Office of Electricity Delivery and Energy Reliability

Infrastructure Security and Energy Restoration

ENERGY ASSURANCE DAILY

Thursday Evening, April 28, 2011

Major Developments

Storms Continue to Sweep across the South and Other Parts of the U.S., Killing Over 280 People and Knocking Out Power to Over 2,000,000 April 25-28

Violent storms and tornadoes swept across much of the U.S. South moving into the Midwest and Northeast beginning on April 25. Alabama was particularly hard hit, and the governor declared a "major disaster" on April 28. Throughout the South, Midwest, and North there were over 1,000,000 customers still without power as of latest reports. The severity of the storms in some cases destroyed entire neighborhoods. Several states reported power outages, but the following table lists only those states where 10,000 or more customers lost power, based on available data. To read more about the storms, see yesterday's EAD.

Southern/Midwestern/Eastern U.S. Customer Power Outages April 25 – 28, 2011					
Electric Utility	State	Peak	Latest Reported		
Alabama Power	AL	412,229	313,000		
Huntsville Utilities	AL	125,000*	125,000		
Alabama Electric Cooperatives	AL	232,000	232,000		
Athens Utilities	AL	16,000	16,000		
Albertville Municipal Utilities Board	AL	8,000	6,500		
FirstEnergy	OH	240,000	55,000		
AEP Ohio	OH	28,900	13,500		
Dayton Power & Light	OH	2,000	66		
Georgia Power	GA	193,000	37,000		
Georgia EMC	GA	26,000	15,338		
EPB	TN	119,000	80,000		
Memphis Light, Gas, and Water	TN	45,000	5,162		
Knoxville Utilities Board	TN	44,231	3,422		
Clarksville Department of Electricity	TN	30,000	800		
Murfreesboro Electric Department	TN	21,500	750		
Fort Loudoun Electric Cooperative	TN	19,033	19,033		
Southwest Tennessee Electric	TN	12,240	500		
Jackson Energy Authority	TN	12,000	800		
Gibson Electric Membership Corporation	TN	10,000	450		
Paris Board of Public Utilities	TN	10,000	5,000		
Cumberland Electric	TN	4,800	0		
Duck River EMC	TN	1,000	0		
Entergy	AR	88,020	15,231		
First Electric Cooperative	AR	28,000	1,836		
Carroll Electric	AR	7,000	2		
Craighead Electric	AR	1,000	250		
Entergy	LA	55,000	10,208		
SWEPCO	LA/AR/TX	33,300	5,308		
Beauregard Electric	LA	7,800	5		
National Grid	NY	39,919	39,919		
NYSEG	NY	14,409	14,409		
RG&E	NY	3,901	3,901		
LIPA	NY	2,107	2,107		

Entergy	MS	36,000	6,719
Appalachian Power	VA/WV/TN	33,000	16,602
Dominion	VA	13,000	3,747
Shenandoah Valley Electric Cooperative	VA	3,000	792
Progress Energy	NC	21,753	5,070
Duke Energy	NC	19,642	517
DTE Energy	MI	12,000	12,000
Oncor	TX	10,000	170
Progress Energy	SC	7,470	254
Duke Energy	SC	6,144	129
TOTAL**		2,054,398	1,068,497

^{*} According to reports, all Huntsville Utilities customers are without power. Huntsville Utilities serves 125,000 customers.

