

Appendix B

Major Disturbances and Unusual Occurrences

Table B.1. Major Disturbances and Unusual Occurrences, Year-to-Date through May 2008

Date	Utility/Power Pool (NERC Region)	Time	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected ¹	Restoration Date/Time
January							
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
February							
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	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	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	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

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Date	Utility/Power Pool (NERC Region)	Time	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected ¹	Restoration Date/Time
March							
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
April							
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 (ERCOT)	4:00 p.m.	North, Central and East Texas	Severe Weather	N/A	488,689	1:15 a.m. April 13
May							
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

¹ Estimated values.

Note: Estimates for 2008 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 2007

Date	Utility/Power Pool (NERC Region)	Time	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected ¹	Restoration Date/Time
January							
01/05/07	Puerto Rico Electric Power Authority (PR)	10:44 a.m.	Island of Puerto Rico	Voltage Reduction	0	0	11:13 a.m. January 05
01/13/07	Ameren Corporation (MRO)	5:00 a.m.	Missouri and Illinois	Ice Storm	N/A	225,000	12:00 p.m. January 19
01/13/07	DTE Energy (Detroit Edison) (RFC)	7:30 a.m.	Eastern and Lower Michigan	Ice Storm	500	129,607	4:00 p.m. January 19
01/16/07	Snohomish County PUD No. 1 (WECC)	2:00 a.m.	Snohomish County, Washington	Major Windstorm	260	110,433	12:00 a.m. January 17
February							
02/13/07	Duke Energy Midwest (RFC)	2:00 p.m.	Indiana and Southwest Ohio	Ice/Wind Storm	250	367,500	12:00 a.m. February 16
02/13/07	Baltimore Gas and Electric Company (RFC)	5:00 p.m.	Central Maryland	Winter Storm	400	155,183	5:30 a.m. February 17
02/24/07	MidAmerican Energy Company (MRO)	4:00 p.m.	NE quarter of State of Iowa and Rock Island, Illinois	Ice Storm	210	75,000	12:57 a.m. March 04
02/24/07	Alliant Energy (MRO)	6:00 p.m.	Central Iowa and Cedar Rapids areas	Ice Storm	400	140,000	11:47 p.m. February 24
02/24/07	Midwest ISO (RFC)	7:23 p.m.	Cedar Rapids, Iowa	Ice Storm	750	215,000	12:47 a.m. February 25
02/28/07	Pacific Gas and Electric Company (WECC)	12:45 a.m.	Northern California	Winter Storm	110	671,189	8:45 p.m. March 02
March							
03/01/07	Southern Company (SERC)	9:40 p.m.	Parts of Alabama, Mississippi, Georgia, Florida	Major Storm	95	25,445	11:30 p.m. March 02
