

## Appendix B

# Major Disturbances and Unusual Occurrences

**Table B.1. Major Disturbances and Unusual Occurrences, Year-to-Date through August 2009**

Date	Utility/Power Pool (NERC Region)	Time	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected <sup>1</sup>	Restoration Date/Time
<b>January</b>							
01/05/09	Oncor Electric Delivery Company, LLC (TRE)	5:00 a.m.	North and Central Texas	Severe Storm	N/A	157,019	6:00 p.m. January 06
01/07/09	Duke Energy Carolinas (SERC)	5:00 p.m.	Piedmont of North and South Carolina	High Winds	300	70,000	8:05 p.m. January 07
01/08/09	Florida Keys Electric Cooperative Assoc. Inc. (FRCC)	11:46 p.m.	Florida Keys	Transmission Equipment Failure	55	31,000	11:25 a.m. January 09
01/17/09	State Line Energy, LLC (RFC)	8:00 a.m.	PJM, Indiana	Fuel Supply Deficiency	N/A	N/A	8:00 a.m. January 25
01/22/09	Crawfordsville Electric Light and Power (RFC)	4:00 p.m.	Crawfordsville, Indiana	Shed Load	50	9,700	5:05 p.m. January 22
01/27/09	Louisville Gas and Electric/Kentucky Utilities (RFC)	5:00 a.m.	State of Kentucky	Ice Storm	N/A	383,000	4:30 p.m. January 29
01/27/09	East Kentucky Power Cooperative, Inc. (SERC)	5:03 a.m.	Central and Eastern Kentucky	Ice Storm	600	190,000	5:15 p.m. January 31
01/27/09	Big Rivers Electric Corporation (SERC)	7:10 a.m.	Western Kentucky and Southern Indiana	Ice Storm	350	3	7:30 p.m. February 04
01/27/09	Associated Electric Cooperative, Inc. (SERC)	11:00 a.m.	South Central and Southeast Missouri	Winter Storm	200	62,500	6:00 p.m. January 30
01/27/09	Entergy Corporation (SERC)	1:46 p.m.	Northern Arkansas	Ice Storm	N/A	111,818	5:00 p.m. February 03
01/27/09	American Electric Power (RFC)	3:43 p.m.	CSWS-AEP West	Ice/Snow Storm	N/A	59,402	9:00 a.m. January 29
01/27/09	Arkansas Electric Cooperative Corporation (SERC)	9:00 p.m.	Northern Arkansas	Ice Storm	600	215,700	6:00 a.m. January 29
01/27/09	Tennessee Valley Authority (SERC)	9:45 p.m.	TVA Service Territory	Ice Storm	850	1	10:17 p.m. January 27
01/28/09	Midwest ISO (RFC)	12:10 a.m.	East Central Missouri	Winter Storm	300	1	9:20 p.m. January 30
01/28/09	Midwest ISO (RFC)	3:00 a.m.	Illinois, Indiana, Ohio and Kentucky	Winter Storm	N/A	230,300	8:03 a.m. February 13
01/28/09	Henderson Municipal Power and Light (RFC)	4:00 a.m.	City of Henderson, Kentucky and Portions of Henderson County, Kentucky	Ice Storm	21	3,500	5:00 p.m. February 07
01/28/09	Vectren Energy Delivery of Indiana (RFC)	6:00 a.m.	Indiana, Evansville, Metro Area	Ice Storm	506	75,000	6:00 p.m. February 05
01/28/09	Duke Energy Indiana (RFC)	7:50 a.m.	Southern Indiana	Ice/Snow Storm	N/A	53,700	8:03 a.m. February 13
01/28/09	Tennessee Valley Authority (SERC)	9:00 a.m.	Northeast Tennessee and Southwest Kentucky	Ice Storm	N/A	109,527	8:00 a.m. February 05
01/28/09	Duke Energy Ohio (RFC)	10:00 a.m.	Northern Kentucky and Southwest Ohio	Ice/Snow Storm	N/A	53,600	9:20 p.m. January 30
<b>February</b>							
02/11/09	CenterPoint Energy (TRE)	2:30 a.m.	Houston, Texas	High Winds	350	64,801	12:00 p.m. February 11
02/11/09	American Electric Power (RFC)	6:00 p.m.	Kentucky, West Virginia and Ohio	Severe Thunderstorms	N/A	279,813	5:00 p.m. February 13
02/11/09	Allegheny Power (RFC)	6:18 p.m.	Maryland, Virginia, West Virginia and Pennsylvania	Severe Thunderstorms	N/A	374,644	8:10 p.m. February 16
02/11/09	Louisville Gas and Electric/Kentucky Utilities (RFC)	7:00 p.m.	State of Kentucky	Severe Thunderstorms	N/A	78,000	11:00 a.m. February 12
02/11/09	Midwest ISO (RFC)	9:00 p.m.	Northern Kentucky and Southwest Ohio	Severe Thunderstorms	350	63,000	12:00 p.m. February 12
02/12/09	Midwest ISO (RFC)	2:30 a.m.	Central and Eastern Ohio	High Winds	168	184,000	6:00 a.m. February 12
02/12/09	Penelec (RFC)	8:00 a.m.	Western and North Eastern Pennsylvania	High Winds	130	132,000	10:00 p.m. February 15
02/13/09	Ohio Edison Company (RFC)	2:30 a.m.	Central and Eastern Ohio	High Winds	168	184,000	3:00 a.m. February 15
02/23/09	Central Maine Power Company (NPCC)	2:38 a.m.	Southern Central and Western Maine	Ice/Snow Storm	N/A	131,000	1:46 p.m. February 24
<b>March</b>							
03/01/09	El Paso Electric Company (WECC)	12:15 a.m.	City of El Paso, Texas, County of El Paso	Transmission Equipment Failure	250	132,000	3:00 a.m. March 01
03/01/09	Southern Company (SERC)	4:00 p.m.	Southern Balancing Area	Severe Weather	75	60,000	11:25 p.m. March 01
03/01/09	Duke Energy Carolinas (SERC)	8:54 p.m.	Duke Energy Carolinas Balance Authority	Ice/Snow Storm	1,000	180,000	4:06 p.m. March 03
03/01/09	Dominion Virginia/North Carolina Power (SERC)	10:00 p.m.	Central Virginia - Spotsylvania County	Winter Storm	210	217,000	6:00 p.m. March 03
03/03/09	New Covert Generating Company, LLC (RFC)	6:48 a.m.	Southwest Michigan	Transformer Faulted/Unit Tripped	378	N/A	6:05 a.m. April 26

<sup>1</sup> Estimated values.