Sources:

Reuters, 09:41 April 28, 2011

 $\frac{\text{http://news.blogs.cnn.com/}2011/04/28/\text{tornado-survivors-stories-flying-jeeps-moving-earth-neighborhoods-gone/}{\text{hpt=}C1}$

Alabama Power: http://southerncompany.mediaroom.com/index.php?s=43&item=2300,

http://twitter.com/#!/alabamapower

Alabama Electric Cooperatives: http://www.areapower.coop/content.cfm?id=2011#60

Huntsville Utilities: http://www.hsvutil.org/about-hu/the-history-of-huntsville-utilities/

Athens Utilities: http://www.decaturdaily.com/stories/At-least-3-dead-in-

<u>Limestone,78799?content_source=&category_id=&search_filter=&event_mode=&event_ts_from=&list_type=&ord</u> er by=&order sort=&content_class=&sub_type=stories&town_id=

FirstEnergy:

 $\frac{http://www.firstenergycorp.com/newsroom/news_releases/service_restored to more than 185000 firstenergy customers following win.html}{}$

AEP Ohio: https://www.aepohio.com/outages/details.aspx?stormName=April%2028%20High%20Winds%20Storm Dayton Power & Light: http://www.dpandl.com/customer-service/outage-center/outage-map/

Georgia Power: http://twitter.com/#!/georgiapower

Georgia EMC: http://www.georgiaemc.com/stormcentral/outagesbyregion.aspx,

http://www.georgiaemc.com/news/newsdetail.aspx?itemID=103

 $\underline{EPB: \underline{http://twitter.com/\#!/EPB_Chattanooga}}, \underline{http://www.newschannel9.com/news/damage-1000679-epb-except.html}$

Memphis Light, Gas and Water: http://azimuth.mlgw.org/OutageSummary.php,

http://www.commercialappeal.com/news/2011/apr/27/more-storms-headed-memphis-area-tries-recover-1800/

Knoxville Utilities Board: http://www.kgis.org/website/kub_outage/mainpage.htm,

http://www.knoxnews.com/news/2011/apr/26/knoxville-thousands-without-power-after-storm/

Clarksville Department of Electricity: http://www.clarksvillede.com/Storm_4262011.html,

 $\underline{http://www.theleafchronicle.com/article/20110427/NEWS01/104270336/Severe-weather-takes-out-trees-power-across-Montgomery-County?odyssey=tab|topnews|text|FRONTPAGE\ ,$

Murfreesboro Electric Department: http://www.dni.com/article/20110428/NEWS01/104280328

Fort Loudoun Electric Cooperative: http://www.wbir.com/news/article/167651/2/Almost-constant-tornado-warnings-in-East-Tennessee

Southwest Tennessee Electric: http://stemconline.com/2011/04/26/outage-update-1130-a-m/,

 $\frac{http://stemconline.com/2011/04/27/outage-update-1130-a-m-42711/\ ,\ http://stemconline.com/2011/04/28/outage-update-730-a-m-42811/\ ,\ http://www.jacksonsun.com/article/20110426/NEWS01/110426016/Southwest-Tennessee-update-730-a-m-42811/\ ,\ http://www.jacksonsun.com/article/20110426/NEWS01/1$

 $\underline{Electric\text{-}reports\text{-}almost\text{-}4\text{-}000\text{-}homes\text{-}regain\text{-}power?odyssey=tab|topnews|text|FRONTPAGE}}$

Jackson Energy Authority: http://www.jacksonsun.com/article/20110426/NEWS01/110426014,

 $\frac{http://www.jacksonsun.com/article/20110426/NEWS01/110426031/About-3-000-JEA-customers-still-without-power?odyssey=tab|topnews|text|FRONTPAGE|,$

^{**}Total outages only represent electric utilities listed in this table.

 $\frac{http://www.jacksonsun.com/article/20110427/NEWS01/110427005/1002/Highway-70-West-flooded-power-outage-updates-reported}{updates-reported}, \\\frac{http://www.jacksonsun.com/article/20110428/NEWS01/104280309/1002/Utility-crews-work-long-hours-restore-power-after-storms}$

Gibson Electric Membership Corporation:

 $\underline{http://www.jacksonsun.com/article/20110426/NEWS01/110426030/About-1-400-Gibson-Electric-customers-without-power?odyssey=tab|topnews|text|FRONTPAGE\ ,$

