



2006  
Qualifying Storm Events

January 1, 2006

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## Event Description

### Date of event

1/1/2006

### Event Type

Though it was generally breezy across much of Puget Sound Energy's (PSE's) service area throughout the morning on New Year's Day, 35 mph winds, with gusts to 49 mph kicked-up mid-afternoon, causing wide-spread tree and limb-related outages. Winds quickly subsided later in the same evening.

### Service Areas Affected

This short-lived wind event tracked across the central, northern and western regions of PSE's service area. The majority of storm damage to PSE's electric distribution system occurred in Kitsap, Island and Skagit counties.

### Number of Customers Affected

32,309 customers were without power on January 1<sup>st</sup> and 2<sup>nd</sup>.

### Summary of System Impacts

<b>Total Number of Outages</b>	<b>231</b>
Distribution Circuits Totally Out	13
Distribution Circuits Partially Out	218
Transmission Circuits Affected	1
Substations Totally Off-line	3

### Mobilization Summary

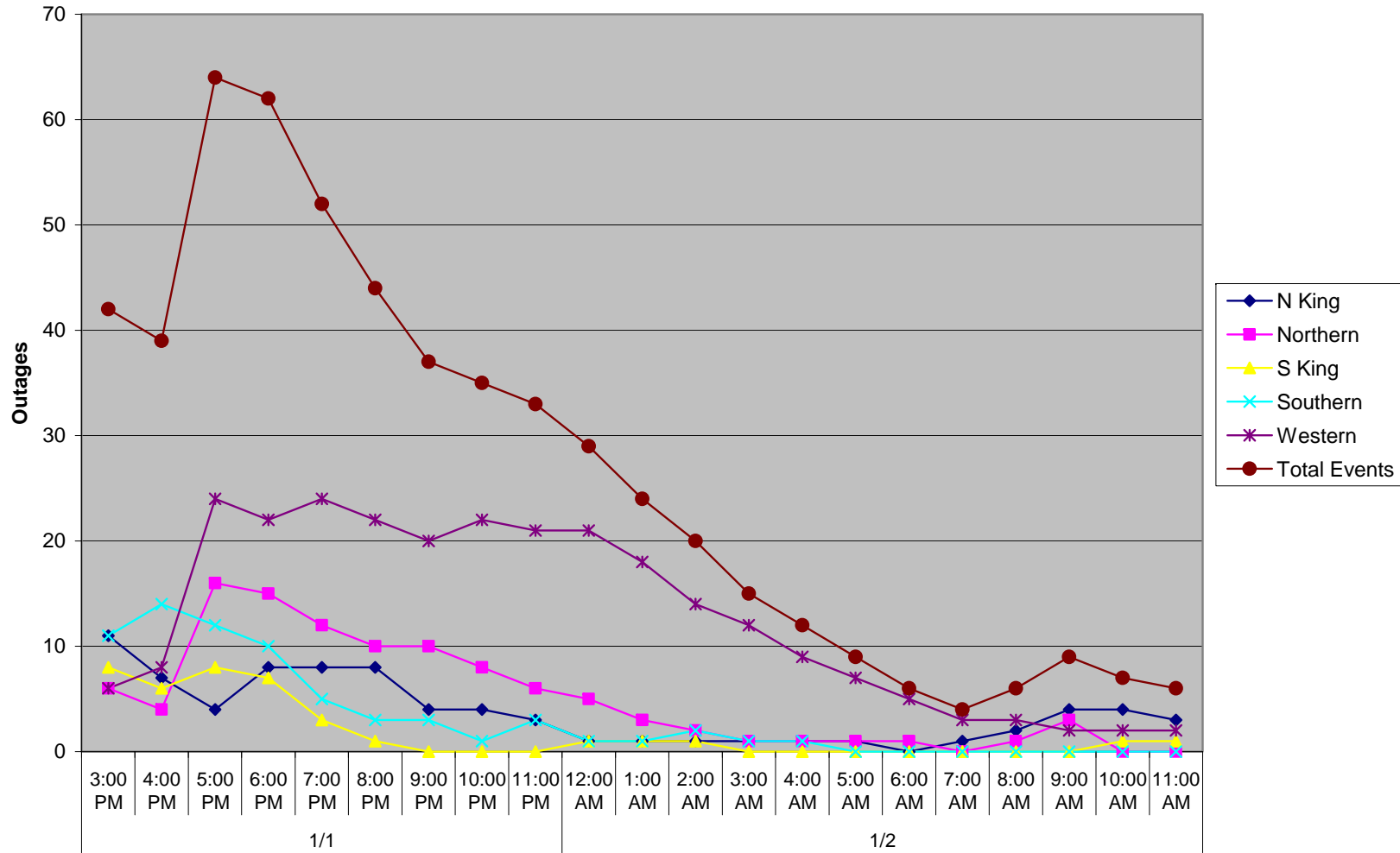
#### Operating bases

Base	Date Opened	Time Opened	Date Closed	Time Closed
Kitsap	1/1/06	5:00p	1/2/06	6:30a
Skagit	1/1/06	6:00p	1/1/06	11:45p

#### Emergency Operations Center

EOC	Date Opened	Time Opened	Date Closed	Time Closed
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### Outage Events - January 1, 2006



## Major Event Day – Qualification

### IEEE 1366 Method

IEEE 1366 was established to present a set of terms and definitions which can be used to foster uniformity in the development of distribution service reliability indices, to identify factors which affect the indices, and to aid in consistent reporting practices among utilities. Also, it provides guidance for new personnel in the reliability area, and tools for internal as well as external comparisons. The Major Event Day definition was created as part of IEEE 1366 to allow for consistent calculation of reliability metrics between utilities, and enable more valid comparisons with other utility reliability metrics.

#### IEEE Major Event Day Calculation (2.5 BETA METHOD)

1. A threshold on daily SAIDI is computed once a year, following year end.
2. Assemble the 5 most recent years of historical values of SAIDI/day.
