MYRTLECREEK	GARDEN VALLEY	4U81	VALLEY	191	24,183	1,322	18.29	0.144

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South OR	ROSEBURG/MYRTLECREEK	GAZLEY	5U46	CANYONVILLE	62	10,300	426	24.18	0.146
South OR	ROSEBURG/MYRTLECREEK	GAZLEY	5U52	BEALS CREEK FEED	1,869	519,786	910	571.19	2.054
South OR	ROSEBURG/MYRTLECREEK	GLIDE SUBSTATION	5U83	IDLEYLD	3,735	1,125,731	1,004	1121.25	3.720
South OR	ROSEBURG/MYRTLECREEK	GLIDE SUBSTATION	5U84	LITTLE RIVER	4,843	1,724,191	1,354	1273.41	3.577
South OR	ROSEBURG/MYRTLECREEK	GREEN SUBSTATION	5U32	SAFARI	1,036	235,017	2,281	103.03	0.454
South OR	ROSEBURG/MYRTLECREEK	GREEN SUBSTATION	5U33	SUNNYSLOPE	333	38,485	1,453	26.49	0.229
South OR	ROSEBURG/MYRTLECREEK	ILLAHEE FLATS	6U13	ILLAHEE FLATS SINI	52	6,806	26	261.78	2.000
South OR	ROSEBURG/MYRTLECREEK	LEMOLO # 1	5U920	DIAMOND LAKE	1,361	250,479	179	1399.33	7.603
South OR	ROSEBURG/MYRTLECREEK	MYRTLE CREEK	5U76	SUPER Y	486	76,108	1,566	48.60	0.310
South OR	ROSEBURG/MYRTLECREEK	MYRTLE CREEK	5U77	BOOMER HILL	1,360	148,041	2,335	63.40	0.582
South OR	ROSEBURG/MYRTLECREEK	OAKLAND (OR)	5U11	UMPQUA	303	23,358	1,368	17.07	0.221
South OR	ROSEBURG/MYRTLECREEK	OAKLAND (OR)	5U12	STAGECOACH	7	702	551	1.27	0.013
South OR	ROSEBURG/MYRTLECREEK	RIDDLE	5U1	TRI CITY	23	4,127	1,022	4.04	0.023
South OR	ROSEBURG/MYRTLECREEK	RIDDLE	5U2	COW CREEK	150	17,531	1,611	10.88	0.093
South OR	ROSEBURG/MYRTLECREEK	RIDDLE	5U3	HANNA	17	5,366	270	19.87	0.063
South OR	ROSEBURG/MYRTLECREEK	ROSEBURG	4U10	DIAMOND	6,199	398,108	2,503	159.05	2.477
South OR	ROSEBURG/MYRTLECREEK	ROSEBURG	4U22	DIXON	2,671	207,619	1,104	188.06	2.419
South OR	ROSEBURG/MYRTLECREEK	ROSEBURG	4U5	DOUGLAS	4,381	176,295	2,098	84.03	2.088
South OR	ROSEBURG/MYRTLECREEK	SLIDE CREEK	6U76	SLIDE CREEK CAMF	6	427	6	71.13	1.000
South OR	ROSEBURG/MYRTLECREEK	SODA SPRINGS HE PLT	6U1	DRY CREEK	1	39	24	1.65	0.042
South OR	ROSEBURG/MYRTLECREEK	SOUTHGATE	4U30	SHADY POINT	51	5,589	1,598	3.50	0.032
South OR	ROSEBURG/MYRTLECREEK	SOUTHGATE	4U31	BOOTH	127	12,581	1,375	9.15	0.092
South OR	ROSEBURG/MYRTLECREEK	STEAMBOAT	6U18	STEAMBOAT	44	5,759	22	261.78	2.000
South OR	ROSEBURG/MYRTLECREEK	SUTHERLIN	5U35	NON-PAREIL	266	15,584	1,342	11.61	0.198
South OR	ROSEBURG/MYRTLECREEK	SUTHERLIN	5U36	DEADY	764	59,401	1,326	44.80	0.576
South OR	ROSEBURG/MYRTLECREEK	SUTHERLIN	5U56	Industrial	952	130,383	474	275.07	2.008
South OR	ROSEBURG/MYRTLECREEK	TILLER	5U89	JACKSON CRK	684	62,873	322	195.26	2.124
South OR	ROSEBURG/MYRTLECREEK	TOKETEE	8U12	TOKETEE CITY	24	2,217	19	116.69	1.263
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	4U18	WILBUR	147	27,182	1,667	16.31	0.088
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	5U15	NEWTON CREEK	670	37,614	1,760	21.37	0.381
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	5U17	FISHER	1,003	489,632	746	656.34	1.345
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	5U19	EVANS	71	5,905	749	7.88	0.095
South OR	ROSEBURG/MYRTLECREEK	WINSTON	5U48	BROCKWAY	133	18,334	882	20.79	0.151
South OR	ROSEBURG/MYRTLECREEK	WINSTON	5U49	DILLARD	270	58,059	1,478	39.28	0.183
WlmVly	ALBANY	HAZELWOOD	4M335	WEST HIGH	281	21,256	1,487	14.29	0.189
WlmVly	ALBANY	HAZELWOOD	4M336	RIVERVIEW (HAZEL)	914	109,164	1,231	88.68	0.742

### Oregon 2013 Circuit Metrics (excluding major events)

OR Reliability Region	Op Area Name	Substation Name	Circuit Id	Circuit Name	Customers In Incident Sustained	Customer Minutes Lost for Incident	Circuit Customer Count	SAIDI	SAIFI
WimVly	ALBANY	JEFFERSON (OR)	4M117	MARION	1,269	184,919	742	249.22	1.710
WimVly	ALBANY	JEFFERSON (OR)	4M125	MINT	9,198	752,942	2,568	293.20	3.582
WimVly	ALBANY	MURDER CREEK	4M243	SCRAVEL HILL	5,398	1,370,502	3,776	362.95	1.430
WimVly	ALBANY	MURDER CREEK	4M245	RURAL NW	2,150	189,642	1,857	102.12	1.158
WimVly	ALBANY	MURDER CREEK	4M250	INDUSTRIAL	98	5,231	1,267	4.13	0.077
WimVly	ALBANY	OREMET	4M295	OAK CREEK	0	0	111	0.00	0.000
WimVly	ALBANY	OREMET	4M296	ROGERSDALE	2,063	478,893	3,129	153.05	0.659
WimVly	ALBANY	OREMET	5M19	OREMET	1	25	3	8.18	0.333
WimVly	ALBANY	QUEEN AVE	4M217	SANTIAM	79	10,058	2,000	5.03	0.040
WimVly	ALBANY	QUEEN AVE	4M258	HILL STREET	381	59,938	2,131	28.13	0.179
WimVly	ALBANY	QUEEN AVE	4M261	WAVERLY	4,439	252,036	3,362	74.97	1.320
WimVly	ALBANY	QUEEN AVE	4M262	GEARY STREET	74	10,859	2,608	4.16	0.028
WimVly	ALBANY	VINE STREET	4M15	FERRY	358	24,681	2,229	11.07	0.161
WimVly	ALBANY	VINE STREET	4M16	WATER STREET	5,549	346,776	3,790	91.50	1.464
WimVly	CORVALLIS	BUCHANAN	4M130	HEWLETT PACKARD	2,758	463,713	2,679	173.09	1.029
WimVly	CORVALLIS	BUCHANAN	4M133	PEORIA	4,412	430,933	2,489	173.14	1.773
WimVly	CORVALLIS	BUCHANAN	4M134	N. NINTH ST.	3,138	372,048	2,617	142.17	1.199
WimVly	CORVALLIS	DIXON	7M26	FOURTH ST.	203	16,269	201	80.94	1.010
WimVly	CORVALLIS	DIXON	7M29	SECOND ST.	328	25,798	305	84.58	1.075
WimVly	CORVALLIS	GRANT	4M265	HIGH SCHOOL	83	4,228	2,539	1.67	0.033
WimVly	CORVALLIS	GRANT	4M266	CHINTIMINI	147	9,544	2,539	3.76	0.058
WimVly	CORVALLIS	GRANT	4M268	KINGS ROAD	5,954	1,380,785	2,556	540.21	2.329
WimVly	CORVALLIS	GRANT	4M269	29TH STREET	12,169	443,115	3,287	134.81	3.702
WimVly	CORVALLIS	HILLVIEW	4M180	WEST HILLS	43	4,126	1,709	2.41	0.025
WimVly	CORVALLIS	HILLVIEW	4M181	PHILOMATH	31	3,118	651	4.79	0.048
WimVly	CORVALLIS	HILLVIEW	4M182	SUNSET	109	14,663	1,535	9.55	0.071
WimVly	CORVALLIS	HILLVIEW	4M185	PLYMOUTH	127	12,788	2,245	5.70	0.057
WimVly	CORVALLIS	MARYS RIVER	4M151	GREENBERRY	12,631	980,411	3,612	271.43	3.497
WimVly	CORVALLIS	MARYS RIVER	4M152	AVERY	412	42,535	191	222.69	2.157
WimVly	CORVALLIS	MARYS RIVER	4M153	GALLAGHER	323	28,330	161	175.96	2.006
WimVly	COTTAGE GROVE/J CITY	COBURG	4M220	DETERING	18	1,628	529	3.08	0.034
WimVly	COTTAGE GROVE/J CITY	GOSHEN (OR)	4M360	GOSHEN FDR	97	19,880	1,660	11.98	0.058
WimVly	COTTAGE GROVE/J CITY	HARRISBURG SUB	4M400	TERRITORIAL	667	185,795	1,907	97.43	0.350
WimVly	COTTAGE GROVE/J CITY	JUNCTION CITY	4M102	6TH STREET	312	53,624	1,174	45.68	0.266
WimVly	COTTAGE GROVE/J CITY	JUNCTION CITY	4M99	PRAIRIE ROAD	912	251,866	935	269.37	0.975
WimVly	COTTAGE GROVE/J CITY	LANCASTER	4M209	MONROE	560	118,198	1,128	104.79	0.496

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WimVly	COTTAGE GROVE/J.CITY	VILLAGE GREEN	4M84	NORTH SIDE	4,997	488,104	2,394	203.89	2.087
WimVly	COTTAGE GROVE/J.CITY	VILLAGE GREEN	4M86	MADISON	197	64,525	1,598	40.38	0.123
WimVly	DALLAS/INDEPENDENCE	DALLAS	4M100	RURAL (DALLAS)	664	123,898	4,397	28.18	0.151
WimVly	DALLAS/INDEPENDENCE	DALLAS	4M201	INDUSTRIAL	4	2,221	35	63.46	0.114
WimVly	DALLAS/INDEPENDENCE	DALLAS	4M202	ELLENDALE	789	74,828	2,896	25.84	0.272
WimVly	DALLAS/INDEPENDENCE	DALLAS	4M238	DALLAS	1,546	402,603	2,315	173.91	0.668
WimVly	DALLAS/INDEPENDENCE	INDEPENDENCE	4M22	RICKREAL	4,435	228,116	1,984	114.98	2.235
WimVly	DALLAS/INDEPENDENCE	INDEPENDENCE	4M25	BUENA VISTA	11,601	853,148	3,097	275.48	3.746
WimVly	LEBANON	BROWNSVILLE	4M17	CALAPOOIA	4,385	144,712	1,919	75.41	2.285
WimVly	LEBANON	CROWFOOT	4M204	CROWFOOT	1,785	203,133	1,532	132.59	1.165
WimVly	LEBANON	CROWFOOT	4M206	US PLYWOOD (LEBANON)	4,764	726,120	1,766	411.17	2.698
WimVly	LEBANON	LEBANON	4M61	TANGENT	5,199	99,178	2,477	40.04	2.099
WimVly	LEBANON	LEBANON	4M62	RALSTON	4,234	78,423	2,026	38.71	2.090
WimVly	LEBANON	LEBANON	4M63	TENNESSEE	4,321	296,416	1,851	160.14	2.334
WimVly	LEBANON	LEBANON	4M79	CROWN Z	1,032	39,820	990	40.22	1.042
WimVly	LEBANON	SWEET HOME	4M37	HOLLEY	5,362	697,371	2,054	339.52	2.611
WimVly	LEBANON	SWEET HOME	4M38	NARROWS	1,608	292,747	993	294.81	1.619
WimVly	LEBANON	SWEET HOME	4M93	AMES CREEK	1,774	135,820	1,710	79.43	1.037
WimVly	LEBANON	SWEET HOME	4M94	FOSTER	7,512	1,739,552	2,316	751.10	3.244
WimVly	STAYTON	NEW LYONS	4M120	MILL CITY	5,355	593,236	1,967	301.59	2.722
WimVly	STAYTON	NEW LYONS	4M70	MEHAMA	2,529	315,553	997	316.50	2.537
WimVly	STAYTON	NEW STAYTON	4M19	AUMSVILLE	767	191,106	3,140	60.86	0.244
WimVly	STAYTON	NEW STAYTON	4M353	WEST STAYTON	2,394	819,568	3,448	237.69	0.694
WimVly	STAYTON	NEW STAYTON	4M370	CASCADE	7,040	370,415	1,651	224.36	4.264
WimVly	STAYTON	NEW STAYTON	4M50	3RD STREET	62	12,258	952	12.88	0.065
WimVly	STAYTON	SCIO	5M126	THOMAS	6,657	625,477	1,603	390.19	4.153



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Central OR	BEND/REDMOND	BEND	5D10	PORTLAND AVE	360	25,526	2,293	11.13	0.157
Central OR	BEND/REDMOND	BEND	5D11	GLEN VISTA	33	6,970	970	7.19	0.034
Central OR	BEND/REDMOND	BEND	5D12	DIVISION ST.	13	749	221	3.39	0.059
Central OR	BEND/REDMOND	BEND	5D196	MALLARD	260	34,021	1,483	22.94	0.175
Central OR	BOND/REDMOND	BOND STREET	5D411	BACHELOR	1,374	319,876	1,670	191.54	0.823
Central OR	BOND/REDMOND	BOND STREET	5D418	BLAKELY	6	495	1,266	0.39	0.005
Central OR	BOND/REDMOND	CHINA HAT	5D140	LAVA (CHINA HAT)	1,300	283,645	2,306	123.00	0.564
Central OR	BOND/REDMOND	CHINA HAT	5D142	HIGH DESERT	3,366	422,668	1,581	267.34	2.129
Central OR	BOND/REDMOND	CHINA HAT	5D144	D.R.W.	1,367	307,038	2,411	127.35	0.567
Central OR	BOND/REDMOND	CLEVELAND AVE.	5D30	ARROWHEAD	4	422	885	0.48	0.005
Central OR	BOND/REDMOND	CLEVELAND AVE.	5D35	WICKIUP	15	910	962	0.95	0.016
Central OR	BOND/REDMOND	CLEVELAND AVE.	5D38	TOMAHAWK	355	83,157	1,400	59.40	0.254
Central OR	BOND/REDMOND	CLEVELAND AVE.	5D94	TEEPEE	327	66,804	2,896	23.07	0.113
Central OR	BOND/REDMOND	CLEVELAND AVE.	5D96	OBSIDIAN	145	13,834	784	17.65	0.185
Central OR	BOND/REDMOND	CLEVELAND AVE.	5D98	HUCKLEBERRY	82	8,174	1,315	6.22	0.062
Central OR	BOND/REDMOND	CROOKED RIVER RANCH	4D131	CANYON	1,784	668,505	1,740	384.20	1.025
Central OR	BOND/REDMOND	CROOKED RIVER RANCH	4D30	CROOKED R.R.	920	330,946	762	434.31	1.207
Central OR	BOND/REDMOND	DESCHUTES	5D184	PRONGHORN	1,307	322,191	1,115	288.96	1.172
Central OR	BOND/REDMOND	DESCHUTES	5D2	DESCHUTES S	1,202	287,213	961	298.87	1.251
Central OR	BOND/REDMOND	HUNTERS CIRCLE	5D192	Mackinaw	773	178,591	613	291.34	1.261
Central OR	BOND/REDMOND	OVERPASS	5D104	AWBREY	687	93,459	674	138.66	1.019
Central OR	BOND/REDMOND	OVERPASS	5D106	NEZ PERCE	2,865	397,348	2,625	151.37	1.091
Central OR	BOND/REDMOND	OVERPASS	5D120	CHINOOK	1,375	192,077	1,301	147.64	1.057
Central OR	BOND/REDMOND	OVERPASS	5D128	PAIUTE	1,868	261,635	1,737	150.62	1.075
Central OR	BOND/REDMOND	OVERPASS	5D155	APACHE	4,004	495,426	1,801	275.08	2.223
Central OR	BOND/REDMOND	PILOT BUTTE	5D261	KLONDIKE	1,434	219,505	2,844	77.18	0.504
Central OR	BOND/REDMOND	PILOT BUTTE	5D263	DRAKE FEEDER	124	19,450	2,095	9.28	0.059
Central OR	BOND/REDMOND	REDMOND	5D21	SOUTH (REDMOND)	0	0	717	0.00	0.000
Central OR	BOND/REDMOND	REDMOND	5D22	INDUSTRIAL	160	19,978	1,449	13.79	0.110
Central OR	BOND/REDMOND	REDMOND	5D223	TETHEROW	4	372	818	0.45	0.005
Central OR	BOND/REDMOND	REDMOND	5D226	CLINE FALLS	435	58,099	1,454	39.96	0.299
Central OR	BOND/REDMOND	REDMOND	5D227	WINDSOR	1,108	68,435	2,677	25.56	0.414
Central OR	BOND/REDMOND	REDMOND	5D228	CITY	118	21,123	1,334	15.83	0.088
Central OR	BOND/REDMOND	REDMOND	5D229	JUNIPER	80	32,893	416	79.07	0.192
Central OR	BOND/REDMOND	SHEVLIN PARK	5D238	WOLVERINE (SHP)	162	22,189	2,746	8.08	0.059
Central OR	BOND/REDMOND	SHEVLIN PARK	5D241	BADGER (SHP)	312	59,649	2,910	20.50	0.107

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Central OR	BEND/REDMOND	SHEVLIN PARK	5D243	Black Bear	69	21,412	537	39.87	0.128
Central OR	BEND/REDMOND	YEW AVENUE	5D322	BIRDIE	369	113,212	1,437	78.78	0.257
Central OR	BEND/REDMOND	YEW AVENUE	5D323	FAIRWAY	15	2,623	391	6.71	0.038
Central OR	BEND/REDMOND	YEW AVENUE	5D325	EAGLE	49	4,455	2,365	1.88	0.021
Central OR	MADRAS	CHERRY LANE	5D295	7 PEAKS	6	1,506	146	10.31	0.041
Central OR	MADRAS	CULVER	5D5	CULVER	5,720	1,113,449	1,774	627.65	3.224
Central OR	MADRAS	MADRAS	5D52	MADRAS RURAL	1,204	45,714	1,027	44.51	1.172
Central OR	MADRAS	MADRAS	5D53	AGATE	150	24,607	1,321	18.63	0.114
Central OR	MADRAS	MADRAS	5D57	QUARTZ	83	9,504	1,421	6.69	0.058
Central OR	MADRAS	MADRAS	5D61	MADRAS CITY	430	58,923	1,333	44.20	0.323
Central OR	MADRAS	POWELL BUTTE	5D1	POWELL BUTTE	155	24,945	606	41.16	0.256
Central OR	MADRAS	PRINEVILLE	5D126	RIMROCK	403	57,516	2,240	25.68	0.180
Central OR	MADRAS	PRINEVILLE	5D167	NORTHVILLE	227	35,372	1,260	28.07	0.180
Central OR	MADRAS	PRINEVILLE	5D25	OCHOCO	835	120,195	989	121.53	0.844
Central OR	MADRAS	PRINEVILLE	5D47	MC KAY (PRINEVILLE)	100	22,599	1,649	13.70	0.061
Central OR	MADRAS	PRINEVILLE	5D48	LAMONTA	28	4,637	643	7.21	0.044
Central OR	MADRAS	PRINEVILLE	5D69	GRIMES FLAT	2,545	343,210	1,597	214.91	1.594
Central OR	MADRAS	WARM SPRINGS	4D68	WARM SPRINGS (O)	1,391	205,394	1,084	189.48	1.283
CoastPlus	CLATSOP (ASTORIA)	CANNON BEACH	5A10	HAYSTACK	644	40,564	1,535	26.43	0.420
CoastPlus	CLATSOP (ASTORIA)	CANNON BEACH	5A8	ECOLA	1,459	92,689	1,260	73.56	1.158
CoastPlus	CLATSOP (ASTORIA)	FERN HILL SUB	5A51	JOHN DAY	694	68,293	261	261.66	2.659
CoastPlus	CLATSOP (ASTORIA)	FERN HILL SUB	5A52	SCANDINAVIAN	814	177,294	105	1688.52	7.752
CoastPlus	CLATSOP (ASTORIA)	KNAPPA SVENSEN	5A92	SVENSEN	536	42,692	701	60.90	0.765
CoastPlus	CLATSOP (ASTORIA)	KNAPPA SVENSEN	5A93	BRADWOOD	391	87,701	941	93.20	0.416
CoastPlus	CLATSOP (ASTORIA)	SEASIDE	5A80	GROVE	1,097	28,151	2,363	11.91	0.464
CoastPlus	CLATSOP (ASTORIA)	SEASIDE	5A81	CENTRAL	89	7,905	1,639	4.82	0.054
CoastPlus	CLATSOP (ASTORIA)	SEASIDE	5A82	NECANICUM	4,025	121,459	1,194	101.72	3.371
CoastPlus	CLATSOP (ASTORIA)	SEASIDE	5A83	GEARHART	4,815	375,983	3,107	121.01	1.550
CoastPlus	CLATSOP (ASTORIA)	WARRENTON	5A15	CITY	500	87,724	1,808	48.52	0.277
CoastPlus	CLATSOP (ASTORIA)	WARRENTON	5A16	MILL (WARRENTON)	18	1,806	523	3.45	0.034
CoastPlus	CLATSOP (ASTORIA)	WARRENTON	5A20	SOUTH (WARRENTON)	1,351	185,062	1,523	121.51	0.887
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A202	PORT DOCK	80	7,700	1,230	6.26	0.065
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A204	MOO COW	1,249	52,359	1,132	46.25	1.103
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A205	FIFTH STREET	22	989	955	1.04	0.023
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A206	YOUNGS BAY #6	0	0	330	0.00	0.000
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A210	YOUNGS BAY #10	133	14,879	1,276	11.66	0.104