**Table B.1. Major Disturbances and Unusual Occurrences, Year-to-Date through August 2009**

Date	Utility/Power Pool (NERC Region)	Time	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected <sup>1</sup>	Restoration Date/Time
03/03/09	American Electric Power (REC)	10:00 p.m.	Roanoke, Virginia	Made Public Appeals	350	0	8:17 p.m. March 04
03/08/09	Crockett Cogeneration (WECC)	10:16 p.m.	San Francisco Bay Area, California	Unit Shut Down	150	-	11:45 p.m. March 08
<b>April</b>							
04/06/09	Consumers Energy (RFC)	1:00 a.m.	Michigan, Lower Peninsula	Winter Storm	75	70,793	12:00 p.m. April 08
04/10/09	Southern Company (SERC)	10:00 p.m.	Alabama and Georgia	Severe Thunderstorms	162	56,679	2:30 a.m. April 11
04/23/09	State of California, Department of Water Resources (WECC)	12:00 a.m.	Restricted Hydro Electric Capability	Fuel Supply Deficiency	-	-	Ongoing
04/23/09	Puget Sound Energy (WECC)	4:25 p.m.	Skagit County, Washington	Transmission Tripped	244	93,300	12:29 a.m. April 24
04/23/09	Southern California Edison Co (WECC)	5:54 p.m.	Communities of Elsinore, Hemet, Moreno Valley, Perris, San Jacinto and Temecula in the southeastern area of Riverside County in California	Substation Load Interruption	512	280,000	7:58 p.m. April 23
04/24/09	Constellation Energy (SERC)	11:09 a.m.	Ruston, Louisiana	Complete Electric System Failure	32	11,000	11:21 a.m. April 24
04/25/09	Detroit Edison (RFC)	2:30 p.m.	Western Region of Service Territory	High Winds/Rain	N/A	125,000	1:00 a.m. April 29
04/27/09	CenterPoint Energy (TRE)	3:30 p.m.	Greater Houston/Galveston Area	High Winds	176	158,000	11:30 a.m. April 28
<b>May</b>							
05/08/09	The Empire District Electric Company (SERC)	7:30 a.m.	SW Missouri	Severe Thunderstorm	266	83,000	9:00 a.m. May 08
05/08/09	Ameren (SERC)	1:30 p.m.	Southern Illinois	Severe Thunderstorm	300	68,800	11:20 p.m. May 14
05/29/09	Big Rivers Electric Corporation (SERC)	9:05 a.m.	Henderson County, Kentucky	Transmission Equipment Failure	342	1	7:57 p.m. May 29
<b>June</b>							
06/05/09	Pacific Gas and Electric (WECC)	1:38 p.m.	East of Fresno California	Electrical System Separation	1	70	8:18 p.m. June 05
06/09/09	Baltimore Gas and Electric (RFC)	5:25 p.m.	Central Maryland	Severe Thunderstorms	60	85,091	5:00 a.m. June 11
06/10/09	Oncor Electric Delivery Company, LLC (TRE)	6:00 p.m.	North and Central Texas	Severe Storms	N/A	800,000	10:00 a.m. June 14
06/12/09	Tennessee Valley Authority (SERC)	4:37 p.m.	Chattanooga, Tennessee	Severe Storm	860	136,000	6:53 p.m. June 12
06/12/09	Entergy Corporation (SERC)	5:45 p.m.	Arkansas, North Mississippi	Severe Thunderstorms	N/A	81,645	11:59 p.m. June 15
06/12/09	Southern Company (SERC)	10:00 p.m.	Georgia	Severe Thunderstorm	290	102,000	6:00 p.m. June 13
06/16/09	California Department of Water Resources (WECC)	11:00 p.m.	A.D. Edmonston Pumping Plant	Fuel Supply Deficiency	300	0	2:00 a.m. June 17
06/19/09	Consumers Energy (RFC)	12:01 a.m.	Michigan Lower Peninsula	Severe Storm	75	99,000	11:00 p.m. June 21
06/19/09	Exelon Corporation ComEd (SERC)	1:00 p.m.	The Entire ComEd Service Territory	Severe Storm	N/A	245,000	11:59 p.m. June 19
06/24/09	SW Louisiana Electric Membership Corp/ Louisiana Generating LLC (SERC)	1:30 p.m.	Southwest Louisiana	Made Public Appeals	N/A	N/A	10:00 p.m. June 24
06/25/09	ERCOT ISO (TRE)	3:16 p.m.	ERCOT Region	Made Public Appeals	N/A	N/A	7:00 p.m. June 25
06/25/09	Detroit Edison (RFC)	3:30 p.m.	Western Region of Service Territory	High Winds/Rain	N/A	118,000	8:00 p.m. June 28
06/26/09	Duke Energy Midwest (RFC)	1:00 a.m.	Southwest Ohio, Northern Kentucky, Central and Southern Indiana	Severe Thunderstorms	327	85,000	9:00 a.m. June 27
06/26/09	Connecticut Light and Power (NPCC)	5:00 p.m.	Central Connecticut	Severe Thunderstorms	N/A	50,752	9:00 a.m. June 29
<b>July</b>							
07/02/09	ISO New England (NPCC)	10:44 p.m.	Northern Maine	Electrical System Separation	0	0	1:25 a.m. July 03
07/07/09	ERCOT ISO (TRE)	3:30 p.m.	San Antonio, Texas	Made Public Appeals	N/A	N/A	7:00 p.m. July 07
07/08/09	ERCOT ISO (TRE)	1:30 p.m.	ERCOT Region	Made Public Appeals	N/A	N/A	7:00 p.m. July 08
07/14/09	AEP West (SPP)	1:00 p.m.	AEP SWEPCO/Louisiana Area	Made Public Appeals	N/A	N/A	6:00 p.m. July 14