3. Discard any days in the data set that has a SAIDI/day of zero.
4. Find the natural logarithm of each value in the data set.
5. Compute the average Alpha and the standard deviation (Beta) of the natural logarithms computed in step 3.
6. Compute the threshold Tmed where  $Tmed = \exp(\text{Alpha} + 2.5 * \text{Beta})$
7. Any day in the next year with SAIDI > Tmed is a major event day.

**Puget Sound Energy's Major Event Threshold for 2006: 4.97 Minutes**

## Qualified Events - 2006

### Current Event – Calculation Detail

Event Date	Total Customer Minutes	Average Customer Count	Daily SAIDI – Customer Minutes /Customer Count
1/1/2006	5,498,463	1,026,970	5.35

### Cumulative list of events that have qualified

Date(s)	T-med Score	O&M – Deferrable Accumulation
1/1/2006	5.35	\$248,103

## Event Restoration – Cost Summary

### Restoration Cost Detail by Qualifying Event

Date	Capital	C&D Costs Recoverable from Direct Billings (Costs Not Yet Billed)	O&M – Not Deferrable	<b>O&amp;M – Deferrable Accumulation</b>	Total O&M	Total
1/1/2006	\$0	\$0	\$25,232	\$248,103	\$273,335	\$273,335

### YTD Storm Restoration Cost Detail – Through January 1, 2006

Catastrophic Deferred Account	Capital	C&D Costs Recoverable from Direct Billings (Costs Not Yet Billed)	O&M – Not Deferrable	<b>O&amp;M Deferrable Accumulation</b>	Total O&M	Total
\$0	\$0	\$0	\$25,232	\$248,103	\$273,335	\$273,335

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## Detail Documents

**Restoration Cost Detail – Current Event**

**Detailed List of Distribution Circuits with Outages**

**Terms, Codes & Definitions Used on Detail Report**

**Newsprint Media Coverage**

**Restoration Cost Detail – Current Event**

<b>Puget Sound Energy January 1, 2006 Storm Damage Repair Costs</b>							
	Catastrophic Deferred Account	Capital	C&D Recoverable from Direct Billings (Costs Not Yet Billed)	O&M - Not Deferrable	O&M - Deferrable Accumulation	Total O&M	Total
Labor							
ST					\$346	\$346	\$346
OT					\$36,127	\$36,127	\$36,127
Total Labor	\$0	\$0	\$0	\$0	\$36,473	\$36,473	\$36,473
Labor OH					\$15,760	\$15,760	\$15,760
Materials					\$11,245	\$11,245	\$11,245
Contractors					\$173,411	\$173,411	\$173,411
Other Direct Charges					\$84	\$84	\$84
Fleet					\$10,033	\$10,033	\$10,033
Other Assessments				\$25,232	\$1,097	\$26,329	\$26,329
	\$0	\$0	\$0	\$25,232	\$248,103	\$273,335	\$273,335