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CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A211	OLNEY	1,808	260,749	974	267.71	1.856
CoastPlus	CLATSOP (ASTORIA)	YOUNGS BAY	5A213	INDUSTRIAL	112	18,229	1,354	13.46	0.083
CoastPlus	COOS BAY/COQUILLE	BANDON TIE (BPA)	L804	BANDON	97	13,081	736	17.77	0.132
CoastPlus	COOS BAY/COQUILLE	COOS RIVER	4C106	COOS RIVER	4,481	1,425,437	1,402	1016.72	3.196
CoastPlus	COOS BAY/COQUILLE	COQUILLE	4C41	HENRY STREET	291	26,094	1,773	14.72	0.164
CoastPlus	COOS BAY/COQUILLE	COQUILLE	4C42	TERRES HGHTS	4,163	237,845	1,625	146.37	2.562
CoastPlus	COOS BAY/COQUILLE	COQUILLE	4C43	INDUSTRIAL	159	13,033	179	72.81	0.888
CoastPlus	COOS BAY/COQUILLE	EMPIRE NEW	4C108	EMPIRE	1,825	61,581	1,747	35.25	1.045
CoastPlus	COOS BAY/COQUILLE	EMPIRE NEW	4C89	SCOTT	1,445	45,581	1,423	32.03	1.015
CoastPlus	COOS BAY/COQUILLE	EMPIRE NEW	4C90	CHARLESTON	4,669	516,116	2,186	236.10	2.136
CoastPlus	COOS BAY/COQUILLE	JORDAN POINT	5C6	SAND DUNES (JORDAN POINT)	1	358	30	11.94	0.033
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	4C48	CITY CENTER	1,690	735,378	1,598	460.19	1.058
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	4C49	EASTSIDE	833	362,235	800	452.79	1.041
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	4C5	GEORGIA-PAC	117	45,649	103	443.19	1.136
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	4C50	BUNKERHILL	9,564	2,394,293	1,911	1252.90	5.005
CoastPlus	COOS BAY/COQUILLE	LOCKHART STREET	4C97	ENGLEWOOD	1,473	665,437	1,421	468.29	1.037
CoastPlus	COOS BAY/COQUILLE	MYRTLE POINT	4C36	NORTH (MYRTLE POINT)	34	8,456	362	23.36	0.094
CoastPlus	COOS BAY/COQUILLE	MYRTLE POINT	4C37	MAPLE STREET	2,191	426,470	2,204	193.50	0.994
CoastPlus	COOS BAY/COQUILLE	STATE STREET	4C112	WOODLAND	302	35,817	1,874	19.11	0.161
CoastPlus	COOS BAY/COQUILLE	STATE STREET	4C66	BAYSHORE	1,703	183,436	1,728	106.15	0.986
CoastPlus	COOS BAY/COQUILLE	STATE STREET	4C67	INDUSTRIAL	2,455	430,301	2,280	188.73	1.077
CoastPlus	COOS BAY/COQUILLE	STATE STREET	4C68	BANGOR	2,151	143,941	1,763	80.73	1.206
CoastPlus	HOOD RIVER	GORDON HOLLOW	4K1	SHERMAN 208	936	16,178	448	36.11	2.089
CoastPlus	HOOD RIVER	GRASS VALLEY	6K1	KENT	131	3,129	64	48.88	2.047
CoastPlus	HOOD RIVER	GRASS VALLEY	8K4	GRASS VALLEY CIT	202	3,785	100	37.85	2.020
CoastPlus	HOOD RIVER	HOOD RIVER	5K37	RESIDENTIAL	160	7,071	2,014	3.51	0.079
CoastPlus	HOOD RIVER	HOOD RIVER	5K43	BELMONT	2,040	235,707	1,109	212.54	1.839
CoastPlus	HOOD RIVER	HOOD RIVER	5K44	NORTH (HOOD RIVER)	479	22,594	1,753	12.89	0.273
CoastPlus	HOOD RIVER	HOOD RIVER	5K70	EASTSIDE	374	61,387	1,036	59.25	0.361
CoastPlus	HOOD RIVER	HOOD RIVER	5K74	SOUTH (HOOD RIVER)	276	27,370	1,619	16.91	0.170
CoastPlus	HOOD RIVER	KENWOOD	5K50	OAKGROVE	39	12,082	721	16.76	0.054
CoastPlus	HOOD RIVER	MORO	8K6	MORO	239	3,948	118	33.45	2.025
CoastPlus	HOOD RIVER	WASCO	7K1	WASCO	555	9,435	277	34.06	2.004
CoastPlus	LINCOLN CITY	DEVILS LAKE	4A310	INLAND FEEDER	2,144	156,546	1,850	84.62	1.159
CoastPlus	LINCOLN CITY	DEVILS LAKE	4A312	OCEAN	3,394	259,085	2,897	89.43	1.172
CoastPlus	LINCOLN CITY	DEVILS LAKE	4A316	LAKE (DEVILS LAKE)	6,145	951,751	4,475	212.68	1.373

### Oregon 2013 Circuit Metrics (including major events)

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CoastPlus	LINCOLN CITY	DEVILS LAKE	4A338	SIUSLAW	392	57,848	660	87.65	0.594
CoastPlus	LINCOLN CITY	GLENEDEN	7A364	GLENEDEN	181	38,207	714	53.51	0.254
CoastPlus	LINCOLN CITY	GLENEDEN	7A366	SALISHAN	6	617	359	1.72	0.017
CoastPlus	LINCOLN CITY	NELSCOTT	7A390	NELSCOTT	794	65,535	358	183.06	2.218
CoastPlus	LINCOLN CITY	PGE GRAND RONDE	R114	BOYER	11	2,564	#N/A	#N/A	#N/A
CoastPlus	LINCOLN CITY	PGE GRAND RONDE	R136	BOYER	19	3,471	19	182.68	1.000
CoastPlus	LINCOLN CITY	WECOMA BEACH	7A354	WECOMA	922	62,989	719	87.61	1.282
CoastPlus	PORTLAND	ALBINA	5P111	ALBINA 11C01-UG	1	622	331	1.88	0.003
CoastPlus	PORTLAND	ALBINA	5P150	ALBINA 11C15	309	8,268	165	50.11	1.873
CoastPlus	PORTLAND	ALBINA	5P66	11C25	3	256	55	4.66	0.055
CoastPlus	PORTLAND	ALBINA	5P92	11C12-UG	1	10	348	0.03	0.003
CoastPlus	PORTLAND	ALDERWOOD 115/12.5	5P22	ALDERWOOD #2	202	2,222	202	11.00	1.000
CoastPlus	PORTLAND	ALDERWOOD 115/12.5	5P33	ALDERWOOD #4	381	104,832	186	563.61	2.048
CoastPlus	PORTLAND	ALDERWOOD 115/12.5	5P604	ALDERWOOD #3	366	5,881	182	32.32	2.011
CoastPlus	PORTLAND	BLOSS	5P172	FURNACE	0	0	1	0.00	0.000
CoastPlus	PORTLAND	COLUMBIA (OR)	5P266	#2	117	16,558	2,635	6.28	0.044
CoastPlus	PORTLAND	COLUMBIA (OR)	5P268	COLUMBIA #1	118	16,801	331	50.76	0.356
CoastPlus	PORTLAND	COLUMBIA (OR)	5P474	COLUMBIA #6	41	7,593	568	13.37	0.072
CoastPlus	PORTLAND	COLUMBIA (OR)	5P476	COLUMBIA #3	111	20,902	859	24.33	0.129
CoastPlus	PORTLAND	COLUMBIA (OR)	5P478	COLUMBIA #4	3,300	724,591	841	861.58	3.924
CoastPlus	PORTLAND	CULLY	5P288	CULLY #3-UG	806	67,338	805	83.65	1.001
CoastPlus	PORTLAND	CULLY	5P290	CULLY #2	2,605	212,598	2,379	89.36	1.095
CoastPlus	PORTLAND	CULLY	5P292	CULLY #1	6,929	468,808	2,922	160.44	2.371
CoastPlus	PORTLAND	HOLLADAY (OR)	5P146	HOLLADAY #2-UG	0	0	1	0.00	0.000
CoastPlus	PORTLAND	HOLLADAY (OR)	5P156	HOLLADAY #4-UG	3	623	196	3.18	0.015
CoastPlus	PORTLAND	HOLLADAY (OR)	5P158	HOLLADAY #6	27	1,936	837	2.31	0.032
CoastPlus	PORTLAND	HOLLYWOOD	5P203	HOLLYWOOD #3	1,432	140,595	1,318	106.67	1.086
CoastPlus	PORTLAND	HOLLYWOOD	5P204	HOLLYWOOD #2	1,928	215,774	1,669	129.28	1.155
CoastPlus	PORTLAND	HOLLYWOOD	5P205	HOLLYWOOD #1	2,193	263,391	2,125	123.95	1.032
CoastPlus	PORTLAND	HOLLYWOOD	5P208	HOLLYWOOD #5	2,206	212,157	1,699	124.87	1.298
CoastPlus	PORTLAND	HOLLYWOOD	5P209	HOLLYWOOD #4	2,412	236,677	2,354	100.54	1.025
CoastPlus	PORTLAND	KILLINGSWORTH	5P123	KILLINGSWORTH #3	563	43,129	379	113.80	1.485
CoastPlus	PORTLAND	KILLINGSWORTH	5P217	KILLINGSWORTH #5	451	6,484	455	14.25	0.991
CoastPlus	PORTLAND	KILLINGSWORTH	5P41	KILLINGSWORTH #4	3,069	86,210	2,741	31.45	1.120
CoastPlus	PORTLAND	KILLINGSWORTH	5P88	KILLINGSWORTH #1	16	199	16	12.42	1.000
CoastPlus	PORTLAND	KILLINGSWORTH	5P89	KILLINGSWORTH #2	3,578	54,318	3,099	17.53	1.155

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CoastPlus	PORTLAND	KNOTT	5P231	KNOTT #1	106	25,466	2,575	9.89	0.041
CoastPlus	PORTLAND	KNOTT	5P232	KNOTT #2	20	5,435	1,185	4.59	0.017
CoastPlus	PORTLAND	KNOTT	5P233	KNOTT #3	7,227	1,624,935	2,291	709.27	3.155
CoastPlus	PORTLAND	KNOTT	5P372	11046	4	809	418	1.93	0.010
CoastPlus	PORTLAND	KNOTT	5P374	11020	12	1,377	1,023	1.35	0.012
CoastPlus	PORTLAND	LINCOLN (OR)	5P422	11D06-UG	0	0	553	0.00	0.000
CoastPlus	PORTLAND	MALLORY	5P162	MALLORY #1	28	3,681	1,928	1.91	0.015
CoastPlus	PORTLAND	MALLORY	5P164	MALLORY #2	3,775	204,883	3,141	65.23	1.202
CoastPlus	PORTLAND	PARKROSE	5P244	PARKROSE#4	3,282	121,055	3,112	38.90	1.055
CoastPlus	PORTLAND	PARKROSE	5P246	PARKROSE#3	3,267	237,195	3,094	76.66	1.056
CoastPlus	PORTLAND	PARKROSE	5P250	PARKROSE#2	2,053	86,910	677	128.38	3.032
CoastPlus	PORTLAND	PARKROSE	5P252	PARKROSE#1	1,888	129,987	1,817	71.54	1.039
CoastPlus	PORTLAND	RUSSELLVILLE	5P274	RUSSELLVILLE #3	7,039	1,347,982	3,038	443.71	2.317
CoastPlus	PORTLAND	RUSSELLVILLE	5P276	RUSSELLVILLE #4	2,785	418,006	2,125	196.71	1.311
CoastPlus	PORTLAND	RUSSELLVILLE	5P278	RUSSELLVILLE #1	851	26,942	3,244	8.31	0.262
CoastPlus	PORTLAND	RUSSELLVILLE	5P280	RUSSELLVILLE #2	178	51,077	1,305	39.14	0.136
CoastPlus	PORTLAND	VERNON	5P391	VERNON #1	5,620	610,495	1,834	332.88	3.064
CoastPlus	PORTLAND	VERNON	5P392	VERNON NO. 2	5,834	325,374	2,491	130.62	2.342
CoastPlus	PORTLAND	VERNON	5P393	VERNON #3	5,674	370,549	3,073	120.58	1.846
CoastPlus	PORTLAND	VERNON	5P394	VERNON # 4	6,508	420,046	3,176	132.26	2.049
CoastPlus	PORTLAND	VERNON	5P395	VERNON # 5	4,438	293,027	2,161	135.60	2.054
Northeast OR	ENTERPRISE	ENTERPRISE (OR)	4W8	CREIGHTON LN	3,982	352,131	1,452	242.51	2.742
Northeast OR	ENTERPRISE	ENTERPRISE (OR)	5W15	CITY	1,045	424,280	963	440.58	1.085
Northeast OR	ENTERPRISE	ENTERPRISE (OR)	5W26	RURAL (ENTERPRIS	1,381	486,640	1,074	453.11	1.286
Northeast OR	ENTERPRISE	JOSEPH	5W21	PRAIRIE	2,088	173,497	874	198.51	2.389
Northeast OR	ENTERPRISE	MINAM	5W18	MINAM	56	9,958	13	766.02	4.308
Northeast OR	ENTERPRISE	PALLETTE	4W14	PALLETTE NORTH	1,464	93,232	177	526.74	8.271
Northeast OR	ENTERPRISE	PALLETTE	4W15	PALLETTE SOUTH	444	28,030	55	509.63	8.073
Northeast OR	ENTERPRISE	WALLOWA	5W28	CITY	1,143	87,568	873	100.31	1.309
Northeast OR	HERMISTON	ARLINGTON	5K25	ARLINGTON	3,429	462,882	553	837.04	6.201
Northeast OR	HERMISTON	BLALOCK	5K40	BLALOCK	155	33,938	26	1305.32	5.962
Northeast OR	HERMISTON	CREEK	4K30	WILLOW CREEK	0	0	0	#DIV/0!	#DIV/0!
Northeast OR	HERMISTON	DALREED	4K40	SIM/TAG	110	53,020	92	576.30	1.196
Northeast OR	HERMISTON	DALREED	4K46	BOEING	32	6,350	170	37.35	0.188
Northeast OR	HERMISTON	HERMISTON	5W602	RURAL (HERMISTON	418	50,296	1,391	36.16	0.301
Northeast OR	HERMISTON	HINKLE	5W82	MEADOWS	324	166,277	380	437.57	0.853

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Northeast OR	HERMISTON	UMATILLA	5W658	UMATILLA	1,648	318,245	1,184	268.79	1.392
Northeast OR	HERMISTON	UMATILLA	5W660	MCNARY	1,328	219,822	916	239.98	1.450
Northeast OR	HERMISTON	UMATILLA	5W664	PORT FEEDER	54	9,930	49	202.66	1.102
Northeast OR	MILTON/FREEWATER	UMAPINE	5W105	UMAPINE FEEDER	1,993	329,619	999	329.95	1.995
Northeast OR	PENDLETON	ATHENA	5W703	CITY	96	19,503	864	22.57	0.111
Northeast OR	PENDLETON	ATHENA	5W705	HELIX	330	103,803	436	238.08	0.757
Northeast OR	PENDLETON	BUCKAROO	5W201	STATE HOSP.	1,251	93,163	412	226.12	3.036
Northeast OR	PENDLETON	BUCKAROO	5W202	REITH	4,049	387,165	1,535	252.22	2.638
Northeast OR	PENDLETON	BUCKAROO	5W203	MONTEE	5,127	915,533	1,648	555.54	3.111
Northeast OR	PENDLETON	PENDLETON	5W401	WEST HILLS	298	93,316	1,756	53.14	0.170
Northeast OR	PENDLETON	PENDLETON	5W402	HARRIS HTS	772	191,457	2,114	90.57	0.385
Northeast OR	PENDLETON	PENDLETON	5W403	MISSION	2,218	254,699	1,073	237.37	2.067
Northeast OR	PENDLETON	PENDLETON	7W452	NORTHWEST	16	9,272	525	17.66	0.030
Northeast OR	PENDLETON	PENDLETON	7W453	SOUTHWEST (PEND	360	71,074	337	210.90	1.068
Northeast OR	PENDLETON	PILOT ROCK	5W404	MILL (PILOT ROCK)	2	303	3	100.86	0.667
Northeast OR	PENDLETON	PILOT ROCK	5W406	PILOT ROCK CITY	1,920	343,115	1,408	243.69	1.364
Northeast OR	PENDLETON	WESTON NEW (OR)	5W40	WESTON CANNERY	14	261	14	18.67	1.000
Northeast OR	PENDLETON	WESTON NEW (OR)	5W7	SCOTT'S FEEDER	1,302	137,538	465	295.78	2.800
Northeast OR	WALLA WALLA	UMAPINE	5W106	FERNDALDE	3,339	1,436,097	1,360	1055.95	2.455
South OR	GRANTS PASS	AGNESS AVE	5R172	SPALDING MILL	485	94,707	889	95.28	0.546
South OR	GRANTS PASS	AGNESS AVE	5R173	JONES CREEK	115	28,108	876	32.09	0.131
South OR	GRANTS PASS	AGNESS AVE	5R322	ANTEATER	34	7,344	971	7.56	0.035
South OR	GRANTS PASS	APPLEGATE	5R267	MURPHY	3,134	759,966	1,022	743.61	3.067
South OR	GRANTS PASS	APPLEGATE	5R278	HIGHWAY	4,154	946,500	1,625	582.46	2.556
South OR	GRANTS PASS	BEACON	5R104	SAVAGE ST	97	17,213	1,247	13.80	0.078
South OR	GRANTS PASS	BEACON	5R105	BEACON ST	131	23,980	831	28.86	0.158
South OR	GRANTS PASS	CAVE JUNCTION	5R52	FREE& EASY	640	235,710	2,435	96.80	0.263
South OR	GRANTS PASS	CAVE JUNCTION	5R53	ROUGH & READY	125	17,030	1,585	10.74	0.079
South OR	GRANTS PASS	CAVEJUNCTION	5R295	QUAIL	86	19,184	1,150	16.68	0.075
South OR	GRANTS PASS	CAVEJUNCTION	5R82	WASHINGTON	59	5,720	1,204	4.75	0.049
South OR	GRANTS PASS	CAVEJUNCTION	5R98	MANZANITA	23	5,438	595	9.14	0.039
South OR	GRANTS PASS	CAVEJUNCTION	5R99	CAVEJUNCTION	1,219	201,119	1,177	170.87	1.036
South OR	GRANTS PASS	DOWELL	5R331	DOVE	54	9,869	1,489	6.63	0.036
South OR	GRANTS PASS	DOWELL	5R334	DUCK	6,476	513,705	2,363	217.40	2.741
South OR	GRANTS PASS	EASY VALLEY	5R123	G STREET	6,437	343,844	2,007	171.32	3.207
South OR	GRANTS PASS	EASY VALLEY	5R125	ROGUE	591	107,597	1,702	63.22	0.347