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Paris Board of Public Utilities:

http://www.parispi.net/articles/2011/04/26/news/local_news/doc4db6f9b24d373596215408.txt,

http://www.parispi.net/articles/2011/04/27/news/local_news/doc4db8473d0a011667818039.txt

Cumberland Electric: http://www.theleafchronicle.com/article/20110426/MAJOREVENT/110426003/CDE-

Electric-restored-most-customers-under-4-000-still-lack-power,

http://www.theleafchronicle.com/article/20110428/MAJOREVENT/110428002/Cumberland-crests-low-800-still-

without-power?odyssey=tab|mostpopular|text|FRONTPAGE

Duck River EMC: http://www.c-dh.net/articles/2011/04/27/top_stories/0001localstorm.txt,

http://www.wsmv.com/news/27700669/detail.html

Entergy (Arkansas): http://viewoutage.entergy.com/ar.aspx,

http://www.entergy.com/News_Room/newsrelease.aspx?NR_ID=2121

 $First\ Electric\ Cooperative:\ \underline{https://ebill.firstelectric.coop/outage/}\ ,\ \underline{http://www.firstelectric.coop/pdfs/FECC\ Outage}$

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Carroll Electric: http://www.outageentry.com/dvosm/dvOSM2.php?Client=cecar,

http://www.digitaljournal.com/article/305987

Craighead Electric: http://www.craigheadelectric.coop/content/severe-storms-knock-out-power

Entergy (Louisiana): http://viewoutage.entergy.com/la.aspx,

http://www.thenewsstar.com/article/20110427/UPDATES01/110427008

 $SWEPCO: \underline{https://www.swepco.com/outages/details.aspx?stormName=April\%2025-27\%20Ark-La-Tex\%20Storms}\\ Beauregard Electric: \underline{http://outage.beci.org/MilsoftOutageWeb/}, \underline{http://www.kplctv.com/story/14515120/thousands-without-power-after-overnight-storms}$

National Grid:

http://www.publicbroadcasting.net/wbfo/news.newsmain/article/1/0/1795656/WBFO.News/Winds.leave.tens.of.tho usands.without.power , http://www1.nationalgridus.com/niagaramohawk/stormcenter/

NYSEG: http://www.nyseg.com/Outages/outageinformation.html

RG&E: http://www.rge.com/Outages/outageinformation.html

LIPA: http://www.lipower.org/stormcenter/outagemap.html

 $\underline{\text{https://appalachianpower.com/outages/details.aspx?stormName=April\%2027\%20Glade\%20Spring\%20Va\%20Area\%20Storm}$

Dominion: http://www.dom.com/storm-center/dominion-electric-outage-summary.jsp,

http://www2.godanriver.com/news/2011/apr/28/30/tdmet03-possible-tornado-reported-in-goochland-ar-1001230/

Shenandoah Valley Cooperative: http://www.newsleader.com/article/20110428/NEWS01/110428007.

http://www.svec.coop/v.php?pg=4

Progress Energy: http://www.progress-energy.com/shared/outages/car/index.html

 $\label{lem:decomposition} Duke\ Energy:\ \underline{http://www.duke-energy.com/north-carolina/outages/current.asp}\ ,\ \underline{$

energy.com/outages/stats/

DTE Energy: http://www.detnews.com/article/20110428/METRO/104280432/

 ${\color{blue}Oncor:} \ \underline{https://maps.oncor.com/summary.asp} \ , \ \underline{http://www.cbs19.tv/story/14519658/tornadoes-touching-down-number-of-started and the summary of the summa$

across-east-texas

Storms and Winds Knock out Power at TVA's 3,391 MW Browns Ferry Nuclear Plant in Alabama, Leading All Three Units to Shut April 27-28