### Detailed List of Distribution Circuits with Outages

Notification	Date	Time	Circuit	Area	Cause	Equipment	Cust Outs	Cust Mins
E290467906	1/1/2006	0:09:00	LON-22	ECC	EF	CDH	2	689
E804373605	1/1/2006	0:15:00	VIS-23	EAA	UN	OFU	8	680
E264749354	1/1/2006	3:30:00	CHI-13	ECD	EF	OFC	1	134
E573255491	1/1/2006	6:22:00	HAM-13	EAC	CP	OPO	15	6,285
E211956818	1/1/2006	9:42:00	YEL-27	ECC	TF	OCO	12	3,456
E618000533	1/1/2006	9:48:00	LON-23	ECC	TF	OCO	30	4,233
E691682776	1/1/2006	10:19:00	OSC-23	EBI	TO	OCO	1	315
E636478556	1/1/2006	10:24:00	DUV-12	EBD	TF	OCO	25	1,800
E285707900	1/1/2006	10:51:00	NRU-23	EBE	TO	OCO	30	16,027
E277708490	1/1/2006	10:52:00	LAT-13	EBJ	UN	OTF	4	244
E145618005	1/1/2006	10:56:00	ROC-26	ECC	TF	OCO	10	3,290
E220499777	1/1/2006	10:58:00	KWH-25	EBD	TF	OSV	1	435
E515197846	1/1/2006	11:23:00	HOU-25	EBD	TF	OCO	477	21,942
E633280889	1/1/2006	11:29:00	KAP-16	ECA	TF	OCO	1	357
E133391619	1/1/2006	11:41:00	FAL-15	EBF	TF	OCO	25	2,450
E637044473	1/1/2006	11:41:00	WLS-16	EAC	TF	OAR	15	1,323
E062124506	1/1/2006	11:43:00	CUM-15	EBI	TF	OSV	1	95
E920990903	1/1/2006	11:46:00	ING-13	EBD	TF	OCO	1,791	119,997
E289485999	1/1/2006	12:05:00	CAP-13	ECC	TF	OCO	1,023	174,198
E672421222	1/1/2006	12:07:00	WOO-26	ECA	TO	OCO	150	11,400
E815992275	1/1/2006	12:17:00	JHO-12	ECC	TO	OCO	66	8,716
E165629615	1/1/2006	12:20:00	UHL-23	EBD	TO	CDH	1,207	260,159
E038418387	1/1/2006	12:27:00	ALG-12	EAC	TO	OFU	7	765
E050791155	1/1/2006	12:30:00	TLN-0037	ECA	TF	OCO	14,452	1,607,596
E022320774	1/1/2006	12:30:00	KAP-15	ECA	TO	OCO	5	1,145
E159597172	1/1/2006	12:36:00	FRA-16	ECD	TO	OFU	22	2,618
E215769217	1/1/2006	12:37:00	ORT-22	ECA	TF	OCO	432	60,912
E168120995	1/1/2006	12:39:00	HWD-25	EBD	TF	OCO	10	1,100
E660734956	1/1/2006	12:43:00	HEM-13	ECA	TO	OCO	458	106,256
E111500089	1/1/2006	13:05:00	AIR-23	ECC	TF	OCO	1,112	64,496
E836862093	1/1/2006	13:09:00	FWY-12	EBJ	TO	OCO	1,126	100,984
10615902	1/1/2006	13:14:00	VAS-13	EBL	TO	OCO	97	67,512
E885703751	1/1/2006	13:14:00	VAS-13	EBL	TO	OCO	30	19,080
E916823924	1/1/2006	13:18:00	WOO-23	ECA	EF	OFU	30	5,100
E628895941	1/1/2006	13:19:00	SPA-16	ECA	TO	OCO	82	38,294
10615996	1/1/2006	13:19:00	SPA-16	ECA	TF	OCO	7	4,081
E233373993	1/1/2006	13:35:00	HAM-13	EAC	TO	OCO	34	6,324
E207591318	1/1/2006	13:41:00	CAM-23	EBJ	TO	OSV	1	306
E639021638	1/1/2006	13:42:00	COT-13	EBD	TF	OCO	30	5,730
E355689914	1/1/2006	13:43:00	VAS-23	EBL	TO	OCO	5	635
10616070	1/1/2006	13:46:00	RDO-15	EBK	TF	OSV	4	478
E288276647	1/1/2006	13:47:00	SWE-27	EBJ	TO	OFU	24	4,632
E739510504	1/1/2006	13:48:00	HEM-16	ECA	TO	OCO	1,626	97,560
E170553561	1/1/2006	13:49:00	BUC-16	ECA	TO	OCO	43	1,118
E395917608	1/1/2006	13:50:00	FRG-26	ECC	TO	OCO	12	2,844
E639363276	1/1/2006	13:56:00	LLT-16	EBD	TF	OCO	15	1,740
E388768712	1/1/2006	14:00:00	NLM-15	EAC	TO	OTF	3	141
E682531032	1/1/2006	14:03:00	FLD-12	EAD	TO	OCO	17	5,933
E135000793	1/1/2006	14:03:00	COT-16	EBD	TF	OCO	10	1,090
E410373475	1/1/2006	14:05:00	GRV-16	ECA	EF	OTF	5	1,365
E971412803	1/1/2006	14:05:00	SHD-18	EBI	TO	OCO	27	8,772
E319241357	1/1/2006	14:06:00	GAR-16	ECA	TO	OCO	9	324
E422876157	1/1/2006	14:07:00	DES-15	EBJ	TO	OCO	49	2,744
10616036	1/1/2006	14:27:00	SWA-16	EAD	TF	OCO	459	23,409