**Table B.1. Major Disturbances and Unusual Occurrences, Year-to-Date through August 2009**

Date	Utility/Power Pool (NERC Region)	Time	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected <sup>1</sup>	Restoration Date/Time
07/15/09	AEP West (SPP)	1:00 p.m.	AEP SWEPCO/Louisiana Area	Made Public Appeals	N/A	N/A	6:00 p.m. July 15
07/16/09	AEP West (SPP)	1:00 p.m.	AEP SWEPCO/Louisiana Area	Made Public Appeals	N/A	N/A	6:00 p.m. July 16
07/18/09	CenterPoint Energy (TRE)	7:00 p.m.	Houston/Galveston Area	Thunderstorms	51	73,000	9:00 p.m. July 19
07/20/09	Public Service Company of Colorado (WECC)	9:50 p.m.	Metro Denver (Jefferson, Adams, and Arapahoe Counties)	Severe Thunderstorm	150	86,058	7:00 p.m. July 22
07/21/09	Crockett Cogeneration (WECC)	5:34 a.m.	San Francisco Bay Area, California	Unit Tripped	136	1	8:43 a.m. July 21
07/27/09	Tennessee Valley Authority (SERC)	5:05 a.m.	Chattanooga, Tennessee	Failure of Computer Hardware Used for Monitoring	N/A	N/A	5:47 a.m. July 27
07/28/09	PacificCorp (WECC)	8:18 p.m.	Salt Lake City Utah and Northern Utah	Loss of Part of Substation	316	N/A	8:33 p.m. July 28
<b>August</b>							
08/02/09	PECO Energy (RFC)	2:17 a.m.	Chester, Montgomery, Delaware, Philadelphia and Bucks Counties, Pennsylvania	Highwinds	N/A	70,264	1:09 p.m. August 03
08/04/09	Duke Energy Midwest (RFC)	1:45 p.m.	Northern Kentucky, Southwest Ohio and Central and South Indiana	Thunderstorms	50	63,700	9:00 p.m. August 08
08/05/09	ERCOT ISO (TRE)	3:00 p.m.	ERCOT Region	Made Public Appeals	N/A	N/A	7:00 p.m. August 05
08/07/09	Detroit Edison (RFC)	11:00 p.m.	Western Region of Service Territory	High Winds and Rain	N/A	137,000	10:00 p.m. August 11
08/09/09	Consumers Energy (RFC)	7:31 p.m.	Michigan, Lower Peninsula	Severe Thunderstorms	N/A	58,156	9:59 a.m. August 10
08/12/09	CenterPoint Energy (TRE)	6:25 p.m.	South Houston Service Area	Thunderstorms	491	73,000	10:00 a.m. August 12
08/21/09	CenterPoint Energy (TRE)	7:00 p.m.	Houston Metropolitan Service Area	Thunderstorms	544	80,000	8:00 a.m. August 22
08/29/09	Western Area Power Administration Upper Great Plains Region (MRO)	11:00 a.m.	Western South Dakota	Electrical System Separation	373	18	2:01 p.m. August 29
08/29/09	Midwest ISO (RFC)	10:54 p.m.	Western South Dakota	Electrical System Separation	84	0	11:53 p.m. August 29
08/31/09	Los Angeles Department of Water and Power (WECC)	10:31 a.m.	City of Los Angeles, California	Made Public Appeals	N/A	N/A	12:00 a.m. August 31

Note: Estimates for 2009 are preliminary.

Source: Form OE-417, "Electric Emergency Incident and Disturbance Report."