According to a filing with the Nuclear Regulatory Commission (NRC), the units lost offsite power on the afternoon of April 27. According to a TVA spokeswoman, the plant's backup power systems started up and are operating properly. External power was restored to the plant, but diesel generators were still running as of the evening of April 27. Operators reported April 28 that repairs to the transmission lines would take at least several days and could take weeks. The NRC reported that on the morning of April 27 all three units were operating at full power. Unit 1 has a capacity of 1,155 MW, while units 2 and 3 each have a capacity of 1,118 MW. Reuters, 09:21 April 28, 2011

http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2011/20110428en.html http://af.reuters.com/article/energyOilNews/idAFN2718319320110428?sp=true http://wpln.org/?p=26415

Information also derived from the NRC Power Reactor Status Reports:

http://www.nrc.gov/reading-rm/doc-collections/event-status/reactor-status/2011/

Eleven of TVA's High-Voltage Transmission Lines out of Service April 27 Due to Severe Weather

Severe weather in the area served by the Tennessee Valley Authority (TVA) caused serious damage to the utility's transmission system Wednesday, with power outages and high voltage lines down in Alabama, Tennessee, Kentucky and Mississippi. According to a TVA press release, only Cullman Electric Cooperative in Alabama was directly affected by the TVA transmission outage. Several other power companies sustained damage. According to news reports, TVA lost all of its power transmission lines in Alabama and Mississippi. According to a TVA executive, it may be weeks until power is restored to all customers.

http://www.tva.gov/news/releases/aprjun11/tornado.htm

http://timesfreepress.com/news/2011/apr/28/tva-losses-all-power-transmission-lines-alabama-an/

http://wpln.org/?p=26415

Electricity

Update: Exelon's 1,111 MW La Salle Nuclear Unit 2 in Illinois at Full Power by April 28

The Nuclear Regulatory Commission reported that on the morning of April 27 the unit was operating at 80 percent. Information derived from the NRC Power Reactor Status Reports:

http://www.nrc.gov/reading-rm/doc-collections/event-status/reactor-status/2011/

Update: AES's 226 MW Huntington Beach Gas-Fired Unit 1 in California Returns to Service by April 27

According to the California Independent System Operator, the unit reported a return from an unplanned outage by

http://www.caiso.com/unitstatus/data/unitstatus201104271515.html

Update: Reliant Energy Services, Inc.'s 495 MW Meldyn Gas-Fired Unit 2 in California **Returns to Service by April 27**

According to the California Independent System Operator, the unit reported a return from an unplanned curtailment of 490 MW by April 27.

http://www.caiso.com/unitstatus/data/unitstatus201104271515.html

Calpine's 751 MW Pastoria Gas-Fired Unit in California Reduced by April 27

According to the California Independent System Operator, the unit reported an unplanned curtailment of 511 MW. As of April 26, the unit reported it was ramping up from a previous unplanned curtailment. http://www.caiso.com/unitstatus/data/unitstatus201104271515.html

AES's 506 MW Redondo Beach Gas-Fired Unit 7 in California Shut by April 27

According to the California Independent System Operator, the unit reported an unplanned outage by April 27. http://www.caiso.com/unitstatus/data/unitstatus201104271515.html

ATCO's 368 MW Battle River Coal-Fired Unit 5 in Alberta Shut April 27 Reuters, 22:38 April 27, 2011

Thunderstorms and High Winds Cause Problems at TVA's 2,308 MW Sequoyah Nuclear Plant in Tennessee April 27

According to filings with the Nuclear Regulatory Commission (NRC), thunderstorms knocked out offsite power to the plant causing all three units to automatically shut down and leading to the loss of more than 30 percent of the offsite emergency sirens. Efforts are underway to restore the sirens to working order. Unit 1 has a capacity of 1,125 MW and Unit 2 has a capacity of 1,183 MW.

http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2011/20110428en.html

Update: Beacon Power Receives DOE Approval to Proceed with Phase II of Funding for Construction of 20 MW Flywheel Energy Storage Plant in Hazle Township, Pennsylvania April 28