03/31/07	CenterPoint Energy (ERCOT)	7:30 a.m.	Houston, Texas	Severe Thunderstorms	179	67,000	7:00 p.m. March 31
April							
04/05/07	Central Maine Power Company (NPCC)	9:20 p.m.	Southern and Coastal Maine	Heavy Snow Storm	-	117,142	1:10 p.m. April 06
04/12/07	Los Angeles Department of Water and Power (WECC)	12:32 a.m.	City of Los Angeles, California	High Winds	200	158,977	9:02 p.m. April 12
04/12/07	Crockett Cogeneration (WECC)	9:09 a.m.	San Francisco Bay Area, California	Trip of a Unit	130	-	11:23 a.m. April 12
04/14/07	National Grid - New England (NPCC)	9:00 a.m.	Massachusetts, New Hampshire, Rhode Island	High Winds	65-80	70,000	11:00 a.m. April 14
04/16/07	Public Service New Hampshire Electric System Control Center (NPCC)	8:00 a.m.	New Hampshire	Severe Thunderstorms	-	102,568	7:00 p.m. April 16
04/16/07	Central Maine Power Company (NPCC)	10:14 a.m.	Southern and Coastal Maine	Heavy Snow Storm	-	127,545	10:18 p.m. April 18
04/16/07	Progress Energy - Carolinas, Inc. (SERC)	11:00 a.m.	North and South Carolina	High Winds	-	33,000	7:00 p.m. April 16
04/16/07	Baltimore Gas and Electric Company (RFC)	2:00 p.m.	Central Maryland - Baltimore City and surrounding Counties	Severe Thunderstorms	160	138,000	5:00 p.m. April 18
04/16/07	Dominion - Virginia Power/North Carolina (SERC)	2:04 p.m.	North, East and Central Virginia/Parts of Northeast North Carolina	High Winds	90	242,000	7:03 p.m. April 16
May							
05/02/07	Oncor Electric Delivery Company (ERCOT)	1:30 p.m.	North Texas, Dallas Fort Worth Metroplex and Surrounding Counties, South to Waco and North to Red River	Severe Storms	-	300,000	8:00 p.m. May 03
05/10/07	Crockett Cogeneration (WECC)	9:57 a.m.	San Francisco Bay Area, California	Unit Tripped	150	-	1:47 p.m. May 10
05/14/07	Crockett Cogeneration (WECC)	11:15 a.m.	San Francisco Bay Area, California	Unit Tripped	150	-	1:50 p.m. May 14
05/15/07	DTE Energy (Detroit Edison) (RFC)	3:00 p.m.	Southeastern Michigan	Severe Thunderstorms	500	66,000	7:00 a.m. May 17
05/16/07	Northeast Utilities (NPCC)	6:00 p.m.	All of Connecticut	Severe Storm	-	67,000	5:00 a.m. May 19
05/21/07	Crockett Cogeneration (WECC)	1:48 p.m.	San Francisco Bay Area, California	Unit Tripped	140	-	4:50 p.m. May 21
June							
06/01/07	State of California, Department of Water Resources (WECC)	1:00 p.m.	Restricted Hydroelectric Capability	Fuel Supply Deficiency	-	-	Ongoing
06/05/07	Idaho Power Company (WECC)	10:56 a.m.	Southwest Idaho and Eastern Oregon	Load Shedding	424	80,000	11:51 a.m. June 05
06/27/07	Consolidated Edison of NY Inc (NPCC)	3:41 p.m.	Northern Manhattan NY (Yorkville) and SW Bronx (Motthaven, Melrose, High Bridge Sections)	Lightning	460	137,000	4:30 p.m. June 27

