Outage Investigation Staff Report Docket U-15605

Prepared by Staff of the Michigan Public Service Commission

August 22, 2008

BACKGROUND

On June 19, 2008, the Michigan Public Service Commission issued an order in docket U-15605 directing the Staff to investigate power outages that Michigan customers experienced in early June following severe thunderstorms that passed through the area between June 6th and June 13th. During these storms, Michigan experienced three confirmed tornados, straight-line winds in excess of 70 miles per hour, and more than 11 inches of rain in some areas.[1] The damage resulting from these storms was extensive causing more than 700,000 customers in the Detroit Edison and Consumers Energy territories to be without power for extended periods of time, up to seven days.

Specifically, the Commission opened docket U-15605 "for the purpose of conducting an investigation to discover how the storm affected the utilities' distribution system, how the utilities responded, whether any changes should be implemented to reduce the potential for future power outages of the magnitude recently witnessed, whether there is evidence of a failure on the part of either utility to properly maintain its distribution system that could have contributed to the outages experienced during these storms, whether the utilities were properly prepared to receive and respond to customer calls to report outages, and whether the utilities sufficiently addressed all public safety concerns associated with downed power lines in a timely manner.[2] A key part of the discovery in this investigation came directly from utility consumers, and to facilitate that discovery, the Commission ordered that four public hearings would be held at various locations in lower Michigan to hear directly from the utility customers. The following public hearings were held as directed in the Commission order:

> "1. 10:00 a.m. to noon on Monday, June 23, 2008 in Hearing Room "A" of the Commission's Lansing offices, which are located at 6545 Mercantile Way, Lansing, Michigan 48911.
>
> 2. 1:00 p.m. to 3:00 p.m. on Wednesday, June 25, 2008 in the 9th floor Commission Chambers of the Grand Rapids City Hall Building, 300 Monroe Avenue NW, Grand Rapids, Michigan 49503-2206.
>
> 3. 10:00 a.m. to noon on Monday, June 30, 2008 in the Auditorium at the Clinton-Macomb Public Library, 40900 Romeo Plank Road, Clinton Township, Michigan 48038.
>
> 4. 2:00 p.m. to 4:00 p.m. on Monday, June 30, 2008 in the Board of Commissioners' Auditorium of the Oakland County Courthouse, which is located at 1200 North Telegraph"3

In addition to the public hearings, individuals were also given the opportunity to submit written comments directly to this docket, and also there were some customer complaints that were taken by the MPSC call center which were also uploaded directly to this docket. As part of the fact-gathering process, the MPSC staff also requested written reports from the utilities regarding the storms, and a

[1] Press release from Senator Levin's office, http://www.levin.senate.gov/newsroom/release.cfm?id=300373, July, 9 2008.

[2] http://www.dleg.state.mi.us/mpsc/orders/electric/2008/u-15605_06-19-2008.pdf.

[3] I.D.

meeting was held with Detroit Edison to review their performance and answer questions regarding the storms. Following the investigation, the Commission directed the Staff to file a report outlining the findings from the investigation, and this document is that report.

HISTORY OF SIMILAR INVESTIGATIONS

The MPSC has formally investigated similar widespread and lengthy storm outages four other times in less than twenty years. The catastrophic events causing the outages have occurred every three to five years. Staff has informally investigated a number of major but not catastrophic storms but only the formal investigations will be compared in this report. This report also does not include the regional blackout of 2003.

The first of these prior investigations was initiated by Commission Order dated July 17, 1991 in Case Number U-9916[4]. The similarity with this proceeding is that severe storms swept across Michigan causing more than a million customers of Consumers Energy and Detroit Edison to lose electric power. A week later power was still not restored to all customers. The PSC conducted public hearings, staff filed a report, the utilities filed a response and a follow up hearing was held. Later, the Commission approved utility specific individual stipulations and agreements. In summary and in part, Consumers Energy committed to achieving specific outage performance levels, doubling tree trimming budget, tripling lightning protection budget, increase call handling capability, significant infrastructure capital improvements as well as a number of other items found attached to the Commission's order in archives. Detroit Edison, in its stipulation and agreement, committed to a number of call handling capabilities, accelerate tree trimming, more frequent inspections, reduce circuit size and load, target interruption performance, better handle wire downs and guarding, provide reports and a number of other items also found attached to Commission's order in archive.

Four years later the Commission issued an order dated July 31, 1995 initiating another proceeding to investigate Consumers Energy and Detroit Edison's outage responses. This proceeding was also similar in having severe storms that swept across the state causing more than 800,000 outages some lasting seven days. Again the proceedings included public hearings, a staff report and utilities' response to staff report. Upon initiation of this case both companies continued to conduct separate programs agreed to as a result of the previous investigation. Detroit Edison applied for and got Commission approval for closure in the prior investigation. This approval included a settlement agreement between staff and Detroit Edison. Detroit Edison committed in this later agreement to a reliability improvement plan, providing better information to its customers during storms and in general, to provide timely and meaningful storm response, to addressing repetitive outage "pockets" and to establish a customer ombudsman position. Line clearance begins a list of examples Detroit Edison gives for reliability improvement. They also provide a list of examples for other commitment areas. A more complete and specific list and set of commitments can be found attached to Commission order in archive for docket U-10908[5].