**Table B.2. Major Disturbances and Unusual Occurrences, Year-to-Date through December 2008**

Date	Utility/Power Pool (NERC Region)	Time	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected <sup>11</sup>	Restoration Date/Time
<b>January</b>							
01/04/08	Pacific Gas and Electric Company (WECC)	4:00 a.m.	Northern California	Winter Storm	500	2,606,931	5:00 p.m. January 14
01/04/08	Sacramento Municipal Utility District (WECC)	7:47 a.m.	Sacramento County	Severe Storm	300	150,000	4:30 p.m. January 04
01/29/08	Crockett Cogeneration (WECC)	5:00 a.m.	San Francisco Bay Area, California	Exciter Faulted	N/A	-	12:17 p.m. January 29
01/29/08	Entergy Corporation (SERC)	4:00 p.m.	Arkansas, Mississippi, North Louisiana	Severe Thunderstorms	N/A	110,000	8:00 a.m. February 03
01/29/08	DTE Energy - Detroit Edison (RFC)	10:00 p.m.	Southeastern Michigan	Wind/Ice Storm	N/A	86,915	6:30 p.m. February 01
01/29/08	Dayton Power and Light (RFC)	11:23 p.m.	South Metropolitan Areas of Dayton, Ohio	High Winds	380	45,000	12:48 a.m. January 30
01/30/08	Niagara Mohawk Power Corporation (NPCC)	3:06 a.m.	Western, New York	High Winds	50	54,316	2:50 p.m. February 01
<b>February</b>							
02/01/08	Crockett Cogeneration (WECC)	6:00 a.m.	San Francisco Bay Area, California	Equipment Faulted	N/A	-	7:49 a.m. February 01
02/02/08	Crockett Cogeneration (WECC)	3:58 a.m.	San Francisco Bay Area, California	Equipment Faulted	N/A	-	4:27 p.m. February 02
02/05/08	LG&E Energy/Kentucky Utilities (SERC)	10:00 p.m.	State of Kentucky	Severe Weather	N/A	76,000	3:00 a.m. February 06
02/06/08	Tennessee Valley Authority (SERC)	9:00 a.m.	Mid to West Tennessee	Severe Weather	N/A	57,000	11:00 a.m. February 06
02/09/08	Pacific Gas and Electric Company (WECC)	11:59 a.m.	Near Arnold, California	Electrical System Separation	0	0	3:33 p.m. February 09
02/10/08	Allegheny Power (RFC)	4:00 a.m.	Southwestern Pennsylvania, West Virginia, Virginia, Maryland	Severe Weather	412	100,969	8:43 p.m. February 12
02/10/08	PJM Interconnection LLC (RFC)	11:00 a.m.	Virginia, West Virginia, Ohio, Pennsylvania	High Winds	N/A	212,560	11:36 p.m. February 10
02/10/08	American Electric Power (RFC)	11:00 a.m.	Virginia and West Virginia Area of AEP	High Winds	N/A	97,342	5:05 p.m. February 14
02/10/08	Dominion-Virginia Power (SERC)	2:06 p.m.	Dominion Service Territory	High Winds	170	114,618	11:36 p.m. February 10
02/10/08	Duke Energy Carolinas (SERC)	6:02 p.m.	Greenboro, North Carolina and I-40 Corridor	High Winds	300	50,718	4:00 a.m. February 11
02/12/08	Entergy Corporation (SERC)	3:00 p.m.	Arkansas, Mississippi, Louisiana	Severe Weather	N/A	54,000	5:00 p.m. February 15
02/13/08	ISO New England (NPCC)	6:43 p.m.	State of Maine	Ice Storm	50	50,462	12:00 p.m. February 14
02/14/08	PacifiCorp (WECC)	8:15 a.m.	Utah	Load Shedding	2,818	74,031	10:46 a.m. February 14
02/15/08	Pacific Gas and Electric Company (WECC)	3:06 p.m.	Antioch, California	Electrical System Separation	10	10,008	7:36 p.m. February 15
02/25/08	Owensboro Municipal Utilities (RFC)	8:00 a.m.	Restricted Coal Capability	Fuel Supply Deficiency	N/A	0	8:00 a.m. March 12
02/26/08	Southern Company (SERC)	5:00 a.m.	Southern Service Area/Alabama and Georgia	Thunderstorms	484	145,380	3:00 p.m. February 26
02/26/08	Florida Municipal Power Agency (FRCC)	1:09 p.m.	Various Cities in Florida	Under Frequency/Load Shedding	140	47,661	2:10 p.m. February 26
02/26/08	Tampa Electric Company (FRCC)	1:09 p.m.	Tampa Electric Service Territory	Under Frequency/Load Shedding	318	53,965	2:40 p.m. February 26
02/26/08	Florida Power and Light (FRCC)	1:09 p.m.	Primary Dade County Florida	Transmission Equipment Failure	3,200	584,384	4:11 p.m. February 26
02/26/08	Seminole Electric Cooperative (FRCC)	1:09 p.m.	FRCC Region-West Coast Florida	Shed Firm Load	120	56,000	1:47 p.m. February 26
02/26/08	Progress Energy Florida (FRCC)	1:10 p.m.	The entire PEF system was affected, including the following counties: Alachua, Bay, Citrus, Columbia, Dixie, Franklin, Gilchrist, Gulf, Hamilton, Hardee, Hernando, Highlands, Jefferson, Lafayette, Lake, Levy, Madison, Marion, Orange, Osecola, Pasco, Pinellas, Polk, Seminole, Sumter, Suwannee, Taylor, Volusia, Wakulla.	Under Frequency/Load Shedding	500	150,000	3:45 p.m. February 26

<sup>1</sup> Estimated values.