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06/27/07	New York Independent System Operator (NPCC)	3:42 p.m.	New York State	Loss of Load	460	-	4:30 p.m. June 27
06/29/07	Salt River Project (WECC)	9:23 a.m.	Metropolitan Phoenix Area	Loss of Load	399	98,700	10:09 a.m. June 29
July							
07/03/07	California Independent System Operator (WECC)	10:59 a.m.	CAISO Controlled Grid	Public Appeal	N/A	N/A	6:00 p.m. July 05
07/05/07	DTE Energy (Detroit Edison) (RFC)	7:00 p.m.	Southeastern Michigan	Severe Storm	-	69,000	7:00 a.m. July 08
07/06/07	Idaho Power Company (WECC)	5:18 p.m.	Southeast Idaho and Eastern Oregon	Electrical Separation/Load Shedding/Made Public Appeal	60	0	6:20 p.m. July 06
07/10/07	National Grid - NY (NPCC)	11:00 a.m.	Eastern New York	Major Storms	650	300,000	6:00 a.m. July 12
07/16/07	PacifiCorp (WECC)	4:17 p.m.	St. George, Utah	Fire/Load Shedding	306	-	9:00 p.m. July 16
07/18/07	Exelon Corporation West ComEd (RFC)	6:00 p.m.	Northern Counties of Illinois	Severe Weather	300	135,000	2:00 a.m. July 19
07/19/07	DTE Energy (Detroit Edison) (RFC)	3:00 p.m.	Southwestern Region of Service Territory	Major Storm	-	60,000	11:30 p.m. July 22
07/19/07	Dominion - Virginia Power/North Carolina Power (SERC)	3:50 p.m.	North, East and Central Virginia	Major Storms	72	107,000	10:15 p.m. July 19
August							
08/08/07	Progress Energy - Carolinas, Inc. (SERC)	1:00 p.m.	Portions of North Carolina and South Carolina	Made Public Appeal	N/A	N/A	9:00 p.m. August 08
08/08/07	PJM Interconnection (RFC)	3:56 p.m.	Mid-Atlantic Region of PJM	Voltage Reduction/Made Public Appeal	N/A	N/A	5:59 p.m. August 08
08/09/07	Progress Energy - Carolinas, Inc. (SERC)	12:45 p.m.	Portions of North Carolina and South Carolina	Made Public Appeal	N/A	N/A	9:00 p.m. August 09
08/09/07	Duquesne Light Company (RFC)	2:53 p.m.	Highland Area of Pittsburgh, Pennsylvania	Severe Thunderstorms	90	55,000	4:11 p.m. August 09
08/10/07	Progress Energy - Carolinas, Inc. (SERC)	12:20 p.m.	Portions of North Carolina and South Carolina	Made Public Appeal	N/A	N/A	9:00 p.m. August 10
08/13/07	Ameren Corporation (SERC)	1:30 a.m.	State of Missouri	Severe Thunderstorm	N/A	63,000	12:00 a.m. August 14
08/14/07	American Electric Power (CSWS) (SPP)	2:00 p.m.	CSWS Control Area of Southwest Power Pool Parts of Oklahoma, Texas, Louisiana, Arkansas	Declared Energy Emergency Alert2/Heat Wave	20	-	6:00 p.m. August 14
08/16/07	Dominion Virginia Power (SERC)	9:30 p.m.	Virginia and Eastern North Carolina - Primarily in Central Virginia	Severe Weather	200	93,300	10:49 p.m. August 17
08/19/07	Dominion Virginia Power (SERC)	11:34 p.m.	Central and Eastern Virginia	Severe Thunderstorms	100	58,500	1:10 a.m. August 20
08/23/07	Exelon Corporation West ComEd (RFC)	4:00 p.m.	Northern Illinois	Severe Storms	N/A	629,590	10:49 p.m. August 28
08/24/07	DTE Energy (Detroit Edison) (RFC)	6:00 p.m.	Southeastern Michigan	Severe Storm	N/A	75,000	6:30 a.m. August 28
08/29/07	Modesto Irrigation District (WECC)	1:53 p.m.	Modesto California and the Surrounding Areas	Shed Load	180	26,000	2:57 p.m. August 29
08/29/07	California Independent System Operator (WECC)	4:00 p.m.	CAISO Controlled Grid	Made Public Appeal	N/A	N/A	6:00 p.m. August 30
08/31/07	California Independent System Operator (WECC)	12:45 p.m.	CAISO Controlled Grid	Declared Energy Emergency Alert 1/Heat wave	N/A	N/A	8:00 p.m. August 31
September							
09/03/07	San Diego Gas and Electric Company (WECC)	12:30 p.m.	San Diego County, Southern Orange County, California	High Temperatures/Made Public Appeals	N/A	N/A	5:30 p.m. September 03
09/04/07	San Diego Gas and Electric Company (WECC)	8:30 a.m.	San Diego County, Southern Orange County, California	High Temperatures/Made Public Appeals	N/A	N/A	3:30 p.m. September 04
09/05/07	Luminant Energy Company, LLC (ERCOT)	7:53 a.m.	Central Texas, ERCOT Grid	Severe Weather/Transmission Fault-Units Tripped	1,084	N/A	1:11 p.m. September 05
09/06/07	State of California, Department of Water Resources (WECC)	8:00 p.m.	Hydro Electric System	Fuel Supply Deficiency	N/A	N/A	Ongoing
09/13/07	Entergy Corporation (SPP)	4:00 a.m.	Between Galveston and Beaumont, Texas	Hurricane Humberto	N/A	118,000	7:00 a.m. September 14