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South OR	GRANTS PASS	EASY VALLEY	5R259	CHINOOK	1,423	105,891	1,307	81.02	1.089
South OR	GRANTS PASS	FIELDER CREEK	4R33	ELK FDR.	1,692	535,434	1,627	329.09	1.040
South OR	GRANTS PASS	FIELDER CREEK	4R34	BEAR FDR	646	237,790	876	271.45	0.737
South OR	GRANTS PASS	GLENDALE SUBSTATION	5R133	GLENDALE	2,974	1,061,262	1,976	537.08	1.506
South OR	GRANTS PASS	GLENDALE SUBSTATION	5R143	INDUSTRIAL	509	156,351	695	224.96	0.732
South OR	GRANTS PASS	JEROME PRAIRIE	5R62	WILD PRAIRIE	3,725	986,665	1,640	601.62	2.271
South OR	GRANTS PASS	JEROME PRAIRIE	5R63	WOOD RIVER	8,878	1,743,121	1,606	1085.38	5.528
South OR	GRANTS PASS	MERLIN	5R232	MERLIN-HUGO	1,705	199,270	2,078	95.90	0.821
South OR	GRANTS PASS	MERLIN	5R234	PARADISE	1,278	106,407	1,186	89.72	1.078
South OR	GRANTS PASS	MERLIN	5R248	PLEASANT VALLEY-	680	137,385	1,842	74.58	0.369
South OR	GRANTS PASS	MERLIN	5R251	BADGER	121	30,716	920	33.39	0.132
South OR	GRANTS PASS	NEW O'BRIEN	5R106	O'BRIEN	1,024	181,345	462	392.52	2.216
South OR	GRANTS PASS	PARK STREET (OR)	5R114	FRUITDALE	340	58,395	2,118	27.57	0.161
South OR	GRANTS PASS	PARK STREET (OR)	5R115	ALLEN CREEK	62	22,816	1,001	22.79	0.062
South OR	GRANTS PASS	PARK STREET (OR)	5R121	NEW HOPE	256	106,323	1,863	57.07	0.137
South OR	GRANTS PASS	PARK STREET (OR)	5R164	EXPRESS	3	825	320	2.58	0.009
South OR	GRANTS PASS	PARK STREET (OR)	5R169	PORTOLA	325	37,667	1,533	24.57	0.212
South OR	GRANTS PASS	PROVOLT	5R67	NORTH-SOUTH	3,167	805,921	1,399	576.07	2.264
South OR	GRANTS PASS	ROGUE RIVER	4R7	EVANS VALLEY	466	109,734	233	470.96	2.000
South OR	GRANTS PASS	ROGUE RIVER	5R77	SAVAGEWIMMER	480	94,211	1,798	52.40	0.267
South OR	GRANTS PASS	ROGUE RIVER	5R78	ROCKY POINT (ROG	113	19,148	1,068	17.93	0.106
South OR	GRANTS PASS	SELMA	5R65	DEER CREEK	163	35,483	1,236	28.71	0.132
South OR	KLAMATH FALLS	BEATTY	5L1	BEATTY	820	100,268	427	234.82	1.920
South OR	KLAMATH FALLS	BLV	5L14	TOWN (BLY)	617	32,897	459	71.67	1.344
South OR	KLAMATH FALLS	BONANZA (OR)	5L7	POE VALLEY	950	164,787	453	363.77	2.097
South OR	KLAMATH FALLS	BRYANT	5L2	GARY STREET	388	134,539	2,194	61.32	0.177
South OR	KLAMATH FALLS	BRYANT	5L3	WASHBURN	36	6,403	1,884	3.40	0.019
South OR	KLAMATH FALLS	BRYANT	5L4	SUMMERS LANE	3,101	316,306	2,046	154.60	1.516
South OR	KLAMATH FALLS	BRYANT	5L5	MOYINA HTS.	2,665	25,154	2,493	10.09	1.069
South OR	KLAMATH FALLS	CASEBEER SUB	4L16	LANGELL VLY	2,694	465,719	1,209	385.21	2.228
South OR	KLAMATH FALLS	CHILOQUIN	5L57	CRATER LAKE	1,977	320,429	1,110	288.68	1.781
South OR	KLAMATH FALLS	CHILOQUIN MARKET	5L37	WILLIAMSON	112	19,491	491	39.70	0.228
South OR	KLAMATH FALLS	DAIRY	5L42	SWAN LAKE	722	44,675	324	137.89	2.228
South OR	KLAMATH FALLS	DAIRY	5L43	DAIRY	1,164	75,882	492	154.23	2.366
South OR	KLAMATH FALLS	HAMAKER	5L55	KENO	1,272	162,137	1,764	91.91	0.721
South OR	KLAMATH FALLS	HAMAKER	5L56	MOUNTAIN	54	10,583	167	63.37	0.323

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South OR	KLAMATH FALLS	HENLEY	5L58	HENLEY	731	41,410	237	174.72	3.084
South OR	KLAMATH FALLS	HENLEY	5L59	WEST	1,730	102,093	554	184.28	3.123
South OR	KLAMATH FALLS	HORNET	5L44	HOMEDALE	5,711	356,131	2,711	131.37	2.107
South OR	KLAMATH FALLS	HORNET	5L45	CRYSTAL SPR	5,438	278,739	1,503	185.46	3.618
South OR	KLAMATH FALLS	LAKEPORT	5L49	WOCUS	220	7,515	214	35.12	1.028
South OR	KLAMATH FALLS	LAKEPORT	5L54	SOUTH (LAKEPORT)	5,017	215,056	2,475	86.89	2.027
South OR	KLAMATH FALLS	LAKEPORT	5L61	JELDWEN	8	266	8	33.27	1.000
South OR	KLAMATH FALLS	MERRILL (OR)	5L26	LAKE (MERRILL)	2,686	123,138	1,032	119.32	2.603
South OR	KLAMATH FALLS	MERRILL (OR)	5L27	NORTH (MERRILL)	1,592	148,578	565	262.97	2.818
South OR	KLAMATH FALLS	MODOC	5L36	MODOC	491	86,328	1,000	86.33	0.491
South OR	KLAMATH FALLS	ROSS AVENUE	5L46	ELDORADO	13	695	1,393	0.50	0.009
South OR	KLAMATH FALLS	ROSS AVENUE	5L48	BROAD ST.	550	29,561	1,247	23.71	0.441
South OR	KLAMATH FALLS	RUNNING Y	4L50	ROCKY POINT FEED	588	200,173	1,495	133.90	0.393
South OR	KLAMATH FALLS	SHASTA WAY	7L25	SHASTA WAY	2	305	441	0.69	0.005
South OR	KLAMATH FALLS	SPRAGUE RIVER	5L8	SPRAGUE RIVER	597	24,211	515	47.01	1.159
South OR	KLAMATH FALLS	TEXUM	5L112	ANDERSON	17	1,112	1,241	0.90	0.014
South OR	KLAMATH FALLS	TEXUM	5L113	TOWER	1,567	153,237	333	460.17	4.706
South OR	KLAMATH FALLS	TEXUM	5L116	ALTAMONT	731	87,519	1,547	56.57	0.473
South OR	KLAMATH FALLS	TURKEY HILL	5L20	MALIN CITY	2,314	136,912	855	160.13	2.706
South OR	KLAMATH FALLS	TURKEY HILL	5L23	RURAL (TURKEY HILL)	1,010	89,859	333	269.85	3.033
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L12	ORINDALE	948	35,492	824	43.07	1.150
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L15	CALIFORNIA	2,850	163,997	1,401	117.06	2.034
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L16	MAIN ST (WEST SIDE)	118	3,003	118	25.45	1.000
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L17	PINE ST (WEST SIDE)	537	14,058	523	26.88	1.027
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L18	RIVERSIDE (WEST SIDE)	618	16,928	609	27.80	1.015
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	5L19	LAKESHORE	311	8,101	304	26.65	1.023
South OR	KLAMATH FALLS	WEST SIDE HE PLANT	8L10	CITY WTR PMP	1	25	1	25.45	1.000
South OR	LAKEVIEW	MILE-HI	5L104	INDUSTRIAL	830	20,038	766	26.16	1.084
South OR	LAKEVIEW	MILE-HI	5L105	BUSINESS	1,874	27,614	1,774	15.57	1.056
South OR	MEDFORD	ASHLAND (MTN AVE, PUD)	5R245	VALLEY VIEW	4,116	122,685	998	122.93	4.124
South OR	MEDFORD	BEALL LANE	5R359	BEEHIVE	2	10	2	5.22	1.000
South OR	MEDFORD	BEALL LANE	5R361	BULLDOG	2,139	115,320	1,660	69.47	1.289
South OR	MEDFORD	BEALL LANE	5R364	BOBCAT	2,288	28,992	2,204	13.15	1.038
South OR	MEDFORD	BELKNAP	5R1	KOGAP	1,046	154,603	1,016	152.17	1.030
South OR	MEDFORD	BELKNAP	5R2	RIVERSIDE (BELKNAP)	2,669	145,001	680	213.24	3.925
South OR	MEDFORD	BELKNAP	5R3	BARNETT	231	41,418	1,562	26.52	0.148



**Oregon 2013 Circuit Metrics (including major events)**

OR Reliability Region	Op Area Name	Substation Name	Circuit Id	Circuit Name	Customers In Incident Sustained	Customer Minutes Lost for Incident	Circuit Customer Count	SAIDI	SAIFI
South OR	MEDFORD	BELKNAP	5R47	STEWART	312	33,715	2,121	15.90	0.147
South OR	MEDFORD	BROOKHURST	5R118	SPRINGBROOK	113	24,234	1,681	14.42	0.067
South OR	MEDFORD	BROOKHURST	5R135	ROBERTS (BROOKHURST)	41	4,936	1,487	3.32	0.028
South OR	MEDFORD	BROOKHURST	5R32	ROXY	164	39,176	1,656	23.66	0.099
South OR	MEDFORD	BROOKHURST	5R33	CRATER LAKE	113	34,985	1,633	21.42	0.069
South OR	MEDFORD	BROOKHURST	5R75	SUNRISE (BROOKHURST)	1,256	78,090	1,184	65.95	1.061
South OR	MEDFORD	CAMPBELL	5R218	PHOENIX	2,996	267,676	1,550	172.69	1.933
South OR	MEDFORD	CAMPBELL	5R227	FERN VALLEY	1,685	74,284	1,312	56.62	1.284
South OR	MEDFORD	CAMPBELL	5R312	COBRA	116	9,431	1,529	6.17	0.076
South OR	MEDFORD	DODGE BRIDGE	4R1	SALMON	900	297,279	1,654	179.73	0.544
South OR	MEDFORD	DODGE BRIDGE	4R35	MEADOWS ROAD	1,721	96,070	1,372	70.02	1.254
South OR	MEDFORD	FOOTHILLS	5R38	HOSPITAL	45	10,864	771	14.09	0.058
South OR	MEDFORD	FOOTHILLS	5R39	PIERCE ROAD	361	72,072	1,156	62.35	0.312
South OR	MEDFORD	FRALEY	5R87	TABLE ROCK	887	290,936	518	561.65	1.712
South OR	MEDFORD	FRALEY	5R88	DODGE BRIDGE	19	1,821	387	4.71	0.049
South OR	MEDFORD	GOLD HILL	5R103	GOLD HILL	1,410	180,609	2,039	88.58	0.692
South OR	MEDFORD	GRIFFIN CREEK	5R204	HULL RD	2,619	439,955	2,580	170.53	1.015
South OR	MEDFORD	GRIFFIN CREEK	5R206	GRIFFIN CREEK	2,159	322,191	1,704	189.08	1.267
South OR	MEDFORD	HUMBUG CREEK	5R287	HUMMINGBIRD	817	65,631	682	96.23	1.198
South OR	MEDFORD	MEDFORD	5R21	MELROSE	17	4,433	1,623	2.73	0.010
South OR	MEDFORD	MEDFORD	5R23	SPRING ST.	178	57,668	1,616	35.69	0.110
South OR	MEDFORD	MEDFORD	5R250	BIG Y	323	85,549	1,876	45.60	0.172
South OR	MEDFORD	MEDFORD	5R253	APPLE	57	12,581	1,130	11.13	0.050
South OR	MEDFORD	MEDFORD	5R257	PEAR	6	1,919	601	3.19	0.010
South OR	MEDFORD	MEDFORD	5R659	MCLEAN	168	33,039	691	47.81	0.243
South OR	MEDFORD	NEW JACKSONVILLE SUB-DISTRICT	5R284	STAGE RD	1,903	106,981	2,099	50.97	0.907
South OR	MEDFORD	NEW JACKSONVILLE SUB-DISTRICT	5R285	JACKSONVILLE HWY	4,276	108,318	2,099	51.60	2.037
South OR	MEDFORD	OAK KNOLL	5R55	SISKIYOU	3,138	397,218	1,612	246.41	1.947
South OR	MEDFORD	PROSPECT CENTRAL	5R40	NEW CASCADE	693	159,080	351	453.22	1.974
South OR	MEDFORD	RED BLANKET	7R5	PROSPECT	16	1,629	403	4.04	0.040
South OR	MEDFORD	ROXY ANN	5R350	St. Bernard	277	39,759	1,059	37.54	0.262
South OR	MEDFORD	ROXY ANN	5R354	RACCOON	1,383	43,458	1,335	32.55	1.036
South OR	MEDFORD	RUCH	5R68	APPLEGATE	1,622	145,812	918	158.84	1.767
South OR	MEDFORD	RUCH	5R69	RUCH	630	42,673	555	76.89	1.135
South OR	MEDFORD	SAGE ROAD (OR)	5R209	TIMBER PROD	1	5	2	2.61	0.500
South OR	MEDFORD	SAGE ROAD (OR)	5R211	COLUMBUS	2,240	55,647	1,994	27.91	1.123

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South OR	MEDFORD	SAGE ROAD (OR)	5R226	BOISE	924	32,984	856	38.53	1.079
South OR	MEDFORD	SAGE ROAD (OR)	5R27	MCANDREWS	120	626	120	5.22	1.000
South OR	MEDFORD	SAGE ROAD (OR)	5R28	ROSS	1,767	16,547	1,717	9.64	1.029
South OR	MEDFORD	SAGE ROAD (OR)	5R29	EDWARDS	779	4,969	766	6.49	1.017
South OR	MEDFORD	SCENIC	5R174	UPTON	4,193	182,765	2,019	90.52	2.077
South OR	MEDFORD	SCENIC	5R180	HEAD RD	70	5,955	1,415	4.21	0.049
South OR	MEDFORD	SCENIC	5R182	TAYLOR RD	284	50,762	1,478	34.35	0.192
South OR	MEDFORD	SCENIC	5R184	CHENEY	94	13,659	1,454	9.39	0.065
South OR	MEDFORD	STEVENS ROAD	4R13	HENRY MILLER	1,505	292,374	1,368	213.72	1.100
South OR	MEDFORD	STEVENS ROAD	4R17	Stingray	913	168,190	2,483	67.74	0.368
South OR	MEDFORD	STEVENS ROAD	4R41	ANTELOPE	3,113	455,591	1,910	238.53	1.630
South OR	MEDFORD	TAKELMA	4R9	LOST CK. (TAKELMA	11,927	2,449,840	2,651	924.12	4.499
South OR	MEDFORD	TALENT	5R237	TALENT	1,525	234,232	2,525	92.77	0.604
South OR	MEDFORD	TALENT	5R238	ANDERSON CRK	930	82,560	1,650	50.04	0.564
South OR	MEDFORD	TALENT	5R239	HARTLEY ROAD	400	77,178	1,540	50.12	0.260
South OR	MEDFORD	TALENT	5R240	NORTH HWY	202	21,100	1,079	19.55	0.187
South OR	MEDFORD	TOLO	5R90	TBL ROCK LBR	30	2,036	165	12.34	0.182
South OR	MEDFORD	TOLO	5R91	SAMS VALLEY	1,954	457,618	658	695.47	2.970
South OR	MEDFORD	TOLO	5R92	KIRTLAND RD	82	31,390	208	150.91	0.394
South OR	MEDFORD	VILAS ROAD	5R110	MCLAUGHLIN	1,172	114,823	966	118.86	1.213
South OR	MEDFORD	VILAS ROAD	5R146	KING CENTER	36	2,829	1,408	2.01	0.026
South OR	MEDFORD	VILAS ROAD	5R305	WEBFOOT	0	0	1,016	0.00	0.000
South OR	MEDFORD	WHITE CITY	5R11	EAGLE POINT	2,945	296,366	1,448	204.67	2.034
South OR	MEDFORD	WHITE CITY	5R12	INDUSTRIAL	0	0	33	0.00	0.000
South OR	MEDFORD	WHITE CITY	5R13	FIR-PLY	0	0	24	0.00	0.000
South OR	MEDFORD	WHITE CITY	5R14	AGATE	229	3,383	107	31.62	2.140
South OR	MEDFORD	WHITE CITY	5R19	3M	7	481	95	5.07	0.074
South OR	MEDFORD	WHITE CITY	5R66	4 CORNERS	0	0	1,657	0.00	0.000
South OR	MEDFORD	WHITE CITY	5R76	AVE C	3	2,051	90	22.79	0.033
South OR	ROSEBURG/MYRTLECREEK	CARNES	5U44	RND PRARIE	234	29,963	417	71.85	0.561
South OR	ROSEBURG/MYRTLECREEK	CLEARWATER #1 SUB	6U17	BRIGGS	14	3,971	3	1323.72	4.667
South OR	ROSEBURG/MYRTLECREEK	CLEARWATER #2 SUB	6U33	CLEARWATER	210	9,552	103	92.74	2.039
South OR	ROSEBURG/MYRTLECREEK	CLOAKE	4U37	RUSA	2	433	1	433.25	2.000
South OR	ROSEBURG/MYRTLECREEK	CLOAKE	4U38	HARVARD	4,688	857,044	3,439	249.21	1.363
South OR	ROSEBURG/MYRTLECREEK	CLOAKE	4U39	GOEDECK	2,476	515,618	1,074	480.09	2.305
South OR	ROSEBURG/MYRTLECREEK	GARDEN VALLEY	4U80	EDENBOWER	2	230	657	0.35	0.003

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South OR	ROSEBURG/MYRTLECREEK	GARDEN VALLEY	4U81	VALLEY	191	24,183	1,322	18.29	0.144
South OR	ROSEBURG/MYRTLECREEK	GAZLEY	5U46	CANYONVILLE	499	79,618	426	186.90	1.171
South OR	ROSEBURG/MYRTLECREEK	GAZLEY	5U52	BEALS CREEK FEED	1,869	519,786	910	571.19	2.054
South OR	ROSEBURG/MYRTLECREEK	GLIDE SUBSTATION	5U83	IDLEYLD	3,750	1,126,509	1,004	1122.02	3.735
South OR	ROSEBURG/MYRTLECREEK	GLIDE SUBSTATION	5U84	LITTLE RIVER	4,843	1,724,191	1,354	1273.41	3.577
South OR	ROSEBURG/MYRTLECREEK	GREEN SUBSTATION	5U32	SAFARI	1,036	235,017	2,281	103.03	0.454
South OR	ROSEBURG/MYRTLECREEK	GREEN SUBSTATION	5U33	SUNNYSLOPE	333	38,485	1,453	26.49	0.229
South OR	ROSEBURG/MYRTLECREEK	ILLAHEE FLATS	6U13	ILLAHEE FLATS SIN	52	6,806	26	261.78	2.000
South OR	ROSEBURG/MYRTLECREEK	LEMOLO # 1	5U920	DIAMOND LAKE	1,361	250,479	179	1399.33	7.603
South OR	ROSEBURG/MYRTLECREEK	MYRTLE CREEK	5U76	SUPER Y	486	76,108	1,566	48.60	0.310
South OR	ROSEBURG/MYRTLECREEK	MYRTLE CREEK	5U77	BOOMER HILL	1,360	148,041	2,335	63.40	0.582
South OR	ROSEBURG/MYRTLECREEK	OAKLAND (OR)	5U11	UMPQUA	303	23,358	1,368	17.07	0.221
South OR	ROSEBURG/MYRTLECREEK	OAKLAND (OR)	5U12	STAGECOACH	7	702	551	1.27	0.013
South OR	ROSEBURG/MYRTLECREEK	RIDDLE	5U1	TRI CITY	23	4,127	1,022	4.04	0.023
South OR	ROSEBURG/MYRTLECREEK	RIDDLE	5U2	COW CREEK	150	17,531	1,611	10.88	0.093
South OR	ROSEBURG/MYRTLECREEK	RIDDLE	5U3	HANNA	17	5,366	270	19.87	0.063
South OR	ROSEBURG/MYRTLECREEK	ROSEBURG	4U10	DIAMOND	6,199	398,108	2,503	159.05	2.477
South OR	ROSEBURG/MYRTLECREEK	ROSEBURG	4U22	DIXON	2,671	207,619	1,104	188.06	2.419
South OR	ROSEBURG/MYRTLECREEK	ROSEBURG	4U5	DOUGLAS	4,381	176,295	2,098	84.03	2.088
South OR	ROSEBURG/MYRTLECREEK	SLIDE CREEK	6U76	SLIDE CREEK CAMF	6	427	6	71.13	1.000
South OR	ROSEBURG/MYRTLECREEK	SODA SPRINGS HE PLT	6U1	DRY CREEK	1	39	24	1.65	0.042
South OR	ROSEBURG/MYRTLECREEK	SOUTHGATE	4U30	SHADY POINT	51	5,589	1,598	3.50	0.032
South OR	ROSEBURG/MYRTLECREEK	SOUTHGATE	4U31	BOOTH	127	12,581	1,375	9.15	0.092
South OR	ROSEBURG/MYRTLECREEK	STEAMBOAT	6U18	STEAMBOAT	44	5,759	22	261.78	2.000
South OR	ROSEBURG/MYRTLECREEK	SUTHERLIN	5U35	NON-PAREIL	266	15,584	1,342	11.61	0.198
South OR	ROSEBURG/MYRTLECREEK	SUTHERLIN	5U36	DEADY	764	59,401	1,326	44.80	0.576
South OR	ROSEBURG/MYRTLECREEK	SUTHERLIN	5U56	Industrial	952	130,383	474	275.07	2.008
South OR	ROSEBURG/MYRTLECREEK	TILLER	5U89	JACKSON CRK	684	62,873	322	195.26	2.124
South OR	ROSEBURG/MYRTLECREEK	TOKETEE	8U12	TOKETEE CITY	24	2,217	19	116.69	1.263
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	4U18	WILBUR	147	27,182	1,667	16.31	0.088
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	5U15	NEWTON CREEK	670	37,614	1,760	21.37	0.381
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	5U17	FISHER	1,003	489,632	746	656.34	1.345
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	5U19	EVANS	193	24,313	749	32.46	0.258
South OR	ROSEBURG/MYRTLECREEK	WINSTON	5U48	BROCKWAY	133	18,334	382	20.79	0.151
South OR	ROSEBURG/MYRTLECREEK	WINSTON	5U49	DILLARD	270	58,059	1,478	39.28	0.183
WtrmVly	ALBANY	HAZELWOOD	4M335	WEST HIGH	281	21,256	1,487	14.29	0.189