**Table B.2. Major Disturbances and Unusual Occurrences, Year-to-Date through December 2008**

Date	Utility/Power Pool (NERC Region)	Time	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected <sup>1</sup>	Restoration Date/Time
<b>March</b>							
03/04/08	Duke Energy Carolinas (SERC)	9:30 p.m.	North and South Carolina	Thunderstorms	300	55,267	10:45 p.m. March 04
03/08/08	Dominion-Virginia Power (SERC)	2:14 p.m.	Virginia and Eastern Part of North Carolina	Windstorm	210	141,130	9:59 p.m. March 08
03/08/08	PECO Energy (RFC)	4:00 p.m.	Chester, Montgomery, Delaware, Philadelphia and Bucks County, Pennsylvania	Severe Weather	N/A	168,449	1:44 p.m. March 10
03/15/08	Southern Company (SERC)	8:55 p.m.	Parts of Alabama and Georgia	Major Storm	200	157,744	8:30 p.m. March 16
<b>April</b>							
04/04/08	Entergy Corporation (SERC)	12:31 p.m.	Arkansas, North Louisiana, Mississippi	Severe Thunderstorms	N/A	122,600	5:00 p.m. April 04
04/09/08	Oncor Electric Delivery Company LLC (TRE)	4:00 p.m.	North, Central and East Texas	Severe Weather	N/A	488,689	1:15 a.m. April 13
<b>May</b>							
05/08/08	California ISO (WECC)	10:21 a.m.	California	Load Shedding	483	0	12:56 a.m. May 08
05/11/08	Southern Company (SERC)	6:00 a.m.	Georgia	Severe Thunderstorms	100	80,539	2:30 p.m. May 12
05/11/08	Crawfordsville Electric Light and Power (RFC)	4:50 p.m.	City of Crawfordsville, Indiana	Electric System Separation	47	9,700	8:43 p.m. May 11
05/12/08	Atlantic City Electric (RFC)	12:01 a.m.	Cape May, Cumberland, Gloucester, Salem, Camden, Atlantic, Burlington Counties, New Jersey	Severe Storm	55	135,000	12:00 a.m. May 14
05/27/08	ISO New England (NPCC)	2:02 p.m.	South West Connecticut	Lightning Storm	130	56,400	3:52 p.m. May 27
05/30/08	Exelon Corporation-ComEd (RFC)	9:30 a.m.	Northern and Western Counties of Illinois	Severe Storms	N/A	109,000	11:00 p.m. May 30
05/30/08	Entergy Services, Inc. (SERC)	2:05 p.m.	South Louisiana	Load Shedding, Inadequate Electric Resources to Serve Load	200-250	N/A	8:00 p.m. May 30
05/30/08	Indianapolis Power and Light (RFC)	10:00 p.m.	Northeastern Marion County, Indiana	Severe Thunderstorms	N/A	70,000	11:59 p.m. June 04
<b>June</b>							
06/03/08	Allegheny Power (RFC)	5:00 p.m.	Maryland, West Virginia, Virginia	Severe Weather	634	157,168	11:00 p.m. June 07
06/04/08	Potomac Electric Power Company (RFC)	3:00 p.m.	Montgomery, Prince Georges, Maryland, Washington, D.C.	Lightning Storm	N/A	249,408	1:00 a.m. June 05
06/04/08	Baltimore Gas and Electric Company (RFC)	3:00 p.m.	Entire BGE Service Territory	Severe Storms	N/A	108,000	5:30 a.m. June 07
06/04/08	Dominion-Virginia Power (SERC)	3:04 p.m.	Northern Virginia	Thunderstorms	850	253,800	9:30 p.m. June 05
06/04/08	Puerto Rico Electric Power Authority (PR)	3:14 p.m.	Island of Puerto Rico	Load Shedding/Voltage Reduction	90	100,948	3:46 p.m. June 04
06/06/08	Consumers Energy (RFC)	3:18 p.m.	Lower 2/3 of Michigan's Lower Peninsula	Lightning Storm	100	358,000	8:00 a.m. June 12
06/08/08	Exelon Corporation-ComEd (RFC)	9:30 a.m.	The Entire ComEd Territory	Severe Weather	N/A	125,000	7:00 a.m. June 09
06/08/08	Detroit Edison Company-DTE (RFC)	6:00 p.m.	Southwestern Michigan (DECO Service Territory)	Severe Storm	500	150,000	11:30 p.m. June 16
06/09/08	Entergy Services, Inc. (SERC)	2:00 p.m.	Entergy System	Inadequate Electric Resources to Serve Load	300	19	7:00 p.m. June 09
06/09/08	Public Service Electric and Gas (RFC)	2:52 p.m.	Area Around West Orange Switching Station, New Jersey	Fire/Breaker Failure	215	75,654	8:25 p.m. June 09
06/10/08	National Grid (NPCC)	11:00 a.m.	Upstate New York	Severe Storm	400	68,000	5:30 p.m. June 13
06/10/08	Entergy Services, Inc. (SERC)	2:00 p.m.	Entergy System	Inadequate Electric Resources to Serve Load	300	19	6:00 p.m. June 10
06/10/08	Public Service Electric and Gas (RFC)	6:00 p.m.	Bergen, Essex and Hudson Counties, New Jersey	Severe Storms	N/A	248,800	11:30 a.m. June 14
06/10/08	PECO Energy (RFC)	7:00 p.m.	Chester, Montgomery, Delaware, Philadelphia and Bucks County, Pennsylvania	Severe Thunderstorms	N/A	198,000	3:59 p.m. June 14
06/10/08	ISO New England (NPCC)	11:00 p.m.	All Six New England States	Storm	50	60,000	9:00 a.m. June 11
06/11/08	New York Independent System Operator (NPCC)	1:15 p.m.	New York State	Uncontrolled Loss	200	61,000	2:05 p.m. June 11