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E486724460	1/1/2006	14:27:00	WIN-12	ECE	TO	OCO	1,127	226,527
E662309301	1/1/2006	14:32:00	WIN-16	ECE	TO	OCO	612	119,952
E687588726	1/1/2006	14:34:00	MUR-15	ECE	TO	OCO	283	54,902
E870998361	1/1/2006	14:37:00	BUC-26	ECA	TO	OCO	15	3,525
E760381769	1/1/2006	14:37:00	WIN-15	ECE	TO	OCO	3	573
E948993751	1/1/2006	14:39:00	HWD-25	EBD	TF	OCO	50	8,850
E023522712	1/1/2006	14:47:00	BRW-15	EAC	EF	OTF	1	99
10617900	1/1/2006	14:53:00	VAS-13	EBL	TO	OCO	62	67,580
E810531212	1/1/2006	15:02:00	RPT-22	ECD	TO	OCO	19	2,451
E575638302	1/1/2006	15:39:00	MCA-15	ECC	TO	OCO	78	8,814
E673889493	1/1/2006	15:39:00	CHI-12	ECD	TO	OCO	716	237,696
E894790349	1/1/2006	15:40:00	SKE-23	ECE	TO	OFC	7	5,488
E037963978	1/1/2006	15:42:00	WOO-27	ECA	EF	OSV	1	102
E492641010	1/1/2006	15:50:00	PRI-21	ECC	TO	OFU	1	113
E162472426	1/1/2006	15:57:00	ELD-25	ECC	TO	CDH	16	5,040
E114904169	1/1/2006	16:00:00	PTR-14	EAA	TO	OCO	1	402
E505659119	1/1/2006	16:04:00	PMA-15	ECE	TO	OCO	188	109,228
E239171193	1/1/2006	16:07:00	CHR-22	ECE	TO	OCO	1	836
E202103046	1/1/2006	16:09:00	WLS-16	EAC	EF	OTF	1	86
E300633241	1/1/2006	16:09:00	MIL-17	ECE	TO	OTF	1	776
E357563832	1/1/2006	16:10:00	SIL-13	ECF	TO	OTR	11	5,764
E007691056	1/1/2006	16:11:00	PGA-13	ECE	TO	OCO	6	4,242
E363188127	1/1/2006	16:11:00	NUG-26	EAA	TF	OSV	1	112
E691449595	1/1/2006	16:11:00	CHR-25	ECE	TF	OCO	6	3,654
E736745875	1/1/2006	16:15:00	PMA-16	ECE	TO	OCO	371	179,935
E770336666	1/1/2006	16:15:00	PTL-16	ECF	TF	OCO	5	1,075
E156497455	1/1/2006	16:18:00	IRO-13	ECF	TF	OCO	253	54,901
E020767201	1/1/2006	16:28:00	LAT-14	EBJ	TF	OSV	2	191
E845467409	1/1/2006	16:29:00	BRO-16	EAD	TF	OCO	1,951	249,747
E359386285	1/1/2006	16:31:00	KCR-17	EBJ	TF	OTF	2	176
E334318060	1/1/2006	16:33:00	KEA-13	ECF	TF	OSV	1	507
E686167318	1/1/2006	16:38:00	BEL-17	EBJ	TF	CDH	3	195
E700871016	1/1/2006	16:39:00	GBK-13	EAD	TO	OCO	6	1,836
E890254017	1/1/2006	16:40:00	FRA-12	ECD	TO	OCO	64	43,072
E956650633	1/1/2006	16:41:00	MIL-22	ECE	TO	OCO	8	4,952
E659310301	1/1/2006	16:44:00	CRE-15	EAD	TO	OCO	787	150,885
E790843794	1/1/2006	16:45:00	LUH-14	ECC	TO	OCO	1,385	131,575
E352582760	1/1/2006	16:45:00	SKE-26	ECE	TO	OCO	2,373	602,742
E363636881	1/1/2006	16:46:00	FRA-15	ECD	TO	OCO	230	63,250
E486311860	1/1/2006	16:47:00	VAS-23	EBL	TO	OCO	3	939
E880029743	1/1/2006	16:48:00	CRE-13	EAD	TO	OTF	2	1,644
E122514412	1/1/2006	16:54:00	KEA-14	ECF	TO	OCO	14	9,730
E259945585	1/1/2006	17:00:00	SBE-22	EBE	TF	OSV	1	239
E742376601	1/1/2006	17:04:00	MAN-16	ECD	TO	OCO	4	520
E816022491	1/1/2006	17:05:00	HLC-23	EAD	TO	OCO	539	112,112
E755845763	1/1/2006	17:05:00	LGY-16	EAD	TF	OFU	10	1,680
E602137415	1/1/2006	17:05:00	WLK-15	ECA	TO	OCO	7	4,690
E086582944	1/1/2006	17:05:00	ALG-15	EAA	TF	OCO	10	1,810
E404809764	1/1/2006	17:06:00	SUM-12	EAC	BA	OTF	7	1,190
E058155248	1/1/2006	17:07:00	DES-16	EBJ	TF	OTF	4	227
E555238934	1/1/2006	17:08:00	VAS-22	EBL	TO	OCO	4	928
E496844839	1/1/2006	17:09:00	WAY-16	EBD	TF	OSV	1	285
E281562386	1/1/2006	17:09:00	SIL-15	ECD	TO	OFU	11	5,511
E634174607	1/1/2006	17:10:00	ALG-15	EAC	TF	OFU	15	2,655
E010972642	1/1/2006	17:11:00	HWD-22	EBD	TF	OPO	10	7,670
E089449343	1/1/2006	17:12:00	RIT-16	EAC	TO	OPI	2	216
E312019339	1/1/2006	17:15:00	NBO-25	EBD	CP	OSV	2	749
E304011210	1/1/2006	17:18:00	NBO-22	EBD	TF	OCO	230	47,392
E350625497	1/1/2006	17:30:00	SLA-16	EAA	TO	OCO	46	5,210
E168831145	1/1/2006	17:40:00	WOO-25	ECA	EF	OSV	1	83
E129248216	1/1/2006	17:44:00	CAM-24	EBJ	TO	OTF	1	120