In Phase II, Beacon will be allowed to draw up to 95% of the \$24-million Smart Grid grant it was awarded by the Department of Energy (DOE) in late 2009. The funding is provided through the DOE's Smart Grid Stimulus Grant program.

http://phx.corporate-ir.net/phoenix.zhtml?c=123367&p=irol-newsArticle&ID=1555933&highlight=

Petroleum

Update: Kinder Morgan Restarts 300,000 b/d, 715-Mile, Alberta-to-British Columbia and U.S. Northwest Trans Mountain Oil-and-Oil Product Pipeline April 27

The pipeline is operating at 80 percent pressure following the restart. The company shut the line on April 22 after discovering a small "product seep."

Reuters, 10:49 April 28, 2011

http://af.reuters.com/article/energyOilNews/idAFN2820369420110428

ConocoPhillips, CNOOC, Apache Report Large Production Changes in 1Q 2011

The three companies reported the following changes in production in the first quarter of 2011:

- ConocoPhillips saw a 25 percent drop in production to 1.7 million b/d.
- CNOOC produced a total of 85.2 million boe in the quarter, representing a 26.6 percent increase year-overyear.
- Apache reported production of 732,000 boe/d in the three month period ending March 31, compared to 586,000 boe/d during the same time period last year a 25 percent increase.

 $\frac{http://www.google.com/hostednews/ap/article/ALeqM5honw~HbIkTZYLgMpZr7M5NzjWUXg?docId=d40bec016ea84048818fdbaa390c6265}{ea84048818fdbaa390c6265}$

http://www.rigzone.com/news/article.asp?a_id=106574

http://investor.apachecorp.com/releasedetail.cfm?ReleaseID=572778

Update: Valero Starting Up Units April 28-29 at 315,000 b/d Corpus Christi, Texas Refinery Following Power Outages

After power outages disrupted operations at the facility earlier in the week, the company reported a new power outage late Wednesday caused by a transformer failure. The new outage impacted Complex 7 at the facility. Operators are currently in the process of restarting units.

Reuters, 10:43 April 28, 2011

Reuters, 11:06 April 28, 2011

Reuters, 01:11 April 28, 2011

 $\underline{http://www11.tceq.state.tx.us/oce/eer/index.cfm?fuseaction=main.getDetails\&target=153837}$

http://www11.tceq.state.tx.us/oce/eer/index.cfm?fuseaction=main.getDetails&target=153836

http://online.wsj.com/article/BT-CO-20110428-712195.html

Update: Following Delay, BP Begins Restoring Multiple Units at 475,000 b/d Texas City, Texas Refinery April 27-28 – Power Outage Forced Shut Facility on April 25-26

Restarts were planned for April 27, but were delayed due to a lack of reliable third-party power supply. Among other units, operators planned to restart the gasoline-making fluid catalytic cracking units numbers 1 and 3. DJN, 09:30 April 28, 2011

http://www11.tceq.state.tx.us/oce/eer/index.cfm?fuseaction=main.getDetails&target=153785

http://www11.tceq.state.tx.us/oce/eer/index.cfm?fuseaction=main.getDetails&target=153784

http://www11.tceq.state.tx.us/oce/eer/index.cfm?fuseaction=main.getDetails&target=153838

http://www11.tceq.state.tx.us/oce/eer/index.cfm?fuseaction=main.getDetails&target=153838

http://www11.tceq.state.tx.us/oce/eer/index.cfm?fuseaction=main.getDetails&target=153795

One Crude Unit Remains Shut to Repair Leak at Valero's 235,000 b/d Aruba Refinery Reuters, 10:44 April 28, 2011

Valero Reports Bad Weather Has No Impact on Production at 180,000 b/d Memphis, Tennessee Refinery

Reuters, 10:42 April 28, 2011

Natural Gas

Nothing to report.