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WlmVly	ALBANY	HAZELWOOD	4M336	RIVERVIEW (HAZEL)	1,154	205,814	1,231	167.19	0.937
WlmVly	ALBANY	JEFFERSON (OR)	4M117	MARION	1,474	288,358	742	388.62	1.987
WlmVly	ALBANY	JEFFERSON (OR)	4M125	MINT	9,225	774,964	2,568	301.78	3.592
WlmVly	ALBANY	MURDER CREEK	4M243	SCRAVEL HILL	5,413	1,377,864	3,776	364.90	1.434
WlmVly	ALBANY	MURDER CREEK	4M245	RURAL NW	3,555	331,543	1,857	178.54	1.914
WlmVly	ALBANY	MURDER CREEK	4M250	INDUSTRIAL	109	11,550	1,267	9.12	0.086
WlmVly	ALBANY	OREMET	4M295	OAK CREEK	0	0	111	0.00	0.000
WlmVly	ALBANY	OREMET	4M296	ROGERSDALE	2,374	538,392	3,129	172.07	0.759
WlmVly	ALBANY	OREMET	5M19	OREMET	1	25	3	8.18	0.333
WlmVly	ALBANY	QUEEN AVE	4M217	SANTIAM	88	10,925	2,000	5.46	0.044
WlmVly	ALBANY	QUEEN AVE	4M258	HILL STREET	381	59,938	2,131	28.13	0.179
WlmVly	ALBANY	QUEEN AVE	4M261	WAVERLY	7,834	913,803	3,362	271.80	2.330
WlmVly	ALBANY	QUEEN AVE	4M262	GEARY STREET	212	36,269	2,608	13.91	0.081
WlmVly	ALBANY	VINE STREET	4M15	FERRY	639	111,007	2,229	49.80	0.287
WlmVly	ALBANY	VINE STREET	4M16	WATER STREET	5,769	431,492	3,790	113.85	1.522
WlmVly	CORVALLIS	BUCHANAN	4M130	HEWLETT PACKARD	2,758	463,713	2,679	173.09	1.029
WlmVly	CORVALLIS	BUCHANAN	4M133	PEORIA	4,413	431,038	2,489	173.18	1.773
WlmVly	CORVALLIS	BUCHANAN	4M134	N. NINTH ST.	3,138	372,048	2,617	142.17	1.199
WlmVly	CORVALLIS	DIXON	7M26	FOURTH ST.	203	16,269	201	80.94	1.010
WlmVly	CORVALLIS	DIXON	7M29	SECOND ST.	328	25,798	305	84.58	1.075
WlmVly	CORVALLIS	GRANT	4M265	HIGH SCHOOL	84	4,360	2,539	1.72	0.033
WlmVly	CORVALLIS	GRANT	4M266	CHINTIMINI	2,807	55,981	2,539	22.05	1.106
WlmVly	CORVALLIS	GRANT	4M268	KINGS ROAD	8,524	2,315,880	2,556	906.06	3.335
WlmVly	CORVALLIS	GRANT	4M269	29TH STREET	15,501	1,663,928	3,287	506.21	4.716
WlmVly	CORVALLIS	HILLVIEW	4M180	WEST HILLS	43	4,126	1,709	2.41	0.025
WlmVly	CORVALLIS	HILLVIEW	4M181	PHILOMATH	31	3,118	651	4.79	0.048
WlmVly	CORVALLIS	HILLVIEW	4M182	SUNSET	109	14,663	1,535	9.55	0.071
WlmVly	CORVALLIS	HILLVIEW	4M185	PLYMOUTH	141	16,774	2,245	7.47	0.063
WlmVly	CORVALLIS	MARYS RIVER	4M151	GREENBERRY	12,652	985,716	3,612	272.90	3.503
WlmVly	CORVALLIS	MARYS RIVER	4M152	AVERY	412	42,535	191	222.69	2.157
WlmVly	CORVALLIS	MARYS RIVER	4M153	GALLAGHER	323	28,330	161	175.96	2.006
WlmVly	COTTAGE GROVE/J.CITY	COBURG	4M220	DETERING	18	1,628	529	3.08	0.034
WlmVly	COTTAGE GROVE/J.CITY	GOSHEN (OR)	4M360	GOSHEN FDR	97	19,880	1,660	11.98	0.058
WlmVly	COTTAGE GROVE/J.CITY	HARRISBURG SUB	4M400	TERRITORIAL	672	186,322	1,907	97.70	0.352
WlmVly	COTTAGE GROVE/J.CITY	JUNCTION CITY	4M102	6TH STREET	312	53,624	1,174	45.68	0.266
WlmVly	COTTAGE GROVE/J.CITY	JUNCTION CITY	4M99	PRAIRIE ROAD	912	251,866	935	269.37	0.975

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WlmVly	COTTAGE GROVE/J CITY	LANCASTER	4M209	MONROE	603	135,610	1,128	120.22	0.535
WlmVly	COTTAGE GROVE/J CITY	VILLAGE GREEN	4M84	NORTH SIDE	4,997	488,104	2,394	203.89	2.087
WlmVly	COTTAGE GROVE/J CITY	VILLAGE GREEN	4M86	MADISON	197	64,525	1,598	40.38	0.123
WlmVly	DALLAS/INDEPENDENCE	DALLAS	4M100	RURAL (DALLAS)	1,314	180,157	4,397	40.97	0.299
WlmVly	DALLAS/INDEPENDENCE	DALLAS	4M201	INDUSTRIAL	4	2,221	35	63.46	0.114
WlmVly	DALLAS/INDEPENDENCE	DALLAS	4M202	ELLENDALE	789	74,828	2,896	25.84	0.272
WlmVly	DALLAS/INDEPENDENCE	DALLAS	4M238	DALLAS	1,547	402,978	2,315	174.07	0.668
WlmVly	DALLAS/INDEPENDENCE	INDEPENDENCE	4M22	RICKREAL	4,435	228,116	1,984	114.98	2.235
WlmVly	DALLAS/INDEPENDENCE	INDEPENDENCE	4M25	BUENA VISTA	11,850	927,664	3,097	299.54	3.826
WlmVly	LEBANON	BROWNSVILLE	4M17	CALAPOOIA	6,332	226,690	1,919	118.13	3.300
WlmVly	LEBANON	CROWFOOT	4M204	CROWFOOT	1,785	203,133	1,532	132.59	1.165
WlmVly	LEBANON	CROWFOOT	4M206	US PLYWOOD (LEBA	4,764	726,120	1,766	411.17	2.698
WlmVly	LEBANON	LEBANON	4M61	TANGENT	5,199	99,178	2,477	40.04	2.099
WlmVly	LEBANON	LEBANON	4M62	RALSTON	4,235	78,593	2,026	38.79	2.090
WlmVly	LEBANON	LEBANON	4M63	TENNESSEE	4,345	299,957	1,851	162.05	2.347
WlmVly	LEBANON	LEBANON	4M79	CROWN Z	1,032	39,820	990	40.22	1.042
WlmVly	LEBANON	SWEET HOME	4M37	HOLLEY	7,515	948,248	2,054	461.66	3.659
WlmVly	LEBANON	SWEET HOME	4M38	NARROWS	2,607	395,411	993	398.20	2.625
WlmVly	LEBANON	SWEET HOME	4M93	AMES CREEK	3,507	318,316	1,710	186.15	2.051
WlmVly	LEBANON	SWEET HOME	4M94	FOSTER	9,905	1,983,765	2,316	856.55	4.277
WlmVly	STAYTON	NEW LYONS	4M120	MILL CITY	5,719	614,968	1,967	312.64	2.907
WlmVly	STAYTON	NEW LYONS	4M70	MEHAMA	3,569	428,156	997	429.44	3.580
WlmVly	STAYTON	NEW STAYTON	4M19	AUMSVILLE	822	205,443	3,140	65.43	0.262
WlmVly	STAYTON	NEW STAYTON	4M353	WEST STAYTON	2,575	845,957	3,448	245.35	0.747
WlmVly	STAYTON	NEW STAYTON	4M370	CASCADE	8,815	528,824	1,551	320.31	5.339
WlmVly	STAYTON	NEW STAYTON	4M50	3RD STREET	67	15,248	952	16.02	0.070
WlmVly	STAYTON	SCIO	5M126	THOMAS	6,709	661,886	1,603	412.90	4.185

**Oregon 2013 Circuit Metrics (including major events)**

OR Reliability Region	Op Area Name	Substation Name	Circuit Id	Circuit Name	Customers In Incident Sustained	Customer Minutes Lost for Incident	Circuit Customer Count	SAIDI	SAIFI
South OR	ROSEBURG/MYRTLECREEK	GARDEN VALLEY	4U81	VALLEY	191	24,183	1,322	18.29	0.144
South OR	ROSEBURG/MYRTLECREEK	GAZLEY	5U46	CANYONVILLE	499	79,618	426	186.90	1.171
South OR	ROSEBURG/MYRTLECREEK	GAZLEY	5U52	BEALS CREEK FEED	1,869	519,786	910	571.19	2.054
South OR	ROSEBURG/MYRTLECREEK	GLIDE SUBSTATION	5U83	IDLEYLD	3,750	1,126,509	1,004	1122.02	3.735
South OR	ROSEBURG/MYRTLECREEK	GLIDE SUBSTATION	5U84	LITTLE RIVER	4,843	1,724,191	1,354	1273.41	3.577
South OR	ROSEBURG/MYRTLECREEK	GREEN SUBSTATION	5U32	SAFARI	1,036	235,017	2,281	103.03	0.454
South OR	ROSEBURG/MYRTLECREEK	GREEN SUBSTATION	5U33	SUNNYSLOPE	333	38,485	1,453	26.49	0.229
South OR	ROSEBURG/MYRTLECREEK	ILLAHEE FLATS	6U13	ILLAHEE FLATS SIM	52	6,806	26	261.78	2.000
South OR	ROSEBURG/MYRTLECREEK	LEMOLO # 1	5U920	DIAMOND LAKE	1,361	250,479	179	1399.33	7.603
South OR	ROSEBURG/MYRTLECREEK	MYRTLE CREEK	5U76	SUPER Y	486	76,108	1,566	48.60	0.310
South OR	ROSEBURG/MYRTLECREEK	MYRTLE CREEK	5U77	BOOMER HILL	1,360	148,041	2,335	63.40	0.582
South OR	ROSEBURG/MYRTLECREEK	OAKLAND (OR)	5U11	UMPQUA	303	23,358	1,368	17.07	0.221
South OR	ROSEBURG/MYRTLECREEK	OAKLAND (OR)	5U12	STAGECOACH	7	702	551	1.27	0.013
South OR	ROSEBURG/MYRTLECREEK	RIDDLE	5U1	TRI CITY	23	4,127	1,022	4.04	0.023
South OR	ROSEBURG/MYRTLECREEK	RIDDLE	5U2	COW CREEK	150	17,531	1,611	10.88	0.093
South OR	ROSEBURG/MYRTLECREEK	RIDDLE	5U3	HANNA	17	5,366	270	19.87	0.063
South OR	ROSEBURG/MYRTLECREEK	ROSEBURG	4U10	DIAMOND	6,199	398,108	2,503	159.05	2.477
South OR	ROSEBURG/MYRTLECREEK	ROSEBURG	4U22	DIXON	2,671	207,619	1,104	188.06	2.419
South OR	ROSEBURG/MYRTLECREEK	ROSEBURG	4U5	DOUGLAS	4,381	176,295	2,098	84.03	2.088
South OR	ROSEBURG/MYRTLECREEK	SLIDE CREEK	6U76	SLIDE CREEK CAMP	6	427	6	71.13	1.000
South OR	ROSEBURG/MYRTLECREEK	SODA SPRINGS HE PLT	6U1	DRY CREEK	1	39	24	1.65	0.042
South OR	ROSEBURG/MYRTLECREEK	SOUTHGATE	4U30	SHADY POINT	51	5,589	1,598	3.50	0.032
South OR	ROSEBURG/MYRTLECREEK	SOUTHGATE	4U31	BOOTH	127	12,581	1,375	9.15	0.092
South OR	ROSEBURG/MYRTLECREEK	STEAMBOAT	6U18	STEAMBOAT	44	5,759	22	261.78	2.000
South OR	ROSEBURG/MYRTLECREEK	SUTHERLIN	5U35	NON-PAREIL	266	15,584	1,342	11.61	0.198
South OR	ROSEBURG/MYRTLECREEK	SUTHERLIN	5U36	DEADY	764	59,401	1,326	44.80	0.576
South OR	ROSEBURG/MYRTLECREEK	SUTHERLIN	5U56	Industrial	952	130,383	474	275.07	2.008
South OR	ROSEBURG/MYRTLECREEK	TILLER	5U89	JACKSON CRK	684	62,873	322	195.26	2.124
South OR	ROSEBURG/MYRTLECREEK	TOKETEE	8U12	TOKETEE CITY	24	2,217	19	116.69	1.263
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	4U18	WILBUR	147	27,182	1,667	16.31	0.088
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	5U15	NEWTON CREEK	670	37,614	1,760	21.37	0.381
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	5U17	FISHER	1,003	489,632	746	656.34	1.345
South OR	ROSEBURG/MYRTLECREEK	WINCHESTER	5U19	EVANS	193	24,313	749	32.46	0.258
South OR	ROSEBURG/MYRTLECREEK	WINSTON	5U48	BROCKWAY	133	18,334	882	20.79	0.151
South OR	ROSEBURG/MYRTLECREEK	WINSTON	5U49	DILLARD	270	58,059	1,478	39.28	0.183
W/mVly	ALBANY	HAZELWOOD	4M335	WEST HIGH	281	21,256	1,487	14.29	0.189

## **X1 – VEGETATION MANAGEMENT**

### ***Program Overview***

The Company *Specification Manual* includes program descriptions, specifications and protocols for all vegetation management work, including customer relations. The manual's objective is to provide direction for all vegetation management staff, from foresters, contract general foremen and supervisors, forest techs and utility tree workers on PacifiCorp's system. Furthermore, it provides important program information to all PacifiCorp employees about key facets of the Company's vegetation management practices.

### ***Qualifications***

PacifiCorp employs a staff of professional foresters to manage its vegetation program and communicate effectively the community service it provides. Moreover, contractor front line managers, supervisors, forest techs, are required to be International Society of Arboriculture (ISA) Certified Arborists and ISA Certified Utility Specialists.

PacifiCorp's vegetation management program is founded on best practices from the ISA. These practices include systematic maintenance, scientifically-based pruning, tree removal, tree replacement, herbicide and tree growth regulator applications, as well as specialized tools and equipment. PacifiCorp takes a progressive approach in vegetation management by trying innovative methods, products and equipment in order to improve safety and productivity.

### ***Tree Line USA***

PacifiCorp has been a Tree Line USA recipient since 2001. Tree Line USA is an award from the National Arbor Day Foundation, which recognizes utilities for utilizing practices that protect America's urban forests. To qualify, utilities must apply scientifically-based tree care, conduct annual worker training, plant trees, and conduct public education, including participating in Arbor Day celebrations. Contract employees should participate in annual worker training to cooperate with and help PacifiCorp continue to merit this outstanding award.

### ***Importance of Effective Vegetation Management***

Trees growing into or near power lines can create safety and service reliability risks, so they are a constant concern for utilities such as PacifiCorp. Close growing branches can provide access for the public to contact high-voltage lines, with potential for serious injury or death. Branches touching power lines can spark and start fires and cause interruptions in electric supply. Furthermore, trees whipped by winds or weighed down by rain or snow often interrupt power, disrupting business and home life, as well as compromising important community infrastructure, such as hospitals and emergency services. Three major electric grid failures, including the catastrophic blackout on August 14, 2003, were initiated by tree-caused outages on transmission lines.

For these reasons and others, the National Electric Safety Code Section 218-A-1, states:

*"Trees which may damage ungrounded supply conductors should be trimmed or removed. Note: Normal tree growth, the combined movement of trees and conductors under adverse weather conditions, voltage and sagging of conductors at elevated temperatures are among the factors to be considered in determining the extent of trimming required."*

Accordingly, electric utilities, such as PacifiCorp, manage their systems to reduce electric supply and service reliability risks by clearing trees from power lines. Often, the best solution is to remove tall-growing trees and replace them with low-growing species that will never interfere with the high-voltage lines, especially for transmission line. However, it is not always possible to remove conflicting trees. Trees that may not be removed are pruned to clear the utility space using the modern arboriculturally-sound pruning practices.

### ***X-1 Reports Provided***

These reports are included in the following order:

- *Section A&B Operating Area Summary Distribution & Transmission Status Report*

Sections A&B report distribution cycle line miles completed against schedule, and provides distribution cost per tree and mile along with removal rates. It further summarizes transmission schedule adherence, and progress against cycle goals.

- *Section C 10-Year Vegetation Management Plan*

Section C displays historical performance and future plans for vegetation management in Oregon.

- *Section D Tree-Related Safety Issues*

Section D provides information on four categories of tree-safety issues, including electrical contacts, powerline-cause fires, and climbable trees reported and corrected.

- *Section E Service Reliability Metrics: Outages*

Section E identifies outages reported as non-preventable and preventable tree causes during the year.

- *Section F Scheduled versus Non-Scheduled Work Measures*

Section F provides an overview of the amount of programmed scheduled versus nonscheduled (response to customer requests) performed during the year.