**Table B.2. Major Disturbances and Unusual Occurrences, Year-to-Date through December 2008**

Date	Utility/Power Pool (NERC Region)	Time	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected <sup>1</sup>	Restoration Date/Time
06/12/08	Midwest ISO, ITC, ALTW (RFC)	3:30 p.m.	East Central Iowa	Flooding and Uncontrolled Loss	200	21,000	4:00 p.m. June 18
06/15/08	Exelon Corporation-ComEd (RFC)	8:00 a.m.	The Entire ComEd Territory	Severe Weather	N/A	165,000	8:00 p.m. June 15
06/15/08	Crawfordsville Electric Light and Power (RFC)	7:06 p.m.	City of Crawfordsville, Indiana	Electrical System Separation	57	9,700	8:42 p.m. June 15
06/16/08	Dominion-Virginia Power (SERC)	4:15 p.m.	Northern Virginia	Thunderstorms	800-1,000	115,000	11:19 p.m. June 16
06/17/08	Oncor Electric Delivery Company LLC (TRE)	9:01 a.m.	North, Central and East Texas	Severe Thunderstorms	N/A	234,393	8:30 p.m. June 19
06/17/08	Southwestern Public Service Company (SPP)	8:35 p.m.	Southwestern Public Service Company Operating in the Panhandle of Texas and New Mexico	Electrical System Separation/Severe Thunderstorms	560	18,000	1:55 a.m. June 18
06/17/08	Golden Spread Electric Cooperative, Inc (TRE)	8:40 p.m.	Texas Panhandle and Texas South Plains Regions, and Oklahoma Panhandle	Thunderstorms/Unc controlled Loss of Load	276	37,330	11:00 p.m. June 17
06/21/08	Pacific Gas and Electric Company (WECC)	3:09 p.m.	Near Rogers Flat, California	Electrical System Separation/Severe Lightning Storms	3	477	6:53 p.m. June 21
06/22/08	Northern Indiana Public Service Company (RFC)	4:55 p.m.	Northwest Indiana	Lightning Stirke/Uncontrolled Loss of Load	650	N/A	5:05 p.m. June 22
06/23/08	Northern Indiana Public Service Company (RFC)	1:44 p.m.	Northcentral Indiana	Fire/Breaker Failure	425	N/A	1:45 p.m. June 23
06/23/08	Progress Energy Florida (FRCC)	4:52 p.m.	Pinellas County, Florida	Transmission Equipment Failure/Load Shedding	113	32,593	11:28 p.m. June 23
06/26/08	Detroit Edison Company-DTE (RFC)	5:00 p.m.	Southeastern Michigan (DTE Service Territory)	Thunderstorms	N/A	53,000	9:30 p.m. June 26
06/27/08	Omaha Public Power District (MRO)	4:30 p.m.	Omaha, Nebraska (Metro Area)	Severe Wind Storm	650	126,000	5:30 p.m. June 27
<b>July</b>							
07/01/08	Crockett Cogeneration (WECC)	7:31 a.m.	San Francisco Bay Area, California	Unit Tripped	160	-	12:00 p.m. July 01
07/02/08	Consumers Energy (RFC)	3:00 p.m.	Lower 2/3 of Michigan's Lower Peninsula	Severe Weather	125	239,663	12:00 p.m. July 06
07/02/08	State of California, Department of Water Resources (WECC)	4:00 p.m.	Restricted Hydroelectric Capability	Fuel Supply Deficiency	-	-	Ongoing
07/02/08	California ISO (WECC)	7:16 p.m.	Santa Barbara County, California, near Goleta	Wild Land Fire	208	200,000	11:28 p.m. July 02
07/02/08	Southern California Edison (WECC)	7:36 p.m.	Goleta and Santa Barbara Areas of Southern California	Brush Fire/Lines Loss/Transmission Emergency Declared	119	37,784	1:10 a.m. July 03
07/02/08	Detroit Edison Company-DTE (RFC)	8:00 p.m.	Southeastern Michigan (DTE Service Territory)	Thunderstorms	N/A	56,000	3:00 a.m. July 03
07/07/08	California ISO (WECC)	12:15 p.m.	ISO Balancing Area	Heat Wave/Potential Fire Threat/Made Public Appeals	0	0	5:00 p.m. July 10
07/10/08	Crockett Cogeneration (WECC)	2:22 p.m.	San Francisco Bay Area, California	Unit Tripped	240	-	5:21 p.m. July 10
07/21/08	MidAmerician Energy Company (MRO)	12:49 a.m.	Sioux City, Carroll, Des Moines, Iowa City, and Davenport Iowa, Rock Island, Moline, and Surrounding Area of Illinois	Storm	170	185,000	6:00 p.m. July 22
07/22/08	Duke Energy Indiana (RFC)	3:00 a.m.	Indiana	Severe Thunderstorms	N/A	58,000	7:32 p.m. July 24
07/22/08	Duke Energy Ohio (RFC)	3:00 a.m.	Southwest Ohio	Severe Thunderstorms	N/A	56,000	3:30 a.m. July 23
07/22/08	Southwestern Public Service Company (SPP)	2:00 p.m.	Texas Panhandle and Southeastern New Mexico	Inadequate Electric Resources to Serve Load/Public Appeal	N/A	-	5:09 a.m. July 24
07/23/08	American Electric Power (TRE)	5:56 a.m.	Port Isabel, Harlingen, Weslaco, Pharr, San Benito, Mission, McAllen, Edinburg, Texas	Hurricane Dolly	703	211,266	4:00 a.m. July 31