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E489455634	1/1/2006	17:46:00	PAT-15	ECC	TO	OCO	1	348
10615995	1/1/2006	17:56:00	SPA-16	ECA	EF	OTF	3	258
E095295891	1/1/2006	17:57:00	FRA-13	ECD	TO	OCO	32	12,576
10616179	1/1/2006	18:05:00	BLU-16	ECC	TO	OCO	1	38
E813314208	1/1/2006	18:22:00	LGY-16	EAD	TO	OCO	26	11,380
E344699776	1/1/2006	18:31:00	SNQ-17	EBF	TF	OCO	3	180
10616101	1/1/2006	18:50:00	LGY-16	EAD	TO	OFU	6	2,520
10617901	1/1/2006	19:02:00	VAS-13	EBL	TO	OCO	1	298
E063240862	1/1/2006	19:02:00	FLD-12	EAD	TO	OCO	2	690
E655228547	1/1/2006	19:03:00	PGA-15	ECE	TO	OCO	1	657
E498945233	1/1/2006	19:26:00	UHL-22	EBD	TF	OSV	1	168
E671538814	1/1/2006	20:21:00	LAB-25	EAA	TO	OFU	6	1,410
10616016	1/1/2006	20:27:00	HLC-25	EAD	EF	UPC	50	8,250
E065874907	1/1/2006	20:53:00	FLD-12	EAD	TO	OCO	3	330
E677127606	1/1/2006	21:03:00	IRO-13	ECF	TO	OCO	2	564
10615994	1/1/2006	21:04:00	SHA-13	ECA	EF	USV	1	147
E505207567	1/1/2006	21:09:00	HEM-16	ECA	EF	OFU	1	78
E726715875	1/1/2006	21:18:00	SKE-26	ECE	UN	UPT	16	12,944
E080744547	1/1/2006	21:21:00	SIL-13	ECE	TF	OSV	2	728
E797972844	1/1/2006	21:31:00	CWD-25	EBD	TF	OSV	2	213
E708016587	1/1/2006	22:01:00	POU-15	ECE	TF	OFU	1	1,256
E762822519	1/1/2006	23:11:00	BOW-25	EBJ	UN	UTC	8	1,770
10616102	1/1/2006	23:48:00	FLD-12	EAD	TO	OFU	6	900