**OREGON**  
**Tree Program Reporting**  
**Report as of December 31, 2013**  
**Distribution Four Year Cycle 1/1/2012-12/31/2015**

	Total		Current Year Reporting				Total Cycle Reporting			
	Total Line Miles	1/1/2013-12/31/2013 Miles Planned	1/1/2013-12/31/2013 Actual Miles	1/1/2013-12/31/2013 Ahead/Behind	1/1/2013-12/31/2013 % Ahead/Behind	1/1/2012 through end of cycle Miles Planned	1/1/2012 through end of cycle Actual Miles	1/1/2012 through end of cycle Ahead/Behind	1/1/2012 through end of cycle % Ahead/Behind	
	column a	column b	column c	column d	column e	column f	column g	column h	column i	
Oregon	13,756	3,559	3,397	-162	95.4%	7,087	5,051	-2,036	71.3%	
ALBANY	613	153	420	267	274.5%	307	434	128	141.6%	
CORVALLIS	293	73	0	-73	0.0%	147	117	-30	79.9%	
COTTAGE GROVE	52	13	0	-13	0.0%	26	0	-26	0.0%	
DALLAS	405	101	0	-101	0.0%	203	0	-203	0.0%	
JUNCTION CITY	154	38	0	-38	0.0%	77	68	-9	88.3%	
LEBANON	606	151	0	-151	0.0%	303	0	-303	0.0%	
LINCOLN CITY	162	41	36	-5	87.8%	81	59	-22	72.8%	
STAYTON	433	108	279	171	258.3%	217	279	63	128.9%	
COOS BAY	642	160	88	-72	55.0%	321	99	-222	30.8%	
GRANTS PASS	1,596	399	212	-187	53.1%	798	292	-506	36.6%	
ROSEBURG	1,186	297	252	-45	84.8%	593	360	-233	60.7%	
KLAMATH FALLS	1,845	461	554	93	120.2%	923	884	-39	95.8%	
LAKEVIEW	73	15	49	34	326.7%	37	49	13	134.2%	
MEDFORD	1,897	474	586	112	123.6%	949	678	-271	71.5%	
CENTRAL OREGON	1,327	332	195	-137	58.7%	664	454	-210	68.4%	
CLATSOP	370	92	82	-10	89.1%	185	122	-63	65.9%	
ENTERPRISE	431	108	127	19	117.6%	216	204	-12	94.7%	
HERMISTON	254	64	0	-64	0.0%	127	66	-61	52.0%	
HOOD RIVER	304	76	192	116	252.6%	152	242	90	159.2%	
PENDLETON	627	157	176	19	112.1%	314	284	-30	90.6%	
PORTLAND	421	210	134	-76	63.8%	419	269	-150	64.2%	
WALLA WALLA	65	36	15	-21	41.7%	33	91	59	280.0%	

Distribution cycle \$/tree: \$23.91  
 Distribution cycle \$/mile: \$4,434  
 Distribution cycle removal %: 73.28%

**Transmission**

Total Line Miles	Line Miles Scheduled	Line Miles Worked	Miles Ahead(behind) Schedule	Miles on Schedule	% of miles on/behind Schedule
2,975	284	318	34	3,009	101%

Transmission \$/mile: \$13,480

**Notes:**

- Column a: Total overhead pole miles by district
- Column b: Total overhead pole miles planned for the period January 1, 2013 through December 31, 2013
- Column c: Actual overhead pole miles worked during the period January 1 2013 through December 31, 2013
- Column d: Miles ahead or behind for the period January 1, 2013 through December 31, 2013 (column c-column b)
- Column e: Percent of actual compared to planned for the period January 1, 2013 through December 31, 2013 ((column c+column b)×100)
- Column f: Total overhead pole miles planned for the period January 1, 2012 through end of cycle
- Column g: Actual overhead pole miles worked during the period January 1 2012 through end of cycle
- Column h: Miles ahead or behind for the period January 1, 2012 through end of cycle (column g-column f)
- Column i: Percent of actual compared to planned for the period January 1, 2012 through end of cycle ((column g+column f)×100).

**OREGON**  
**Tree Program Reporting (C)**

	2013	2014 est. <sup>1,2</sup>	2015 est. <sup>1,2</sup>	2016 est. <sup>1,2</sup>	2016 est. <sup>1,2</sup>	2017 est. <sup>1,2</sup>
Distribution						
Tree Budget	19,666,136	19,666,136	19,666,136	16,666,136	16,666,136	16,666,136
Transmission						
Tree Budget	3,033,067	3,033,067	3,033,067	3,033,067	3,033,067	3,033,067
<b>Total Tree Budget</b>	<b>\$ 22,699,203</b>	<b>\$ 22,699,203</b>	<b>\$ 22,699,203</b>	<b>\$ 19,699,203</b>	<b>\$ 19,699,203</b>	<b>\$ 19,699,203</b>

	CY2007	CY2008	CY2009	CY2010	2011	2012
Distribution						
Tree Actuals	\$ 15,719,793	\$ 15,350,304	13,846,144	14,064,912	13,853,185	16,995,719
Transmission						
Tree Actuals	\$ 2,138,502	\$ 2,820,632	3,033,066	3,125,438	3,762,895	3,734,977

<b>Total Tree Actuals</b>	<b>\$ 17,858,295</b>	<b>\$ 18,170,935</b>	<b>\$ 16,879,210</b>	<b>\$ 17,190,350</b>	<b>\$ 17,616,080</b>	<b>\$ 20,730,696</b>
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Calendar year 2013	Distribution		Transmission		Variance
	Actuals	Budget	Actuals	Budget	
Jan	\$ 1,778,411	1,638,845	\$ 438,387	\$ 195,881	\$ 242,506
Feb	\$ 1,421,460	1,572,709	\$ 314,984	\$ 209,183	\$ 105,801
Mar	\$ 1,601,739	1,704,980	\$ 376,890	\$ 244,793	\$ 132,097
Apr	\$ 1,628,307	1,638,845	\$ 347,627	\$ 275,314	\$ 72,313
May	\$ 1,555,876	1,704,980	\$ 459,474	\$ 290,897	\$ 168,577
Jun	\$ 1,494,244	1,638,845	\$ 446,723	\$ 235,968	\$ 210,755
Jul	\$ 1,559,184	1,638,845	\$ 491,986	\$ 333,639	\$ 158,347
Aug	\$ 1,428,953	1,771,116	\$ 433,594	\$ 308,888	\$ 124,706
Sep	\$ 1,440,828	1,506,574	\$ 306,232	\$ 284,883	\$ 21,349
Oct	\$ 1,541,655	1,771,116	\$ 361,958	\$ 273,152	\$ 88,806
Nov	\$ 1,410,478	1,506,574	\$ 224,367	\$ 196,006	\$ 28,361
Dec	\$ 1,390,116	1,572,709	\$ 160,928	\$ 184,463	\$ (23,535)
<b>Total</b>	<b>\$ 18,251,251</b>	<b>\$ 19,666,136</b>	<b>\$ 4,363,149</b>	<b>\$ 3,033,067</b>	<b>\$ 1,330,082</b>

**Average # Tree Crews on Property (YTD)**

80

<sup>1</sup> Amounts acquired from Vegetation Management ten year plan. 2013-2015 include \$3M additional funding.

<sup>2</sup> Tree removals reduce costs in future years, while herbicide costs are assumed to increase in same time period.

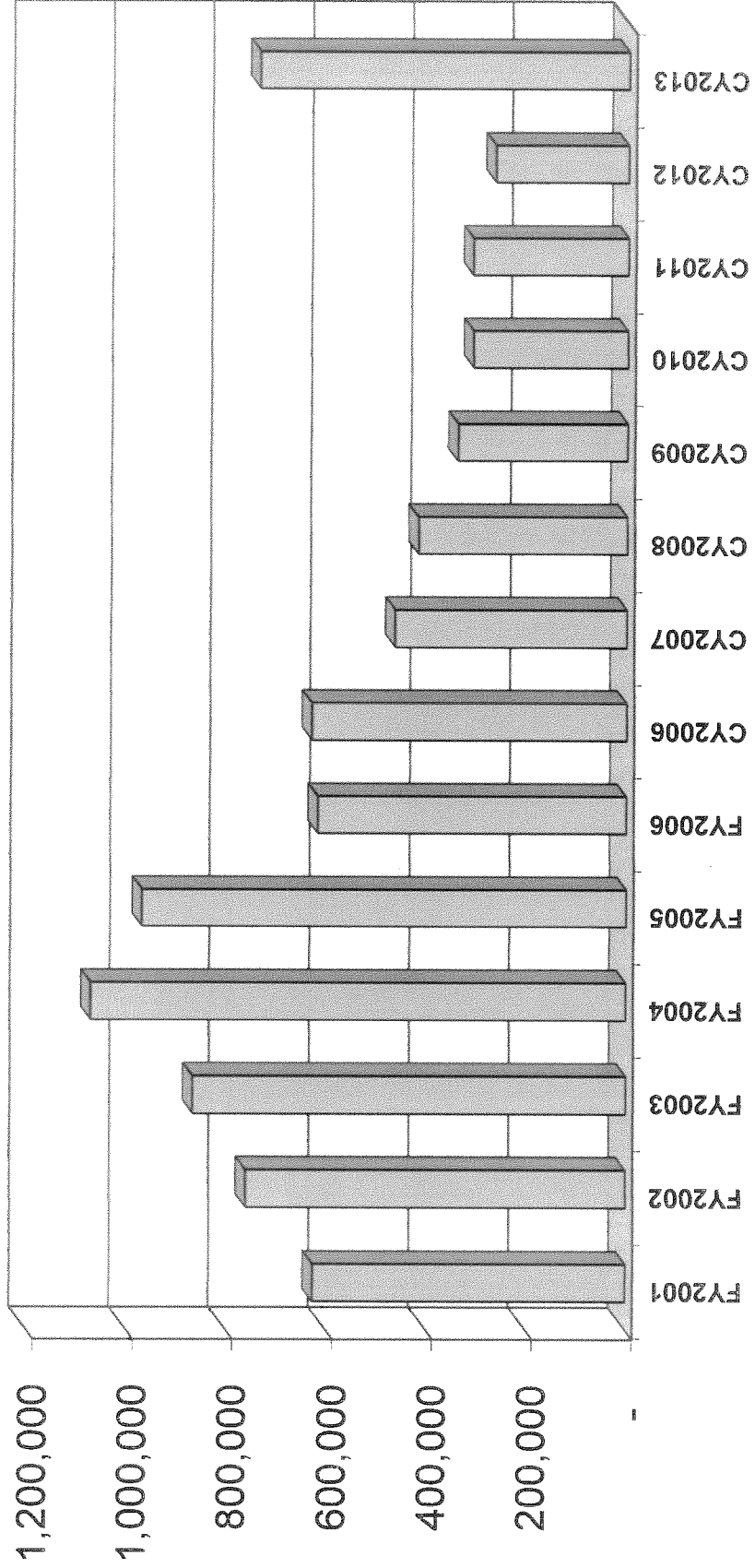
**OREGON**  
**Tree Program Reporting (D, E, F)**

<b>D. Tree Related Safety Issues</b>	
# Public electrical contacts involving trees	0
# Powerline caused fires	3
# Readily climbable trees reported	0
# Readily climbable trees corrected	0
<b>E. Service Reliability</b>	
# Non-preventable tree related outages	946
# Preventable tree related outages	41
# Total tree related outages	987
<b>F. Scheduled Work vs. Non-scheduled work</b>	
Distribution non-scheduled work compared to total annual costs:	4% non-scheduled      96% scheduled
Transmission non-scheduled work compared to total annual costs:	2% non-scheduled      98% scheduled

**OREGON INCIDENT REPORT**  
**TREE-RELATED FIRE**

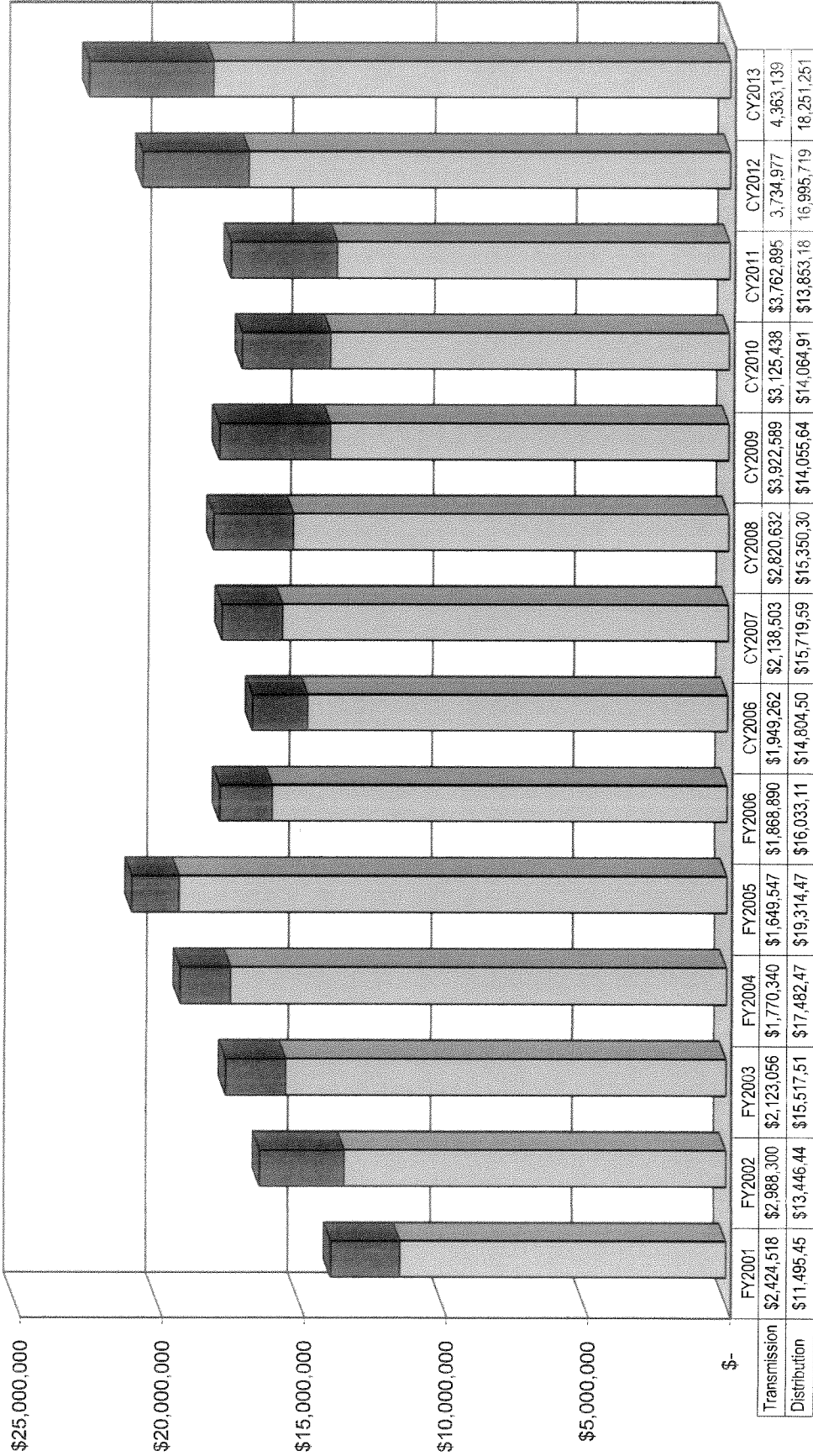
- 1** Incident Date: 4/25/2013  
Date Reported: 5/2/2013  
Location: Prospect 3 - Prospect Central 69kV transmission line, structure 2/7.  
Address: Off Butte Falls/Prospect Highway  
City: Prospect  
Description of incident: Dead white fir tree, 90' tall, 20" in diameter failed at base of tree and contacted and burned through one conductor phase. Tree was located 87' from center line and outside of easement. Fire originated in vicinity of base of tree and not where tree top burned through phase. Approximately one acre of vegetation/trees burned, no structures.
- 2** Incident Date: 9/2/2013  
Date Reported: 9/5/2013  
Location: 8000 Dead Indian Memorial Highway  
Address: Same  
City: Ashland  
Description of incident: Large stem of oak failed due to decay at attachment. Failed stem was 30 inches in diameter and 80' in length and broke off at 10' above ground height. Base of oak located 28 feet from outside phase and 32 feet from center line of right of way. When stem broke it struck an 18 inch incense cedar breaking it off at approximately 25 feet. The oak stem and cedar top fell through wire, which brought conductors to ground, igniting a small fire of about 900 square feet that burned dry grass and brush.
- 3** Incident Date: 7/27/2013  
Date Reported: 7/27/2013  
Location: structures 3/30- 4/30 Minam 69KV line  
Address: No physical address- Forested area. Highway 82 East out of Elgin. Left turn on Merritt Lane. This is top of the hill before dropping into Minam Canyon. Go two miles or so, take a right on Rawhide Lane. After one mile on Rawhide Lane, turn into a trail at a wide spot. The fire was on the left.  
City: Elgin, OR  
Description of incident: Dead pine tree from outside 60' wide r/w fell on 69KV line. It appears to have hung on wires until wires burned down. Approximately 40 acres burned. No structures. Mostly abandoned farmland converting to forest land.

# Distribution Trees Worked



# Vegetation Expenditure History

■ Distribution   ■ Transmission



## X2 – INSPECTION AND MAINTENANCE PROGRAMS

### *Inspection and Repairs*

In Calendar Year 2013 (January 1 through December 31, 2013), among distribution and transmission facilities (both overhead and underground), 1,584 'A' Priority conditions were recorded and 1,557 were corrected.

For 'B' priority conditions, 18,758 were identified and 28,349 (151.1%) were corrected in CY2013.

For 'C' priority conditions, 6,674 were identified and 9,145 (137.0%) were corrected in CY2013.

### *Vegetation Management:*

Vegetation Management issues regarding tree trimming and tree climbing that do not pose an imminent threat are not logged into PacifiCorp's main reporting system if found during normal line inspections. These issues are routinely and consistently resolved through the internal cyclical vegetation maintenance program managed by PacifiCorp's Vegetation Management Department. Consequently, these conditions have been removed from the condition counts reported above for CY2013. The total vegetation conditions excluded are as follows:

TREECLMB

Identified: 0

Corrected: 0

TREETRIM

Identified: 100

Corrected: 144

### *Customer Issues:*

All conditions for which a customer correction is required are excluded from the condition counts reported in CY2013. The total numbers of customer conditions excluded from the condition counts reported above are as follows:

OWNERPRB

Identified: 3

Corrected: 3

LOWWHEAD

Identified: 176

Corrected: 355

CUSTRESP

Identified: 3,262

Corrected: 1,139

## ***Pole and Overhead Facilities***

- PacifiCorp is currently on a 10-year cycle for the Detail inspection and treatment of overhead Distribution and Transmission facilities. In CY2013, 48,014 Distribution poles, 5,623 Local Transmission poles and 7,004 Main Grid Transmission poles were Detail inspected. Detail inspections were performed on 13.2% of the total 459,222 overhead facilities. Additionally 556 Distribution poles were given a second Detail inspection in CY2013 due to failure of the internal audit process of the initial inspection results or as a follow up aerial inspection of woodpecker damage.
- 43,457 Distribution poles, 4,573 Local Transmission poles and 238 Main Grid Transmission poles were Tested and Treated. Test and Treatment was performed on 10.5% of the total 459,222 overhead facilities.
- PacifiCorp replaced or reinforced 1,330 poles that were rejected through the inspection program. The CY2013 rejection rate was 1.85% for Distribution, 3.02% for Local Transmission and 5.46% for Main Grid Transmission. The overall reject rate for CY2013 was 1.98%.

### ***A. Visual Inspections***

The visual inspection of the Distribution and Transmission system is on a 2-year cycle. In CY2013, 223,538 Distribution poles, 20,854 Local Transmission poles and 18,486 Main Grid poles were inspected for a total of 262,878 poles which equates to 57.2% of the total overhead facilities. Random re-inspections were performed by operations managers to ensure uniform results and adherence.

### ***B. Underground Facilities***

The inspection of underground facilities is on a 10-year cycle. It includes a detail inspection of primary underground facilities and an infrared inspection of accessible terminals and splices. During CY2013, 10,999 facilities were inspected; 9.4% of 116,841 underground facilities.

### ***C. Marina Inspection Program***

The inspection of marinas is annual. In CY2013, 100% of marinas were inspected.

### ***D. Line Equipment Maintenance***

#### **Line Equipment – Overhead Reclosers, Sectionalizers, Regulators, Switches**

Line equipment is inspected during the 2-year cycle Visual Survey; therefore, inspection requirements have been met for Reclosers, Sectionalizers and Regulators and Switches.



## **X3 – SUBSTATION MAINTENANCE PROGRAMS**

### ***A. Performance Measure X3 Substation Maintenance Programs***

1. **Description** - Substations are critical utility network facilities requiring more frequent inspections and testing of all its equipment. The Company will provide, at the annual meetings, information of its Substation maintenance programs.
2. **Program Interval** - The program interval will be dictated by the substation equipment operational requirements.
3. **Program Expenditures** - PacifiCorp is to submit an annual actual versus budgeted expenditures for all substations equipment maintenance programs

### ***B. Substation Security Inspections***

Substation security inspections are performed on cycles based on policy. This includes a detailed inspection of the fence, gates, warning signs, grounding systems, etc. The inspector is trained to look for security violations and public hazards. Copies of the inspection results are filed at the substation and field office. Field personnel are instructed to immediately correct all perimeter security violations.

Reference PacifiCorp Maintenance Policy 034 - Substation Inspection Policy and form 3274F-Substation Inspection.

PacifiCorp operates 268 substation and communication facilities in Oregon. PacifiCorp met 98% of the Security inspection requirement in CY2013.