**Table B.2. Major Disturbances and Unusual Occurrences, Year-to-Date through December 2008**

Date	Utility/Power Pool (NERC Region)	Time	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected <sup>1</sup>	Restoration Date/Time
07/24/08	ISO New England (NPCC)	7:23 a.m.	Bangor Hydro System, northern Maine	Electric System Separation/Severe Lightning Storms	180	110,000	5:41 p.m. July 24
<b>August</b>							
08/02/08	Southern Company (SERC)	8:00 p.m.	Georgia and Alabama	Severe Thunderstorms	400	131,115	5:30 a.m. August 03
08/03/08	Entergy Corporation (SERC)	1:30 a.m.	Mississippi, Louisiana, Texas	Severe Thunderstorms	N/A	59,500	4:15 a.m. August 03
08/04/08	Exelon Corporation West ComEd (RFC)	6:00 p.m.	The ComEd Territory	Severe Weather	N/A	653,000	8:00 a.m. August 06
08/05/08	Northern Indiana Public Service Company (RFC)	3:00 a.m.	Northwest Indiana	Severe Storms	0	63,000	9:50 a.m. August 05
08/09/08	XCEL (Southwest Public Service Company) (SPP)	12:00 p.m.	Texas Panhandle and Eastern New Mexico	Declared Energy Emergency Alert 1/Made Public Appeals	0	0	8:46 p.m. August 09
08/15/08	Seattle City Light (WECC)	12:52 p.m.	Part of Seattle's Downtown	Made Public Appeals	100	8,000	5:00 p.m. August 15
08/16/08	Lubbock Power and Light (TRE)	5:23 a.m.	City of Lubbock	Lightning/Transmission Equipment Damage	153	71,823	7:30 a.m. August 16
08/16/08	Puerto Rico Electric Power Authority (PR)	8:14 a.m.	Island of Puerto Rico	Shed Firm Load/Voltage Reduction	300	200,000	3:00 p.m. August 16
08/18/08	Puerto Rico Electric Power Authority (PR)	7:22 p.m.	North Part of Island	Shed Firm Load	225	100,000	6:44 p.m. August 19
08/19/08	Florida Power and Light (FRCC)	9:29 a.m.	Florida	Tropical Storm Fay	N/A	101,950	10:00 p.m. August 22
08/21/08	Progress Energy Florida (FRCC)	7:00 p.m.	Alachua, Bay, Brevard, Citrus, Columbia, Dixie, Flagler, Franklin, Gilchrist, Gulf, Hamilton, Hardee, Hernando, Highlands, Jefferson, Lafayette, Lake, Leon, Levy, Madison, Marion, Orange, Osceola, Pasco, Pinellas, Polk, Seminole, Sumter, Suwannee, Taylor, Volusia and Wakulla Counties in Florida	Tropical Storm Fay	N/A	430,000	8:00 a.m. August 25
08/22/08	Mirant Chalk Point LLC (RFC)	12:00 p.m.	-	Fuel Supply Emergency-Low Coal Inventory Levels	0	0	12:00 p.m. August 23
08/24/08	Southern Company (SERC)	4:30 a.m.	Georgia and Alabama	Tropical Storm Fay	110	87,390	2:00 p.m. August 24
08/31/08	Dow Chemical Company (SERC)	7:30 a.m.	Plaquemine, Louisiana	Fuel Supply Curtailed	200	0	9:00 a.m. September 19
08/31/08	Entergy Corporation (SERC)	7:00 p.m.	Louisiana, Mississippi, Arkansas	Hurricane Gustav	N/A	964,000	9:00 a.m. September 03
<b>September</b>							
09/01/08	Louisiana Generating LLC (SERC)	10:30 a.m.	Primarily South and Central Louisiana	Hurricane Gustav	400	150,000	7:22 p.m. September 13
09/01/08	Cleco Power LLC (SERC)	11:45 a.m.	Bayou Division and North Lake Division, Louisiana	Hurricane Gustav	N/A	246,092	4:00 p.m. September 10
09/06/08	Progress Energy Carolinas (SERC)	7:45 a.m.	Eastern North Carolina	Tropical Storm Hanna	N/A	57,000	10:30 a.m. September 06
09/06/08	Dominion-Virginia Power (SERC)	2:15 p.m.	North East North Carolina and Virginia	Tropical Storm Hanna	220	64,463	4:06 p.m. September 06
09/08/08	State of California, Department of Water Resources (WECC)	10:03 p.m.	A.D. Edmonston Pumping Plant	Fuel Supply Deficiency	300	0	12:28 a.m. September 09
09/12/08	Entergy Corporation (SERC)	5:45 a.m.	Primarily Southeast Texas, Louisiana, and Arkansas	Hurricane Ike	N/A	705,000	1:00 p.m. September 14
09/12/08	CenterPoint Energy (TRE)	6:21 p.m.	Greater Houston-Galveston Metro Area	Hurricane Ike	8,087	2,142,678	11:59 p.m. October 01
09/12/08	Electric Reliability Council of Texas (TRE)	6:21 p.m.	Greater Houston Area-Eastern Region of ERCOT	Hurricane Ike	N/A	2,504,366	11:59 p.m. October 01
09/12/08	Texas New Mexico Power Company (TRE)	8:00 p.m.	Galveston and Brazoria Counties	Hurricane Ike	650	113,247	7:00 p.m. September 27
09/13/08	Louisiana Generating LLC (SERC)	10:24 a.m.	Southwest Louisiana	Hurricane Ike	40	50,000	2:40 p.m. September 27