## Terms, Codes and Definitions Used on Detail Reports

<b>Notification</b>	<b>[Notification Number]</b> A number assigned by SAP, identifying the outage record
<b>Date</b>	The date of the outage
<b>Time</b>	The time of the outage
<b>Circuit</b>	<b>[Reference Circuit]</b> The circuit identifier for the affected circuit
<b>F/LOC</b>	<b>[Functional Location]</b> The grid number where the outage occurred. If the grid number is not available, the Reference Circuit identifier occupies this field
<b>EQT NBR</b>	<b>[Equipment Number]</b> A number used to tie the equipment involved in the outage to the related information in SAP. This number does not represent the physical number of the equipment

<b>Area</b>	<b>[Maintenance Planner Group]</b> A code representing the energy, region and service center	
	EAA – Bellingham	EBJ – South King
	EAB – Lynden	EBK – Southwest King
	EAC – Skagit	EBL – Vashon
	EAD – Whidbey	ECA – Puyallup
	EBD – Redmond	ECC – Olympia
	EBE – Factoria	ECD – Port Orchard
	EBF – Snoqualmie	ECE – Poulsbo
	EBI – Enumclaw	ECF – Port Townsend

<b>Cause</b>	Cause of Outage	
	AO – Accident Other	EF – Equipment Failure
	BA – Bird or Animal	EO – Electrical Overload
	CP – Car Pole	TF – Tree Off Right-of-Way
	CR – Customer Request	TO – Tree On Right-of-Way
	DU – Dig-up Underground	UN – Unknown
	SO – Scheduled Outage	

<b>Equipment</b>	Affected by, or involved in the outage	
	OCN – Connector	OSW – Overhead Switch
	OCO – Overhead Conductor	OTF – Overhead Transformer Fuse
	OCR – Crossarm	OTR – Overhead Transformer
	OFC – Overhead Cut-out	OUP – OH to UG Primary
	OFS – Overhead Fire Signal	OUS – OH to UG Secondary Service
	OFU – Fuse Link/OH Line Fuse	SBF – High-side Bank Fuse
	OGS – Span Guy	SCB – Power Circuit Breaker
	OHR – Overhead Recloser	UOT – Underground Outdoor Term
	OIN – Insulator	UPC – Underground Primary Cable
	OJU- Jump Wire	UPT – Padmount Transformer
	OPO – Pole	USV – Underground Service
	OSV – Overhead Service	UTC – Underground Terminal Fuse
	ORE – Regulator	UTR – Submersible Transformer

**Codes, Definitions – Continued**

<b>CUST OUT</b>	<b>[Customer Out]</b> The number of customers without power for any given outage record
<b>CUST MIN</b>	<b>[Customer Minutes]</b> The total number of minutes customers were without power for any given record
<b>CODE</b>	<b>[Storm Code]</b> An event descriptor
	NON – Non Storm / Normal Conditions
	WTH – Weather Related (eg: wind storm, showers, etc)
	MAJ – Major event

Qualifying Storm Event  
January 1, 2006

## **Newsprint Media Coverage**

No media coverage for this event.