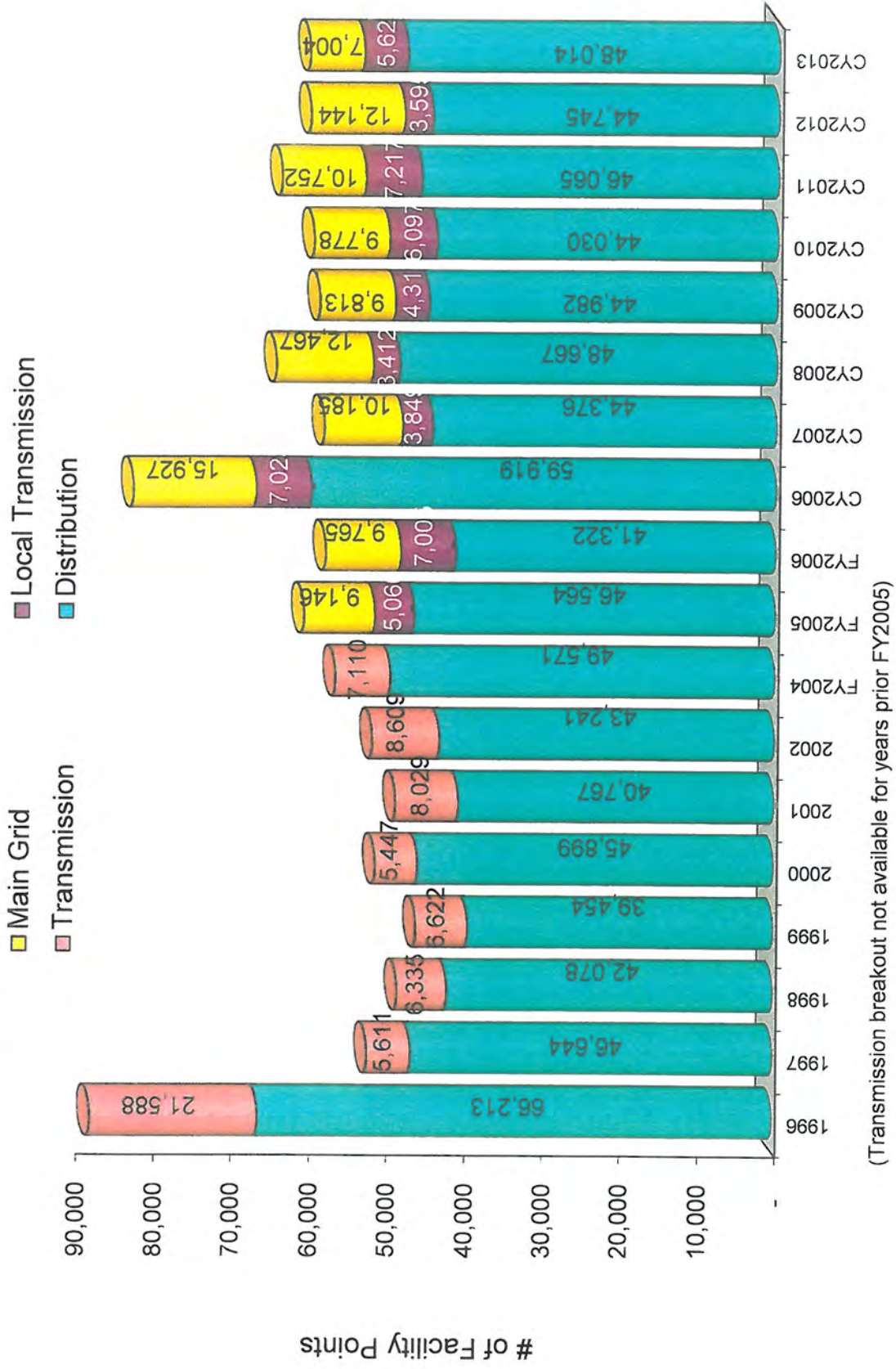
### ***C. Substation Equipment Inspections***

Batteries, Capacitor Banks, Circuit Breakers, Switches, LTC's, Regulators, Transformers, and protective relays are inspected on cycles based on policy. Inspections check pressure, temperature, voltage, LTC and regulator operation, cooling equipment, insulators, relay targets, etc.

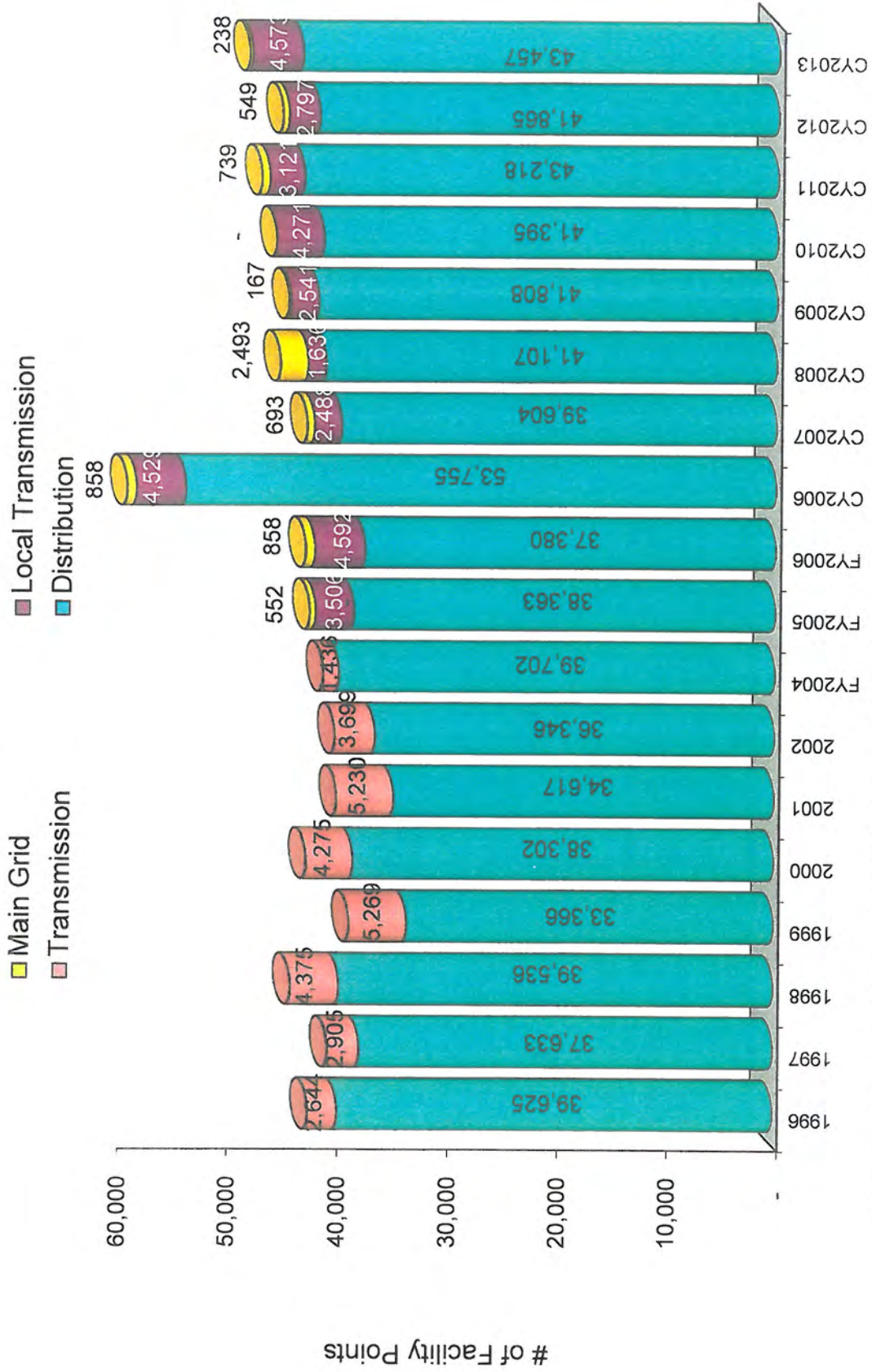
Reference PacifiCorp Maintenance Policy 034 - Substation Inspection Policy and form 3274F-Substation Inspection.

PacifiCorp performed 98% of the Oregon Inspection requirement in CY2013.

# CY2013 Overhead Detail Inspection History

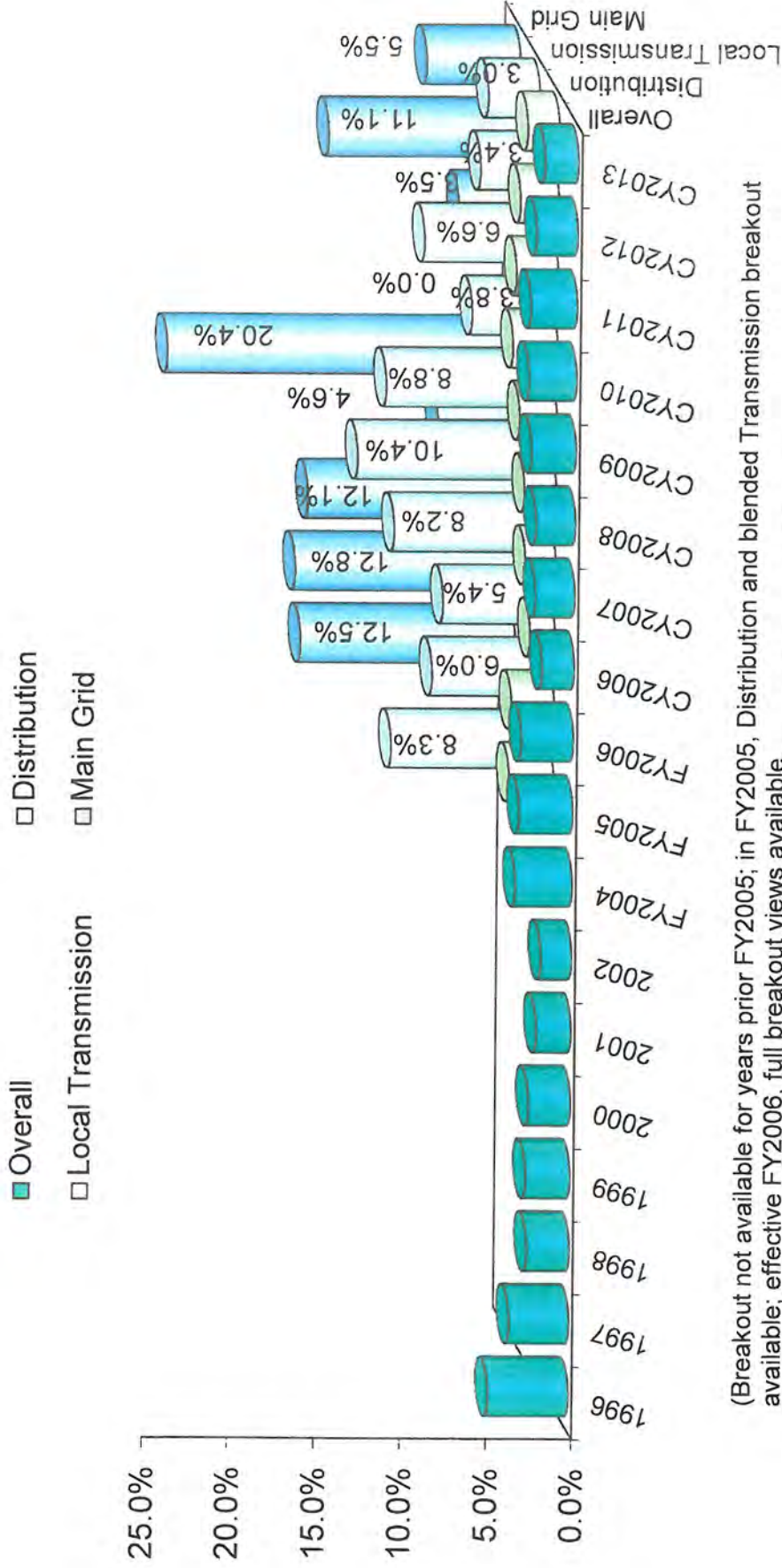


# CY2013 Test & Treat History



(Transmission breakout not available for years prior FY2005)

# CY2013 Test & Treat Reject Rate History



(Breakout not available for years prior FY2005; in FY2005, Distribution and blended Transmission breakout available; effective FY2006, full breakout views available.  
Main Grid rates combine intrusive inspection rejects with detail inspection BOPOLE.)

## X2 – METERS

### ***New Meter Quality Assurance Program***

The meter manufacturers test all new single-phase and polyphase meters before being shipped to the company and provide certified test data for these meters.

The company analyzes all new meter certified test data to assure that company expectations, requirements and specifications are met. Any meters that do not meet the analysis criteria are rejected and returned to the manufacturer.

The company has a sample quality assurance (QA) evaluation and testing program for new residential type meters. As part of this program, the company conducts inspections of manufacturer's facilities, and district meter shops are asked to randomly select, inspect and test a pallet of new residential meters. In addition, the main Meter Test Facility may retest meters selected from one of several district shops. QA testing is conducted in order to validate:

- That meter shipping and handling is not causing accuracy or other problems.
- The laboratory accuracy standardization process between the company and the manufacturers.
- That the quality of the new meters delivered meets company expectations and specifications.

The company has a 100% QA evaluation and testing program for new instrument-rated meters. District meter shops, before or within 90 days of installation, test all new single- and polyphase instrument-rated meters.

### ***In-Service Sample Test Program***

The company conducts an annual in-service sample test program. Random samples with billing multipliers less than 40 are selected from each homogeneous meter group. Manufacturer, electrical-phase, model and serial number are used to group the meter populations selected for sample testing and analysis. Over 6,000 meters company-wide were sample tested this past year.

In year 2008, the Westinghouse model C and the GE I-14, 16 and 20 single-phase meter groups were removed from the scheduled testing due to the population size not being large enough for an adequate sample. These meter groups are already on the company's meter retirement list with instructions to retire whenever a site is visited and to retire any in stock. In addition, a certain number of these models are selected and assigned to be removed on a monthly basis.

For three consecutive years, 2010, 2011, and 2012, the Westinghouse model D5 did not meet ANSI Z1.9 criteria and failed the annual in-service sample test program. This meter model is listed on the company's meter retirement list with instructions to retire

whenever a site is visited and to retire any in stock. PacifiCorp's retirement program helps ensure removal of these meters from service on a timely basis.

For two consecutive years, 2011 and 2012, the GE model EV did not meet ANSI Z1.9 criteria and failed the annual in-service sample test program. This meter model is listed on the company's meter retirement list with instructions to retire whenever a site is visited and to retire any in stock. PacifiCorp's retirement program helps ensure removal of these meters from service on a timely basis.

### ***In-Service Periodic Test Program***

The company has an annual periodic testing and site inspection program in place divided into 2-year, 8-year and 16-year intervals based on the billing multiplier of the meter. This program is to assure proper and accurate metering equipment operation for accounts with billing multipliers of 40 or greater. The number of periodic tests company-wide was over 4,600 this past year.

The company's metermen conduct inspections looking for evidence of meter tampering, energy theft and unsafe conditions. Tests are performed to verify wiring, instrument transformer ratio and burden performance, phase-angles and power factor, and meter accuracy. The company's Customer Service System (CSS) is also reviewed to verify the correctness of the rate schedule, billing multiplier and other metering information needed for accurate billing.

### ***Uniquely Defective Meter Analysis***

When visiting the sample and periodic test sites, the metermen assign each meter with an "as-found condition code". These codes are analyzed for trends as part of the Uniquely Defective Meter analysis.

The company's metering department evaluates the uniquely defective meter lists developed from the sample and periodic testing programs. The evaluation process is intended to recognize meter groups with design or manufacturing deficiencies in addition to those developing a history of poor performance.

The evaluation includes the analysis of design or manufacturing deficiencies that could eventually lead to accuracy or other meter problems. Meter groups with problems are identified and, if appropriate, a retirement program is established.

The analysis includes examination of logical sub-groups within homogeneous groups, geographic areas, serial number ranges, meter age and consultations with manufacturers.

### ***Meter Retirement Programs***

The company's metering assets and technology group evaluates the Sample Test Program as well as the Uniquely Defective Meter Reports, for both Sample and

Periodic Test Programs, to determine if a retirement program should be established for any identifiable meter groups, models or subgroups.

The state of Oregon has additional meter retirement programs that list the categories High Maintenance, Special Problem and Failed Sample meter models and groups.

### ***Watt-hour Standards Certification***

The company maintains a certification program for watt-hour standards that are used to test meters. The metermen's field working standards are certified annually to an accuracy of +/-0.05%.

The company uses the Radian RD-22 as a portable standard between the Radian RD-23 Lab Standard and the metermen's field working standards. The transfer standards are certified quarterly.

The company maintains a basic watt-hour reference standard, the Radian RD-23 Lab Standard, that is certified annually with results traceable to the National Institute of Standards and Technology.

### ***Energy Theft and Revenue Protection***

Metering assets and technology processes and summarizes a monthly inspection report on metering problems found by metermen. The type of meter problem, calculated dollar losses, and the resolution on collection of the losses are documented.

## **X2 – STANDARDS**

PacifiCorp's Standards mission is to produce policies and practices that enhance consistently high construction quality and provide highly durable materials at the lowest possible cost. Additionally, it is incumbent upon the Company to ensure that aged facilities are also properly inspected and maintained to ensure safe and reliable operations throughout its life. In delivering this mission, many of the responsibilities to ensure this high quality and low cost delivery are integrated throughout the Company. The products and services that achieve this mission are listed below:

### ***Policies and Practices***

The Company develops, evaluates and publishes construction, maintenance and inspection Policies and Practices. These cover the wide gamut of older facilities and construction to newly evolving technologies and materials for the electrical system.

### ***Electrical Service Requirements Manual***

In FY2011, the Company updated the company-wide Electric Service Requirements manual. The manual incorporates all six states' ESR and was reviewed by each state's regulatory staff. This manual provides customers with information to follow to effectively receive electric service. Guidance is given regarding safety clearance requirements and typical installation practices so that the Company can work with the customer to deliver safe electric service.

### ***Automated Construction Design Tool***

The Company uses an automated Construction Design Tool, which provides cost estimating, material ordering, proper engineering design and financial accounting data. Company estimators and planners use the system to specify properly engineered designs and materials. Construction forces use this system to order the materials needed to provide a safe, highly reliable and highly durable electrical system at the lowest customer cost. It is also used to by Purchasing to purchase the type and quantities of materials needed by the Company. This allows optimum negotiation, yielding the lowest possible costs for high quality materials. Company accountants are supported in the proper accounting of material costs, labor charges and overhead costs, due to its automatic integration into the Company financial systems.

### ***Code Support***

Code expertise is provided to answer questions of compliance with applicable NESC (National Electrical Safety Code), NEC (National Electrical Code), state regulations, as well as other codes, rules and regulations.

### ***Standards Support***

Respond to day to day questions about proper construction and engineering practices. The department answers questions and provides engineering expertise and design



resources (in the form of engineering data or computer programs) to help field designers provide our customers with the highest possible levels of quality and service.

### ***Document Support***

The Company maintains detailed construction drawings, construction procedures, training material and engineering data, which is published in hardcopy form and also within the company web site.

### ***Standards Advisory Committee***

In order to prioritize activities that deliver the highest value in meeting the goals of low cost, high quality delivery of electricity, the Company established the Standards Advisory Committee, which is comprised of field construction managers who advise of needed policies and priorities for such development.

### ***Engineering and Quality Evaluations***

The Company ensures the quality of a variety of services and goods provided, including that of materials and material suppliers, construction and inspection services.

### ***Quality Assurance Programs***

The Company conducts random audits across a variety of goods and services rendered to ensure that appropriate quality levels are being delivered by its vendors. Substantial effort is made to increase the delivered quality of services provided.

## X3 - UNDERGROUND CABLE REPLACEMENT

### *Background*

The life expectancy performance of underground cable is a function of the quality of the design, manufacturing process, installation, load characteristics and environmental conditions of the cable. Since PacifiCorp's use of underground cable began in the 1960's, design improvements have over the years provided substantial improvements in the life expectancy of underground cable. The underground cable replacement program identifies cable that is approaching the end of its serviceable life and replaces it to maintain acceptable customer service levels.