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09/17/07	Crawfordsville Electric Light and Power (RFC)	7:01 p.m.	City of Crawfordsville, Indiana	Electrical System Separation	50	9,600	7:48 p.m. September 17
09/18/07	Northern States Power Company (MRO)	5:14 a.m.	Minnesota, Wisconsin, North Dakota, South Dakota and Michigan	Electrical System Separation/Load Shedding/ Implemented Emergency Alert/Severe Storms	16	6,000	6:10 a.m. September 18
09/18/07	Great River Energy (MRO)	5:15 a.m.	Minnesota, North Dakota, Manitoba	Electrical System Separation/Load Shedding/ Implemented Emergency Alert/Severe Storms	8,000-10,000	GRE (1,900) Total 11,175	6:30 a.m. September 18
09/18/07	Midwest ISO (RFC)	5:15 a.m.	Manitoba, Minnesota, North Dakota, Portions of South Dakota and Wisconsin. Midwest ISO's Market subregions: OTP, NSP, GRE, ALTW, MP	Electrical System Separation/Load Shedding/ Implemented Emergency Alert/Severe Storms	8,000-10,000	11,175	12:00 a.m. September 18
09/24/07	New Covert Generating Company, LLC (RFC)	1:38 p.m.	Southwest Michigan	Unit Tripped	320	N/A	4:26 p.m. September 24
October							
10/18/07	Puget Sound Energy (WECC)	3:00 p.m.	Western Washington	High Winds	N/A	160,000	11:36 a.m. October 22
10/22/07	Southern California Edison Company (WECC)	2:01 p.m.	Southern California	Brush Fire/Load Shedding/Implemented Emergency Alert	451	90,323	2:22 p.m. October 22
10/22/07	California Independent System Operator (WECC)	2:05 p.m.	Southern California	Brush Fire/Load Shedding	700	300,000	2:22 p.m. October 22
10/22/07	San Diego Gas and Electric Company (WECC)	2:06 p.m.	San Diego County, California	Brush Fire/Load Shedding	199	68,780	2:43 p.m. October 22
10/26/07	Southern California Edison Company (WECC)	6:44 a.m.	Southern California	Brush Fire/Load Shedding	280	20,345	10:46 a.m. October 26
10/26/07	City of Riverside (WECC)	6:44 a.m.	Riverside, California	Load Shedding	240	104,000	10:43 a.m. October 26
November							
11/03/07	ISO New England (NPCC)	6:00 p.m.	Eastern Massachusetts, Rhode Island, Cape Cod	Tropical Storm	100	62,843	6:00 a.m. November 04
December							
12/01/07	ISO New England (NPCC)	6:04 p.m.	State of Maine	Voltage Reduction/Made Public Appeal/Fuel Deficiency	0	0	10:00 p.m. December 02
12/04/07	Puerto Rico Electric Power Authority (PR)	2:16 p.m.	Island of Puerto Rico	Voltage Reduction	0	0	5:53 p.m. December 04
12/10/07	American Electric Power (SPP)	3:08 a.m.	Tulsa, Oklahoma	Ice Storm	N/A	256,663	8:00 a.m. December 19
12/11/07	Westar Energy (MRO)	4:00 a.m.	Eastern half of the State of Kansas	Ice Storm	500	95,000	3:30 p.m. December 20
12/11/07	Puerto Rico Electric Power Authority (PR)	8:57 p.m.	Island of Puerto Rico	Voltage Reduction	0	0	9:22 p.m. December 11
12/23/07	Exelon Corporation West ComEd (RFC)	1:00 a.m.	The Entire ComEd Service Territory	Severe Storm	N/A	237,000	9:00 p.m. December 23
12/23/07	Consumers Energy (RFC)	5:30 a.m.	Lower 2/3 of Michigan Lower Peninsula	Winter Storm	50	134,288	6:07 p.m. December 25

¹ Estimated values.

Note: Estimates for 2007 are final.

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