Other News

NRC Chairman Questions Adequacy of Emergency Power Systems at U.S. Nuclear Facilities

Gregory Jaczko Chairman of the Nuclear Regulatory Commission (NRC) questioned whether the existing standards for back-up power are "reasonable" for outages lasting longer than four hours which is the current practice. The NRC is reviewing station the procedures, particularly at those plants relying on battery back-up power with limited access to other reliable power supplies.

Reuters, 14:00:26 April 28, 2011

Energy Prices

U.S. Oil and Gas Prices April 28, 2011					
	Today	Week Ago	Year Ago		
CRUDE OIL West Texas Intermediate U.S. \$/Barrel	112.29	111.12	82.67		
NATURAL GAS Henry Hub \$/Million Btu	4.35	4.33	4.18		

Source: Reuters

Energy Notes

Gulf LNG Energy's LNG Terminal in Mississippi to Begin Operations and Receive First Two Shipments Later this Year – Terminal Will Receive LNG from Africa

http://blog.gulflive.com/mississippi-press-

opinion/2011/04/expanding_jackson_countys_energy_presence_editorial.html

Leucadia National Corp. Plans \$2 Billion Synthetic Natural Gas Plant at Former International Paper Site in Moss Point, Mississippi

http://blog.gulflive.com/mississippi-press-

opinion/2011/04/expanding jackson countys energy presence editorial.html

Mississippi Power Planning \$600 Million Worth of Upgrades at Daniel Power Plant in Mississippi

http://blog.gulflive.com/mississippi-press-

opinion/2011/04/expanding jackson countys energy presence editorial.html

Tarrant County Judge Extends Ban on Natural Gas Drilling Until May 17 in Southlake, Texas April 27 – XTO Energy Already Canceled Plans to Drill in Southlake April 26 http://www.star-telegram.com/2011/04/27/3031085/judge-extends-order-banning-gas.html

Two Shell and Suncor Cargoes of Forties Crude Oil from the North Sea Canceled Due to Production Problems – Cargoes Were Due to Load in May

Reuters, 05:12 April 28, 2011

http://af.reuters.com/article/energyOilNews/idAFN2830029120110428

AGI Units #1 and #2 Shut, Restart for Unknown Reasons at Tilden Gas Plant in Texas April 27

http://www11.tceq.state.tx.us/oce/eer/index.cfm?fuseaction=main.getDetails&target=153839

"A" Turbine Shuts, Restarts at Goldsmith Gas Plant in Texas Due to Scrubber Malfunction April 27-28

 $\underline{http://www11.tceq.state.tx.us/oce/eer/index.cfm?fuseaction=main.getDetails\&target=153841}$

Update: Russia Ups Gasoline Export Duties to Counteract Domestic Fuel Shortages from Artificially Low Domestic Prices

Reuters, 13:45 April 28, 2011 Reuters, 13:16 April 28, 2011

Exelon CEO Sees New Nuclear Plant Construction Uneconomic Due to Low Natural Gas Prices

Reuters, 10:08 April 28, 2011

Nigerian Crude Oil Exports Projected to Reach Highest Level in Six Months at 2.15 Million b/d in June 2011 Due to Increased Demand and Fewer Attacks on Infrastructure Reuters, 08:47 April 28, 2011

Links

This Week in Petroleum from the Energy Information Administration (EIA) http://tonto.eia.doe.gov/oog/info/twip/twip.asp Updated every Wednesday.

Weekly Petroleum Status Report from EIA

http://www.eia.doe.gov/oil_gas/petroleum/data_publications/weekly_petroleum_status_report/wpsr.html Updated after 10:30 AM & 1:00 PM EST every Wednesday.

Natural Gas Weekly Update from EIA

http://tonto.eia.doe.gov/oog/info/ngw/ngupdate.asp Updated after 2:00 PM EST every Thursday.

ENERGY ASSURANCE DAILY

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http://www.oe.netl.doe.gov/ead.aspx

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