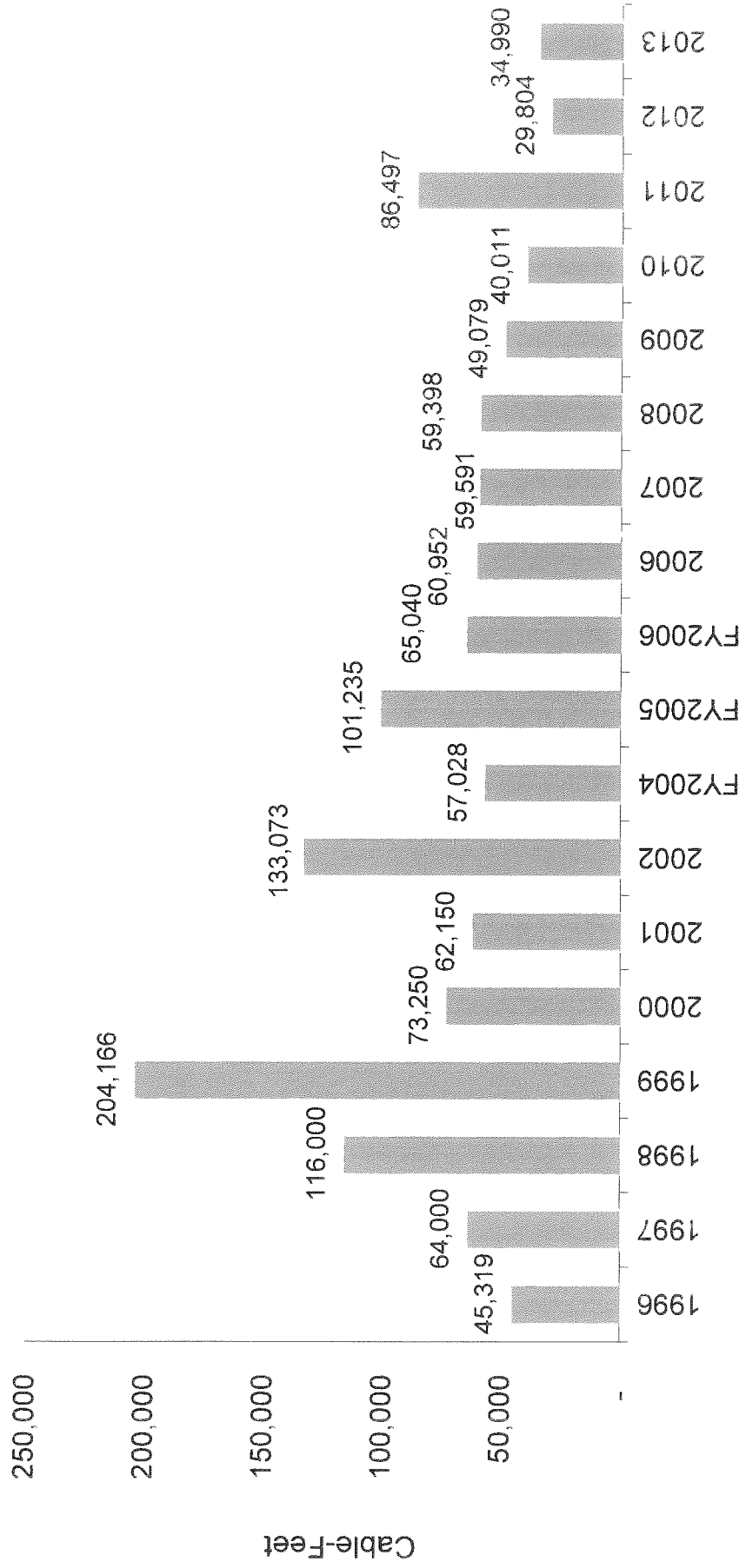
### *Actions Taken*

- Consistent company-wide criteria implemented to prioritize cable replacement prior to the beginning of each budget year.
- Approximately 22.2% of the underground cable installed in Oregon in 2013 was used to replace existing cable that had reached the end of its serviceable life.
- Approximately 34,990 feet of primary underground cable were replaced in Oregon in 2013 out of 157,740 total feet installed.

OREGON 2013 UNDERGROUND CABLE REPLACEMENT	Feet Replaced
DALB/2012/C/DRA/5645172 - BCHNN: 4M133 CBL RPLCMNT NE CONIFER CORV	576
DALB/2012/C/DRA/5652566 - JFFRSN: 4M125 CBL RPLCMNT 612 LOREE PL	618
DALB/2012/C/DRA/5668738 - SCIO: 5M126 CBL RPLCMNT 38591 GOAR RD	12
DALB/2012/C/DRA/5698963 - GRNT ST: 4M268 CBL RPLCMNT ARTHUR PL COR	32
DALB/2012/C/DRA/5699608 - JFFRSN: 4M117 CBL RPLCMNT 4736 MRION HIL	5
DALB/2013/C/DRA/5746822 - OSU TUNNEL-FAULTED UG CABLE RPLC-4M182	362
DALB/2013/C/DRA/5762298 - JEFFSN - UG CABLE REPL 4M125 - 727 TABOT	874
DALB/2013/C/DRA/5762972 - CORVALLIS -4M268 CABLE REP-2917 ANGELICA	630
DALB/2013/C/DRA/5782298 - QN V: 4M261 2580 18TH AVE SE ALB 087182	411
DALB/2013/C/DRA/5784244 - QN AVE: 4M217 CBL RPLCMNT 14TH & WAVERLY	967
DALB/2013/C/DRA/5805217 - MRYS RVR: 4M151 CBL RPLCMNT COLLINS CORV	249
DALB/2013/C/DRA/5805238 - GRNT ST: 4M269 CBL RPLCMNT JAMESON CORVA	911
DALB/2013/C/DRA/5805369 - QN AVE: 4M258 CBL RPLCMNT 525 24TH ALBAN	1,143
DALB/2013/C/DRA/5805541 - LBNN: 4M62 CBL RPLCMNT DOWNING DR LEBANO	793
DALB/2013/C/DRA/5806056 - QN AVE: 4M261 CBL RPLCMNT DEL RIO ALBANY	425
DALB/2013/C/DRA/5813779 - 4M62:CBL RPLCMNT: GARVORD AVE: LEBANON	348
DALB/2013/C/DRA/5814214 - ALB: CABLE REPL 088601-087680 BANK OF AM	1,029
DALB/2013/C/DRA/5814256 - 4M61:CBL RPLCMNT: 12TH & SHERMAN:LEBANON	1,187
DALB/2014/C/DRA/5859321 - GST-4M269-ROOSEVELT-CRVLS-UG CABLE RPLCM	12
DAST/2012/C/DRA/5713331 - CNBC:5A10:CBL RPLCMNT:CHINOOK CANNON BEA	3,733
DAST/2012/C/DRA/5731129 - SEAS:5A82:RPL FLD CBLE:JUNCTION RD.	356
DAST/2013/C/DRA/5835389 - SEAS:5A83:CBL RPLCMNT:WOODLAND AVE	2,496
DAST/2013/C/DRA/5838933 - WRRT:5A20:RPL FAILING CBL:GLENWOOD VILLA	129
DAST/2013/C/DRA/5858466 - SEAS:5A82:RPL FLD CBL:84651 ZELLERBACH	90
DBEN/2012/C/DRA/5712643 - 5D96-CLV-61461 LITTLE JOHN LN-PACIFIC P.	0
DBEN/2012/C/DRA/5727359 - 5D238;MARKEN ST CABLE REPLACEMENT	88
DBEN/2012/C/DRA/5727360 - 5D238;ROBERT WY CABLE REPLACEMENT	179
DBEN/2012/C/DRA/5727362 - 5D94;FRANKE LN CABLE REPLACEMENT	98
DBEN/2013/C/DRA/5782115 - 5D96;1812/099682;61455 LITTLE JOHN LN	521
DBEN/2013/C/DRA/5786861 - 5D140;CHINA HAT MAHOGANY;4/0 UG CABLE	2,972
DBEN/2013/C/DRA/5813700 - 5D184;STARWOOD SEWER CABLE R/P SOLSTICE	264
DBEN/2014/C/DRA/5849732 - CHH;5D140;AMETHYST CABLE REPLACEMENT	40
DCOO/2012/C/DRA/5615513 - LCKHRT 4C5-RPL 3PH PRI UG CBL,FP# 359482	154
DCOT/2013/C/DRA/5751470 - JCT-4M102-1225 10TH#56-JC-FAULTED UG SVC	625
DCOT/2013/C/DRA/5805618 - VLLG GRN: 4M84 CABLE RPLCMNT JUNIPER CGR	24
DDAL/2012/C/DRA/5706413 - DLLS: 4M100 CBL RPLCMNT LOT 128 S. GREEN	0
DDAL/2013/C/DRA/5727769 - DLLS: 4M238 CBL RPLCMNT MC BEE RD DALLAS	(13)
DDAL/2013/C/DRA/5734599 - NDPNDNCE: 4M22 CBL RPLCMNT 784 CESSNA ST	464
DDAL/2013/C/DRA/5777153 - DAL/MILL ST 1PHS URD CABLE REPLACEMENT	460
DDAL/2013/C/DRA/5820822 - DAL/KINGS VALLEY HWY CABLE REPLACEMENT	875
DGRA/2012/C/DRA/5704463 - EYV 5R125 RPL BAD CABLE B3704-B11724	-
DGRA/2012/C/DRA/5718208 - APP:5R278:RPL 250' #2AL:7255 N APPLGATE	78
DGRA/2012/C/DRA/5718309 - AGN:5R172:RPL 1980' #2AL:TOM PEARCE PARK	892

DGRA/2013/C/DRA/5735469 - PKS 5R114 CBL REPLACE BEN AIRE CIRCLE	1,675
DGRA/2013/C/DRA/5744874 - APP 5R267 RPL BAD CBL 059900-041881	111
DGRA/2013/C/DRA/5756227 - PKS:5R114:RPL FAILED CABLE:1382 FRUITDAL	86
DGRA/2013/C/DRA/5759193 - DRA.APP.5R278.RPL UG SVC.119 COVEY LN	95
DGRA/2013/C/DRA/5812064 - DRA 5R232 MLN REPL CABLE 1095 CIENAGA LN	15
DGRA/2013/C/DRA/5822573 - DRA 5R99 CVM REPL SEC 2325 HIGHLAND AVE	306
DGRA/2013/C/DRA/5840799 - JER.5R63:CBL RPL:ROSSIER LANE	42
DGRA/2014/C/DRA/5841558 - MLN.5R232.RPL BAD CABLE.1061 CIENAGA LN.	47
DHER/2012/C/DRA/5692836 - HER:5W602:SHERMAN ST. 350' UG CABLE REPL	125
DHER/2013/C/DRA/5815403 - UMA:5W660:REPL UG CABLE:WENATCHEE STREET	51
DHOO/2013/C/DRA/5767163 - 5K70:1-PH UG PRIMARY REPLACEMENT:953 GRA	196
DKLA/2012/C/DRA/5663812 - WSI 5L116 CABLE REP 6767 TINGLEY, K-FALL	329
DKLA/2012/C/DRA/5734987 - BRYANT 5L3 CBL REP 1331 AVALON K-FALLS.	19
DKLA/2013/C/DRA/5792040 - MRL 5L27 CBL RPL E 4259 MRL PITT RD, KF	512
DLIN/2013/C/DRA/5694571 - DVK:4A316:CABLE RPLCMNT:OLD RANCH RD	381
DLIN/2013/C/DRA/5740774 - GLD:7A364:FLD UG PRMRY NEUT:RHODODENDRON	355
DLIN/2013/C/DRA/5772202 - ATF:4/6/13:INSTALLED PED:FIXED RISER	11
DMED/2012/C/DRA/5682116 - VIL-5R146 DRA 5915 PEACE LANE, CENTRALPT	(317)
DMED/2012/C/DRA/5716179 - PRI A BO UG PRI CABLE-COACHMAN/CONESTOGA	1,279
DMED/2013/C/DRA/5726329 - BRO-5R33 DRA 1857 INNER CIRCLE, MEDFORD	151
DMED/2013/C/DRA/5767439 - 5R227:CABLE REPLACEMENT:2780 DAVID LN	432
DMED/2013/C/DRA/5772127 - IEW REPL PRI CABLE 2437 CAPITAL AVE, MED	116
DMED/2013/C/DRA/5773997 - BRO-5R33 AMARYLLIS ST CABLE REPLACEMENT	18
DMED/2013/C/DRA/5794116 - WHC-5R11 2700 FALCON, SPC. 14, W.C., OR.	317
DMED/2013/C/DRA/5820051 - RUC-5R68-BAD UG PRI-1933 KINNEY CREEK RD	14
DMED/2013/C/DRA/5820063 - TAL:5R238:RPL B/O CABLE:355 COLVER RD#73	15
DMED/2013/C/DRA/5828279 - MFD-5R250-IEW PPL BO UGPRI-DEBARR&SENECA	269
DMED/2013/C/DRA/5832909 - STV-4R17 435 TEAKWOOD DR., E.P., OR.	219
DMED/2014/C/DRA/5853074 - BRO-5R32 DRA 2876 LONE PINE RD, MEDFORD	15
DPEN/2012/C/DRA/5723111 - BCK:5W203:UG CABLE REPL:097080 TO 097083	43
DPEN/2013/C/DRA/5815399 - PEN:5W403:REPL UG CABLE:EASY ST:PENDLETN	260
DPOR/2013/C/DRA/5770707 - REPL B/O UG PRI 4400 N.E. JARRETT 5P41	447
DPOR/2013/C/DRA/5837779 - 5P246:RPL BO UG:1002-271640 TO 271780	7
DPOR/2013/C/DRA/5856451 - ATF:10/31/13:3505 NE 28TH/B/O UG PRI CBL	325
DPRN/2014/C/DRA/5858524 - PNV 5D126:RPL B/O UG PRIMARY:940 NW 2ND	6
DROS/2012/C/DRA/5643052 - RSB 4U10 RPL 1,270' PRI UG 1350 STEPHENS	8
DROS/2013/C/DRA/5722999 - WIN 5U19 RPL 1615' PRI UG N RIVER DR	0
DROS/2013/C/DRA/5723040 - WIN 5U19 RPL 283' PRI UG UCC GYM	1,590
DROS/2013/C/DRA/5733077 - WIN 5U19 RPL 5,470' PRI UG COLLEGE DR	0
DROS/2013/C/DRA/5752601 - RSB 4U10 UG CABLE RPLC WALKER CT RSB	194
DROS/2013/C/DRA/5800011 - WTN 5U49 RPL 234'#2 & PAD XF WINSTON	115
<b>Total</b>	<b>34,990</b>

# Oregon UG Cable Replacement History



## X2 & X3 - CY 2013 Actuals and Budget

X2 : Pole Inspect & Treat			ACTUALS	BUDGET
Distribution	T&T	515	\$2,042,549	\$2,141,043
	Detail	520	\$0	\$25,016
Transmission	T&T	843,883	\$337,018	\$473,994
	Detail	840,880	\$260,762	\$217,126
Total			\$2,640,329	\$2,857,179

X2 : Pole Replacements			ACTUALS	BUDGET
Distribution			\$6,818,969	\$4,078,711
Transmission			\$3,552,896	\$3,260,809
Total			\$10,371,865	\$7,339,520

X2 : Repair and Replace Facilities			ACTUALS	BUDGET
Distribution	500, 501, 502, 503, 504, 505, 509, 518, 526, 527, 595, 625, 626		\$17,774,340	\$15,952,740
Transmission	845, 847, 846, 865, 884, 886, 848, 889		\$816,397	\$1,244,829
Total			\$18,590,737	\$17,197,569

X2 : Visual Inspections (Includes Equipment Inspections)			ACTUALS	BUDGET
Distribution	521		\$433,739	\$387,146
Transmission	841, 881		\$158,378	\$152,078
Total			\$592,117	\$539,224

X2 : Underground Inspections			ACTUALS	BUDGET
	508		\$332,674	\$295,332
Total			\$281,518	\$296,367

X3 : Substation Maintenance			ACTUALS	BUDGET
Distribution Preventative Maintenance			\$1,988,454	\$1,778,542
Distribution Corrective Maintenance			\$839,500	\$515,234
Transmission Preventative Maintenance			\$1,092,393	\$1,147,040
Transmission Corrective Maintenance			\$894,779	\$684,264
Total			\$4,815,126	\$4,125,080

# Oregon Workforce CY2013

	Number of Workers	
	Budget	Actual
<b>Field Operations &amp; Maintenance</b>		
Intern		3
Sevicemen	29	26
Lineman	108	113
Line / General Foreman	51	51
Underground Equipment/Cable Splicer	4	3
Clerks	29	28
Estimators	39	39
Field Inspectors	5	4
Field Engineers	9	9
Support Staff	2	
Managers/Supervision	29	26
<b>Field Operations &amp; Maintenance Total</b>	<b>305</b>	<b>302</b>
<b>Metering</b>	<b>Budget</b>	<b>Actual</b>
Collectors	31	32
Meter Readers	108	94
Connect/Disconnet/Collectors	4	4
Meterman	34	22
Engineers	4	4
Clerks	7	6
Contractor	1	4
Intern		
Support Staff	10	10
Managers/Supervision	10	10
<b>Metering Total</b>	<b>209</b>	<b>186</b>
<b>Plant and Dispatch</b>	<b>Budget</b>	<b>Actual</b>
Contractors	1	9
Substation Foreman	10	9
Substation Journeyman	12	13
Communication Technicians	14	14
Meter Relay Technicians	16	17
Wireman Foreman	4	4
Wireman	5	5
Incident Coordinators	5	5
Engineers	6	6
Dispatchers	47	44
Clerks	8	9
Support Staff	21	17
Managers/Supervision	35	32
<b>Plant &amp; Dispatch Total</b>	<b>184</b>	<b>184</b>
<b>Transportation and Logistics</b>	<b>Budget</b>	<b>Actual</b>
Contractors	1	1
Clerks		
Logistics Workers	31	31
Mechanics	16	15
Support Staff	3	3
Managers/Supervisors	3	3
<b>Transportation &amp; Logistics Total</b>	<b>54</b>	<b>53</b>

## Oregon Workforce CY2013

	Number of Workers	
	Budget	Actual
<b>Procurement</b>		
Contractors		
Clerks		
Buyers	18	15
Support Staff	3	2
Managers/Supervision	6	6
Procurement Total	<b>27</b>	<b>23</b>
<b>Customer Service @ Portland Business Center</b>	Budget	Actual
Contractors	14	14
Customer Service Employees	165	162
Support staff	5	6
Managers/Supervisors	16	16
Portland Business Center Total	<b>200</b>	<b>198</b>
<b>Customer Service @ Wasatch Business Center</b>	Budget	Actual
<i>(Note: Calls can be routed to both Business Centers.)</i>		
Clerks	1	1
Contractors	5	14
Customer Service Employees	107	98
Support staff	5	2
Managers/Supervisors	11	11
Wasatch Business Center Total	<b>129</b>	<b>126</b>
<b>OREGON LABOR</b>	Budget	Actual
TOTAL NON-SUPPORT, NON-MANAGEMENT STAFF	949	928
TOTAL SUPPORT STAFF	49	40
TOTAL MANAGEMENT STAFF	110	104
<b>Oregon Workforce Total</b>	<b>1108</b>	<b>1072</b>

NOTE: Number of Workers reflects the counts of Actual number of workers on record as of 12/31/2013.



**PacifiCorp Vegetation Management  
2013 Crew Report: Oregon**

District	Distribution & Local Trans											Main Grid Trans						Sub Total Crews			
	2 Man Lift	3 Man Lift	3 Man Climb	4 Man Climb	3 Man Skidder	2 Man Mow	2 Man Slash	2 Man Pole Clear	1 Man Chem	2 Man Flagger	For. Tech.	Billed Super	Crew Sub-Total	3 Man Climb	3 Man Skidder	2 Man Slash	2 Man Pole Clear		1 Man Chem	Forest Techs	
<u>Phillips</u>																					
KLAMATH																					
FALLS	3	1								1	0.75	0.75	5							0	
LAKEVIEW	11	2	2					0.5		2	2.75	2	0							0	
MEDFORD	14	3	2	0	0	0	0	0.5		3	3.5	22.5	17.5							0	
<b>Total</b>																					22.5
<u>Hooley</u>																					
ALBANY																					
CORVALLIS	5	2								2	1	1	9							0	
COTTAGE													0							0	0
GROVE													0							0	0
DALLAS													0							0	0
JUNCTION													0							0	0
CITY													0							0	0
LEBANON													0							0	0
LINCOLN													0							0	0
CITY													0							0	0
STAYTON	6	2								1	1	1	9							0	0
<b>Total</b>	11	4	0	0	0	0	0	0	0	3	2	2	18	0	0	0	0	0	0	0	18
<u>Partridge</u>																					
COOS BAY	1	2								0	0.5	0.65	4.5							0	4.5
GRANTS																					
PASS	6	2								2	2.5	1.75	11							0	11
ROSEBURG	3	3	1							2	2	1	9							1	10
<b>Total</b>	10	7	1	0	0	0	0	0	0	4.5	5.5	3.4	24.5	1	0	0	0	0	0	1	25.5

# PacifiCorp Vegetation Management

## 2013 Crew Report: Oregon

District	Distribution & Local Trans										Main Grid Trans						Total Crews					
	2 Man Lift	3 Man Lift	3 Man Climb	4 Man Climb	3 Man Skidder	2 Man Mow	2 Man Slash	2 Man Pole Clear	1 Man Chem	2 Man Flagger	For. Tech.	Billed Super	Crew Sub-Total	3 Man Climb	3 Man Skidder	2 Man Slash		2 Man Pole Clear	1 Man Chem	Forest Techs	Sub Total	
<u>Armstrong</u>																						
BEND																						
CLATSOP	1	1							0.5	1.5	1	0	2.5							0	0	0
ENTERPRISE																						
HERMISTON																						
HOOD RIVER																						
MADRAS																						
MILTON-																						
FREEWATER																						
PENDLETON																						
PORTLAND	2	1							0.2	0.5	0.2	1.2	3.2							0	0	1.2
PRINEVILLE									0.2				1.2									
REDMOND													0									
<b>Total</b>	4	4	0	0	0	0	0	0	1.1	2	1.2	9.1	9.1	0	0	0	0	0	0	0	0	9.1
<b>Total Crews</b>	39	18	3	0	0	0	2	0	0.5	11.6	13	9.35	74.1	1	0	0	0	0	0	1	1	75.1

### **X3 - A. Neutral Extension and Delta Grounding Summary**

At year-end 2010 the Company and Commission Staff agreed upon a ten year plan to extend neutral throughout its ungrounded grounding system, unless the Company is able to demonstrate the ungrounded system was compliant with the grounding requirements of the National Electric Safety Code. In general, that means that effectively all of these facilities will have grounding conductor extended over that ten year period. In the sections below the Company will report on its inventory at year-end, the amount expended and planned to be expended for the year and finally, its plans for neutral extension during the upcoming year. Below are the mileages calculated year-end 2013.