**Table B.2. Major Disturbances and Unusual Occurrences, Year-to-Date through December 2008**

Date	Utility/Power Pool (NERC Region)	Time	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected <sup>1</sup>	Restoration Date/Time
09/13/08	Oncor Electric Delivery Company LLC (TRE)	12:00 p.m.	North, Central and East Texas	Hurricane Ike	N/A	238,392	8:00 a.m. September 15
09/13/08	American Electric Power CSWS (SPP)	4:00 p.m.	Texas and Louisiana	Hurricane Ike	N/A	184,501	7:44 p.m. September 16
09/14/08	Midwest ISO (RFC)	6:30 a.m.	Ohio, Kentucky, Indiana	Tropical Depression Ike	N/A	875,000	2:38 p.m. September 14
09/14/08	Ameren Corporation (MRO)	7:30 a.m.	Missouri and Illinois	Hurricane Ike	N/A	107,000	3:00 p.m. September 18
09/14/08	Owensboro Municipal Utilities (RFC)	10:01 a.m.	City of Owensboro, Kentucky	High Winds	70	18,000	5:00 p.m. September 21
09/14/08	Louisville Gas/Kentucky Utilities (RFC)	11:30 a.m.	State of Kentucky	Tropical Depression Ike	N/A	375,000	4:30 p.m. September 14
09/14/08	Dayton Power and Light (RFC)	2:00 p.m.	Dayton Ohio Area	Hurricane Ike	1,000	95,000	12:00 p.m. September 17
09/14/08	American Electric Company (RFC)	4:00 p.m.	Northern Indiana, Central and Central Southern Ohio	Wind Storm	N/A	650,000	11:00 p.m. September 20
09/14/08	Pennsylvania Electric Company (RFC)	5:00 p.m.	Western Pennsylvania	Wind Storm	72	124,596	12:38 p.m. September 19
09/14/08	Ohio Edison Company (RFC)	5:00 p.m.	Southern, Eastern, and Central Ohio	Wind Storm	469	564,728	5:11 p.m. September 22
09/14/08	Cleveland Electric Illuminating Company (RFC)	5:00 p.m.	Northeast Ohio	Wind Storm	430	245,164	3:20 a.m. September 22
09/14/08	Duquesne Light Company (RFC)	7:00 p.m.	Allegheny and Beaver Counties in Pennsylvania	Tropical Depression Ike	600	105,000	11:59 p.m. September 14
09/15/08	Allegheny Power (RFC)	12:37 a.m.	Western Pennsylvania	Tropical Depression Ike	546	160,875	4:30 p.m. September 19
09/22/08	Puerto Rico Electric Power Authority (PR)	5:49 p.m.	Island of Puerto Rico	Shed Firm Load	125	43,600	6:39 a.m. September 22
09/30/08	Pacific Gas and Electric Company (WECC)	2:02 p.m.	Plumas County, California	Electrical System Separation	30	10,000	2:05 p.m. September 30
<b>October</b>							
10/02/08	Dow Chemical Company (SERC)	2:50 p.m.	Louisiana	Load Shedding	200	0	9:50 a.m. October 02
10/25/08	ISO New England (NPCC)	11:00 p.m.	Connecticut	Severe Storm	N/A	52,000	7:00 a.m. October 27
<b>November</b>							
11/07/08	Southern California Edison (WECC)	11:13 a.m.	Goleta and Santa Barbara Areas of Southern California	Load Shedding	250	140,000	11:54 a.m. November 07
11/07/08	California ISO (WECC)	11:15 a.m.	Southern California	Load Shedding	430	400,000	11:54 a.m. November 07
11/11/08	Puerto Rico Electric Power Authority (PR)	8:30 a.m.	Island of Puerto Rico	Shed Firm Load	250	261,000	12:19 a.m. November 11
11/15/08	Los Angeles Department of Water and Power (WECC)	9:39 a.m.	City of Los Angeles	Brush Fire/Shed Firm Load	211	115,500	10:10 a.m. November 15
<b>December</b>							
12/02/08	Midwest ISO (RFC)	4:30 a.m.	St. Louis, Missouri	Fire/Load Shedding	135	53,000	7:00 a.m. December 02
12/09/08	Jersey Central Power and Light (RFC)	5:27 p.m.	Central New Jersey	Lines	438	156,729	4:12 a.m. December 10
12/10/08	PacificCorp (WECC)	5:09 p.m.	Southern Oregon	Equipment Failure/Made Public Appeal	32	3	8:29 p.m. December 10
12/11/08	Entergy Corporation (SERC)	9:00 a.m.	Southern Louisiana, Southern and Central Mississippi	Snow Storm	N/A	91,300	11:59 p.m. December 13
12/11/08	Central Hudson Gas and Electric (NPCC)	6:00 p.m.	Northern Dutchess County and Western Ulster County in the Mid-Hudson Region of New York State	Ice Storm	N/A	60,000	12:00 a.m. December 15
12/12/08	ISO New England (NPCC)	1:00 a.m.	New England	Ice Storm	N/A	970,000	12:00 a.m. December 22
12/12/08	National Grid (NPCC)	2:38 a.m.	Eastern New York	Ice Storm	200	190,000	1:24 p.m. December 19
12/12/08	Central Maine Power Company (NPCC)	8:45 a.m.	Southern and Central Maine	Ice Storm	N/A	169,757	9:52 a.m. December 14
12/13/08	Pacific Gas and Electric Company (WECC)	3:30 p.m.	Humboldt Area of California	Declared Stage 1 Electric Emergency/Made Public Appeal	5	0	9:17 a.m. December 21
12/19/08	Pacific Gas and Electric Company (WECC)	1:02 a.m.	East of Oroville, California	Electrical System Separation	1	638	6:17 a.m. December 19
12/19/08	American Electric Power (RFC)	8:30 a.m.	Indiana, Michigan and Northwest Ohio	Ice Storm	N/A	140,000	12:00 p.m. December 22
12/19/08	Midwest ISO (RFC)	9:00 a.m.	Northwest Indiana	Ice Storm	N/A	50,000	8:20 a.m. December 20
12/26/08	Sacramento Municipal Utility District (WECC)	11:40 a.m.	Orangevale Area of Sacramento, California	Load Shedding	110	50,000	3:34 p.m. December 26

**Table B.2. Major Disturbances and Unusual Occurrences, Year-to-Date through December 2008**

<b>Date</b>	<b>Utility/Power Pool (NERC Region)</b>	<b>Time</b>	<b>Area Affected</b>	<b>Type of Disturbance</b>	<b>Loss (megawatts)</b>	<b>Number of Customers Affected <sup>1</sup></b>	<b>Restoration Date/Time</b>
12/26/08	Hawaiian Electric Company, Inc. (HI)	6:13 p.m.	Island of Oahu, Hawaii	Lightning	1,060	294,000	5:00 p.m. December 27
12/27/08	DTE Energy (RFC)	4:00 p.m.	Southeastern Michigan	Wind Storm	N/A	247,847	11:30 p.m. January 01
12/28/08	Consumers Energy (RFC)	4:45 a.m.	Michigan Lower Peninsula	Wind Storm	N/A	210,517	6:00 p.m. December 31
12/28/08	Midwest ISO (RFC)	11:45 a.m.	Michigan Lower Peninsula	Wind Storm	N/A	230,000	11:30 p.m. December 28
12/30/08	Crawfordsville Electric Light and Power (RFC)	4:02 p.m.	Crawfordsville, Indiana	Shed Firm Load	41	9,700	4:37 p.m. December 30

Note: Estimates for 2008 are preliminary.

Source: Form OE-417, "Electric Emergency Incident and Disturbance Report."