#### **Neutral Extension Inventory for Year-End 2013**

In its Neutral Extension Program, the Company identified that it would use data contained in its Geographic Information System (GIS) as a source of inventory data for records regarding ungrounded grounding systems. As a result, the inventory the Company reports will be modified during the ten year project both by verifying field facilities and correcting records in addition to physical extension of grounding conductors and records modifications after those facilities are extended. The Company records showed at year-end 2013 that it now contains 1,001.6 miles of ungrounded grounding systems in Oregon. This inventory is distributed across Oregon operating areas as shown below.

2013 Year-end Mileage of Uniground Facilities (based on original inventory)	
Operating Area	Miles
ALBANY	6.89
BEND/REDMOND	0.92
CLATSOP (ASTORIA)	2.81
COOS BAY/COQUILLE	7.48
CORVALLIS	1.93
COTTAGE GROVE/J.CITY	1.79
DALLAS/INDEPENDENCE	3.31
GRANTS PASS	10.16
HERMISTON	1.96
HOOD RIVER	21.45
KLAMATH FALLS	539.49
LAKEVIEW	36.05
LEBANON	1.76
LINCOLN CITY	2.57
MADRAS	0.83
MEDFORD	2.88
PENDLETON	0.88
PORTLAND	43.26
ROSEBURG/MYRTLECREEK	287.29
STAYTON	27.89
OREGON TOTAL	1,001.60

## 2013 Neutral Extension Summary of Planned Versus Actual Expenditures

At year-end 2013, the Company completed spending of \$2.6m, slightly over its authorized spending of \$2.1m for neutral extensions.

District	Project	Estimate	2013 YTD Spend	Footage
Grants Pass	RGR 5R77 NEUTRAL EXT BERGLUND ST RGE RVR	\$20,378	\$9,127	2800
Grants Pass	RGR 5R77 NEUTRAL EXT WARD CRK ROGUE RVR	\$23,441	\$13,901	2600
Grants Pass	JER:5R62:NEUT EXT-Feeder out of Jerome Praire Sub	\$37,324	\$37,715	3900
Grants Pass	JER:5R62:NEUT EXT-REDWOOD HWY-ELLIOTT CR	\$179,339	\$202,655	21965
Grants Pass	DM4 JER 5R62 NEUT EXT VARIOUS LOCATIONS	\$193,375	\$176,339	23523
Grants Pass	JER:5R62:NEUT EXT: WATTERS CREEK AREA	\$83,696	\$87,247	9600
Hood River	PWD:5K70 NEUT. EXT. HWY 30 MOSIER	\$22,472	\$15,452	1810
Klamath Falls	CBR 5L7 NEUTRAL EXT BURGENDORF RD BONANZA	\$31,212	\$34,458	2,915
Klamath Falls	TUR 5L23 NEUT EXT DEMERRITT RD, MALIN	\$32,768	\$17,588	11,390
Klamath Falls	MRL:5L26:NEUTRAL EXT:01440011.0 337502 (4.16mi)	\$62,877	\$43,384	22,000
Klamath Falls	MRL:5L26:NEUTRAL EXT:4410/087000 (1.93mi)	\$84,359	\$65,666	10,200
Klamath Falls	MRL:5L26:NEUTRAL EXT:4109/026801 #2 - (2.8 mi)	\$47,917	\$57,110	14,836
Klamath Falls	MRL:5L26:NEUTRAL EXT:01441011.0 047601	\$41,434	\$37,416	11,563
Klamath Falls	MRL:5L26: NEUT EXT: E-283-to D-12792:#3	\$138,746	\$81,076	19,723
Klamath Falls	MRL:5L26: NEUT EXT DODDS HOLLOW RD	\$32,976	\$29,521	10,605
Klamath Falls	MRL: 5L26: NEUT EXT:MULT TAPS:LOWER LAKE	\$31,525	\$46,416	19,500
Klamath Falls	MRL:5L26:NEUTRAL EXT #6:E274-E3285	\$76,474	\$70,996	19,011
Klamath Falls	MRL:5L26 NEUT EXT: D3946 TO D10312 #5	\$106,867	\$85,654	23,050
Klamath Falls	MRL 5L27 NEUT EXT 3,300ft MRL PIT RD.	\$8,758	\$4,736	3300
Klamath Falls	MRL 5L27 NEUT. EXT. NORTH FDR CHEYNE RD.	\$46,733	\$63,945	30500
Klamath Falls	MRL 5L27 NEUT EXT CHIN RD	\$27,633	\$38,943	20000
Klamath Falls	HMK 5L55 N.EXT FREIGHTROAD LN. KENO,OR (2012)	\$72,070	\$15,460	9600
Klamath Falls	HMK 5L55 N.EXT PONDEROSA LN. KENO,OR	\$54,053	\$49,070	11550
Klamath Falls	HMK 5L55 N. EXT. 1930 ROUND LAKE RD (2012)	\$40,763	\$46,431	21677
Klamath Falls	HMK 5L55 N. EXT HWY 66 (2012)	\$18,388	\$17,936	10500
Klamath Falls	HAM 5L55 N. EXT. 1439008.0/175000- PN#94003203 (2012)	\$29,986	\$28,768	18916
Klamath Falls	HAM 5L55 NEUTRAL EXT. 1439008.0/175000 (2012)	\$41,448	\$39,141	8631
Klamath Falls	HAM 5L55 NEUTRAL EXT 1439008.0/312362	\$19,727	\$12,662	7400
Klamath Falls	HMK 5L55 NEUT. EXT. HOWARD LN	\$37,781	\$35,317	5700
Klamath Falls	HMK N.EXT.RIVEREDGE KENO. 313302	\$11,705	\$16,887	5200
Klamath Falls	HMK 5L55 N.EXT. PARK ST. 1439008 31100	\$20,728	\$25,206	6600
Klamath Falls	HMK 5L55 N. EXT GREEN WING LOOP 0617138	\$56,450	\$69,542	18107
Klamath Falls	HMK 5L55 NEUT. EXT. KENO WORDEN	\$27,156	\$42,573	14200
Klamath Falls	HMK 5L55 N. EXT MCGLAUGHIN LN 1439007.0	\$68,784	\$83,256	10800
Klamath Falls	HMK 5L55 NEUT. EXT. KENO WARDEN TAPS #2	\$25,042	\$30,186	14500
Klamath Falls	HMK 5L55 HOMESTEAD RD KENO 1439007.0	\$33,147	\$37,464	6500
Klamath Falls	HMK 5L55 N. EXT. 1930 ROUND LK RD 067203	\$12,685	\$21,143	7500
Medford	TOL-5R92 DM4 HIGH BANKS/BLACKWELL, C.P.	\$0	\$1,620	0
Medford	TOL-5R92 DM4 BLACKWELL, HIGHBANKS, C.P.	\$3,542	\$2,237	880
Medford	PCT-5R40 CASCADE GORGE FEEDER NEUT EXT	\$78,523	\$92,468	27077
Medford	PCT-5R40 NEUTRAL EXTENSION PHASES #2	\$54,485	\$55,257	20184
Medford	TOLO 5R90 MERITA TERRACE, CENTRAL POINT	\$12,545	\$11,003	2640
Roseburg	GLIDE 5U84 INSTALL NEUT VARIOUS LOCATIONS	\$0	\$3,456	0
Roseburg	5U83 Ext Neutral INST Neut Phase 1 - 2013(keyline)	\$180,653	\$59,346	42712
Roseburg	5U83 Ext Neutral INST 33,941ft Neut Phase 2 - 2013	\$120,054	\$115,264	33941
Roseburg	5U83 Ext Neutral INST Neut Phase 3 - 2013	\$116,953	\$114,441	43643
Roseburg	GLD 5U83 PHASE 4 INSTALL 49,270/9.3mi NEUTRAL	\$244,992	\$73,451	17500
Roseburg	GRE 5U32 INS CN VARIOUS LOCS GREEN PHS 1	\$85,429	\$66,175	22840
Roseburg	GRE 5U32 IN CN CARIOUS LOC'S GREEN PHASE 2	\$75,028	\$55,697	18900
Roseburg	5U84 GLD INSTALL 59,272 NEUT PHASE 4	\$129,898	\$149,577	59272
Roseburg	ATF 7/25/2013 TILLETR 5U*( EXTEND NEUT 2 SPAN	\$2,306	\$2,244	840
		\$3,004,625	\$2,592,624	752601

Miles: 142.54

## 2014 Neutral Extension Projects Planned

During capital planning for 2014 the neutral extension work will be taking place primarily in the Grants Pass, Klamath Falls, Medford, and Roseburg areas. This process begins with records verification, typically conducted by field engineering staff, followed by estimation for facilities which must be constructed. Finally, based upon those work packets, the grounding conductor is extended. Where necessary, poles may be replaced, joint use attachments modified and avian protection installed.

District	Project	Estimate	Footage
Grants Pass	CAVE JUNCTION - 5R52 NEUTRAL EXTENSION	\$525,970	187847
Klamath Falls	MRL 5L26 NEUT EXT MALONE RD, MERRILL 2.25mi	\$42,069	11890
Klamath Falls	MERRIL 5L27 NEUTRAL EXTENSION - 2014- 92,363 ft.	\$273,468	92363
Klamath Falls	MRL 5L27 NEUT EXT FOR SOLAR GENERATION	\$44,740	12145
Klamath Falls	MRL 5L27 NEUTRAL EXT HILL RD, MERRILL	\$45,739	25473
Klamath Falls	MRL 5L27 NEUT. EXT. DODDS HOLLOW DR	\$46,900	16750
Klamath Falls	5L36 NEUT. EXT SOLAR SITE MODOC PT	\$10,405	6700
Klamath Falls	5L36 NEUT. EXT SOLAR SITE UPGRADE	\$5,948	1600
Klamath Falls	5L36 NEUT. EXT. MODOC PT. RD	\$4,748	2174
Klamath Falls	5L59 HENLEY NEUTRAL EXTENSION - 87,912 ft	\$246,154	87912
Medford	5R11 NEUTRAL EXTENSION EAGLE POINT, OR	\$78,087	11765
Medford	2014 OKN-5R55 NEUTRAL EXTENSION, ASH,OR	\$18,299	2564
Medford	2014 FRL - 5R88 NEUTRAL EXTENSION	\$4,564	885
Roseburg	DM4 5U2 RID PHS 1 INSTALL 218,623 ft NEUT-2014	\$612,146	218623
Roseburg	RID 5U3 PHASE 1 INSTALL 45,718 ft. NEUT. For 2014	\$200,453	45718
Roseburg	RID 5U3 PHASE 2 INSTALL 25933 ft. NEUT. For 2014	\$160,328	25933
		<b>\$2,320,018</b>	<b>750342</b>

Miles: **142.11**

## 2014 Delta Grounding Projects Planned

District	Project	Estimate	Footage
Albany	SCIO: 5M126 NEUT EXT / PHASE 1-10051786-2yr	\$955,000	282902
		Miles:	<b>53.58</b>

\*estimate includes grounding bank at Scio Substation

## X3 - B. Substation Signage Summary

The Company reviewed and revised its signage standards and completed them by March 10, 2011. They were modified as shown below.

During 2013, 431 English signs and 161 Spanish signs were issued to Oregon resources for placement.

### Substation High-Voltage Warning Signs

**A. Scope**

This standard specifies the details of, and installation procedures for high-voltage warning signs. These signs shall be placed on all fenced enclosures containing high-voltage electrical equipment.

**B. References**

The following publications also pertain to substation high-voltage warning signs:

- ANSI Z535.1-2006, *Safety Color Code*
- ANSI Z535.2-2006, *Environmental and Facility Safety Signs*
- ANSI Z535.3-2006, *Criteria for Safety Symbols*
- ANSI Z535.5-2006, *Accident Prevention Tags (For Temporary Hazards)*
- NESO Handbook 5th Edition, Appendix B, *Safety Signs*
- PacifiCorp Substation Engineering Handbook Document 6B.5, *Fence Application and Construction*.

Figure 1—English High-Voltage Warning Sign for Pacific Power (SI# 7999851)

<p>Substations and High-Voltage Equipment Construction Standard</p> <p>Engineer (J. Moran): <i>JM</i> Standards Manager (G. Lyons): <i>GL</i></p>	<p>Substation High-Voltage Warning Signs</p> <p>© 2011 by PacifiCorp. All rights reserved.</p>	<p>17 Mar 11</p> <p>SG 001 Page 1 of 4</p>
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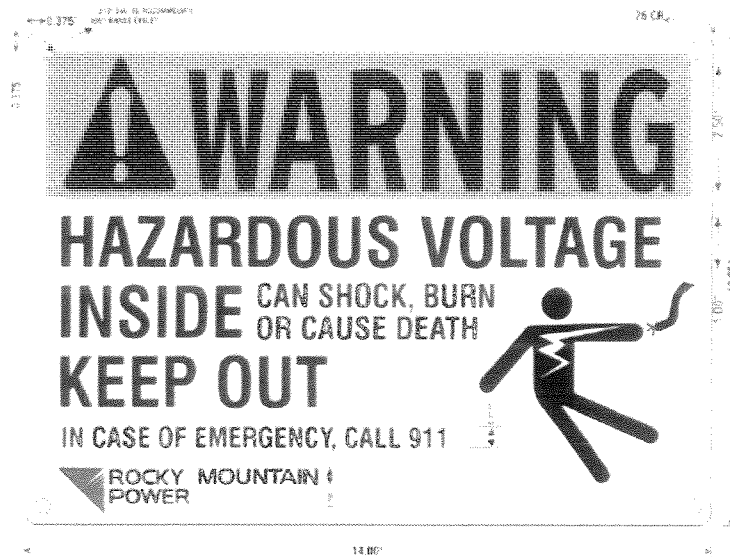



Figure 2—English High-Voltage Warning Sign for Rocky Mountain Power (SI# 7999852)



Figure 3—Spanish High-Voltage Warning Sign for Pacific Power (SI# 7999853)

	<b>Substation High-Voltage Warning Signs</b>	<b>Substations and High-Voltage Equipment Construction Standard</b>	
		SG 001 Page 2 of 4	17 Mar 11
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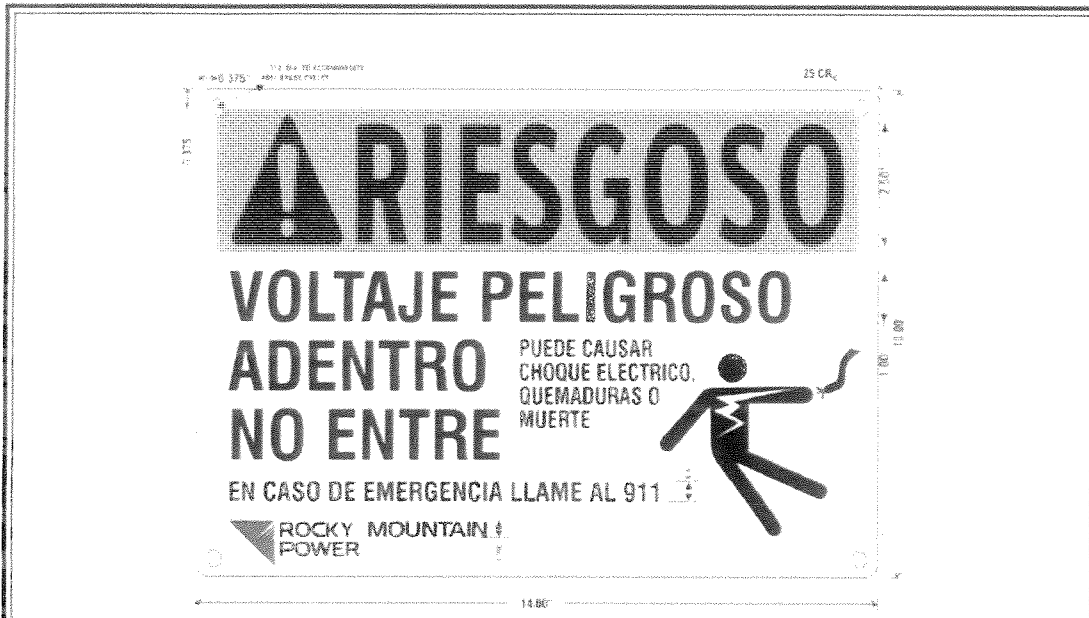


Figure 4—Spanish High-Voltage Warning Sign for Rocky Mountain Power (SI# 7999854)

### C. Sign Description and Layout

1. Substation high-voltage warning signs are 10" x 14" in size, of an Everlast material, with a white background. A black signal word 2.5" high is placed in a safety-orange colored rectangular box across the top of the sign. A safety alert symbol 2.5" tall (the symbol is triangular and contains an exclamation point) precedes the signal word.
2. A warning message in black letters 1" tall follows the signal word and safety alert symbol. The warning message is printed in black, on the sign's white background.
3. An electrical "person with wire" safety symbol follows the warning message (it may also precede the warning message). This symbol is printed in black, on the sign's white background.
4. Signal and message wording is printed in a sans-serif font. Signal wording is always in uppercase. Message wording may be a combination of upper and lowercase letters, with the first word in the sentence capitalized. Message wording in uppercase is acceptable for short messages or emphasis of individual words.
5. Text justification is left-aligned for the word messages. Signal words are centered.
6. The signs are available in either English or Spanish. The utilization of signs in one or both languages is up to the area manager.

<p><b>Substations and High-Voltage Equipment Construction Standard</b></p>	<p><b>Substation High-Voltage Warning Signs</b></p> <p>© 2011 by PacifiCorp. All rights reserved.</p>	
<p>Engineer (I. Moran): <i>IM</i></p> <p>Standards Manager (G. Lyons): <i>GL</i></p>		<p>17 Mar 11</p>



7. On the English sign, the signal word reads, "WARNING." The warning message reads, "HAZARDOUS VOLTAGE INSIDE KEEP OUT." Additional wording includes, "CAN SHOCK, BURN OR CAUSE DEATH" and "IN CASE OF EMERGENCY, CALL 911." The Pacific Power or Rocky Mountain Power logo follows as shown in Figure 1 and Figure 2.
8. On the Spanish sign, the signal word reads, "RIESGOSO." The warning message reads, "VOLTAJE PELIGROSO ADENTRO NO ENTRE." Additional wording includes, "PUEDE CAUSAR CHOQUE ELECTRICO, QUEMADURAS O MUERTE" and "EN CASO DE EMERGENCIA LLAME AL 911." The Pacific Power or Rocky Mountain Power logo follows as shown in Figure 3 and Figure 4.

**D. Placement and Spacing**

1. Signs shall be placed on each side of the substation's perimeter fence at a maximum spacing distance of 65 feet.
2. Signs shall also be placed on each gate, and shall be placed on the left-hand leaf of double gate.
3. Signs shall be placed on the outside of the fence (not the inside) at an approximate height of 5'-6" from the center of the sign to the ground. Sign location and height may be adjusted as needed to ensure maximum visibility. (For example, signs should not be obstructed by bushes, trees, berms, etc.)

**E. Ordering, Installation and Inspection**

1. Substation Engineering will order signs for new installations.
2. On existing installations, Technical Operations will inspect signs, verify placement, address conditions, and secure or order signs where and if needed.
3. Order high voltage warning signs with internal stock item number:  
 English Pacific Power sign: SI# 7999851  
 Spanish Pacific Power sign: SI# 7999853  
 English Rocky Mountain Power sign: SI# 7999852  
 Spanish Rocky Mountain Power sign: SI# 7999854
4. Order mounting hardware for mounting the sign on the substation fence, with internal Stock Item Number 7999092.

*Description:* The mounting hardware is comprised of aluminum brackets with 1" temper-proof bolts and locking nuts. The bolts are installed through the sign's front, and screw into the aluminum brackets located on the interior of the fence. Four sets of mounting hardware are needed for each sign.

		<b>Substation High-Voltage Warning Signs</b>	<b>Substations and High-Voltage Equipment Construction Standard</b>	
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