[4] U-9916 docket contents are available in hard copy only at the MPSC.
[5] U-10908 docket contents are available in hard copy only at the MPSC.

On January 3, 2000 the Commission initiated a show cause case investigating Detroit Edison's compliance with its electric reliability agreement. This case, U-12269[6], was subsequent to a staff report investigating Detroit Edison's response to storm outages occurring in July 1999. At that time, Staff concluded that small pockets of poor performing circuits still exist and that tree trimming and general distribution system maintenance expenditures remained level since 1991. An increase in tree trimming operations and an improvement in the responsiveness of toll free number and complaint process were among eight staff recommendations. Detroit Edison reached a settlement with staff following an alternative in Commission order. The settlement involved a number of specific projects.

The Commission initiated e-docket U-12270[7] on January 3, 2000, simultaneous with U-12269, to investigate the service reliability for all of the regulated electric utilities. The Commission directed staff, to among other things, consult with stakeholders to develop recommendations regarding appropriate measures of service quality. Staff consulted with stakeholders and filed reports pursuant to Commission order. A number of comments were received. A number of service quality and reliability standards evolved and subsequently were approved by the Commission. These standards included a reporting requirement, call and complaint response standards, average restoration response times, wire down response, meter reading and new service connections. These standards acknowledged and provided for catastrophic storms. A slightly modified version of these standards was later adopted as administrative rules R 460.701 through R 460.752[8]. The administrative rules added penalty and incentive provisions where a customer could receive a credit on their bill for receiving unacceptable service as defined in the rules. The reports filed by the utilities may also be found on the Commission's website in e-docket U-12270.

SUMMARY OF STORMS / RESTORATION STATUS - JUNE, 2008

During severe storms that cause power outages in Michigan, both Detroit Edison and Consumers Energy provide status reports on outages and restoration efforts to the MPSC Staff in the Operations and Wholesale Markets Division. The following summary of the storms primarily came from ongoing updates provided to the Staff by Consumers Energy and Detroit Edison as the restoration efforts were unfolding.

On the afternoon of June 6th, 2008, a series of strong storms swept across lower Michigan which included high winds, lightening, and small hail. The majority of the damage resulting from the storms on June 6th was in the Consumers Energy territory in areas between Kalamazoo and Saginaw. Consumers Energy reported extensive damage to poles and crossarms resulting from the storms on June 6th. Consumers Energy reported that 104,000 customers in their territory lost power as a result of the storms that occurred on June 6th, with 45,000 remaining without power as of the morning of June 7th. The areas reporting the most damage from this storm were Mendon and the City of Saginaw. As of the morning of June 7th, Consumers Energy had already received 1588 calls

[6] U1-2269 electronic file, http://efile.mpsc.cis.state.mi.us/efile/viewcase.php?casenum=12269.
[7] U-12270 electronic file, http://efile.mpsc.cis.state.mi.us/efile/viewcase.php?casenum=12270.
[8] Service Quality and Reliability Standards for Electric Distribution Systems, http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=46000701&Dpt=LG&RngHigh=.

regarding downed power lines. Consumers Energy dispatched all of their crews, which were comprised of 23 assessment teams and 96 single service workers. On June 6th Consumers Energy also dispatched 42 contracted line crews, and 44 contracted forestry crews for tree trimming and removal.

Although the majority of the damage from the storms on June 6th was in Consumers Energy's territory, there were also 54,000 Detroit Edison customers that were left without power as a result of the storms on June 6th in the counties of Huron, St. Clair, Tuscola, and Wayne. Prior to the storms on June 6th, Detroit Edison had some of their line crews working in states immediately to the south of Michigan that had experienced extensive damage from storms just days prior to June 6th. On June 6th, Detroit Edison called all of their crews back to Michigan, and although the out-of-state utilities still needed their help with storm restorations, Detroit Edison's crews were all back to Michigan on June 7th.

On the next day, June 7th, another severe storm passed across lower Michigan covering a broad area south of M-46 with heavy rain and lightning. The status report from Consumers Energy received on Sunday, June 8th showed that the number of outages in their territory at that time was 36,000, and the total number of outages up through that time was 147,000 from these storms. The total number of calls received regarding downed power lines was up to 2433, with 327 yet to be resolved. By the morning of June 7th, Consumers Energy had requested additional crews from Great Lakes Mutual Assistance, however, due to the recent storms immediately to our south, only 16 additional crews were able to be brought in to help at that time. The additional storms on June 7th caused Consumers Energy to re-evaluate and reposition some of their resources, delaying restoration for some customers that lost power on Friday.

The storms on June 7th also resulted in an additional 16,000 Detroit Edison customers losing power in Livingston County. The total number of outages in the Detroit Edison territory was over 70,000 as of Sunday morning, with about 7,000 remaining without power on Sunday afternoon. At that point, Detroit Edison had their Emergency Headquarters staffed, and all of their crews were out in the field.

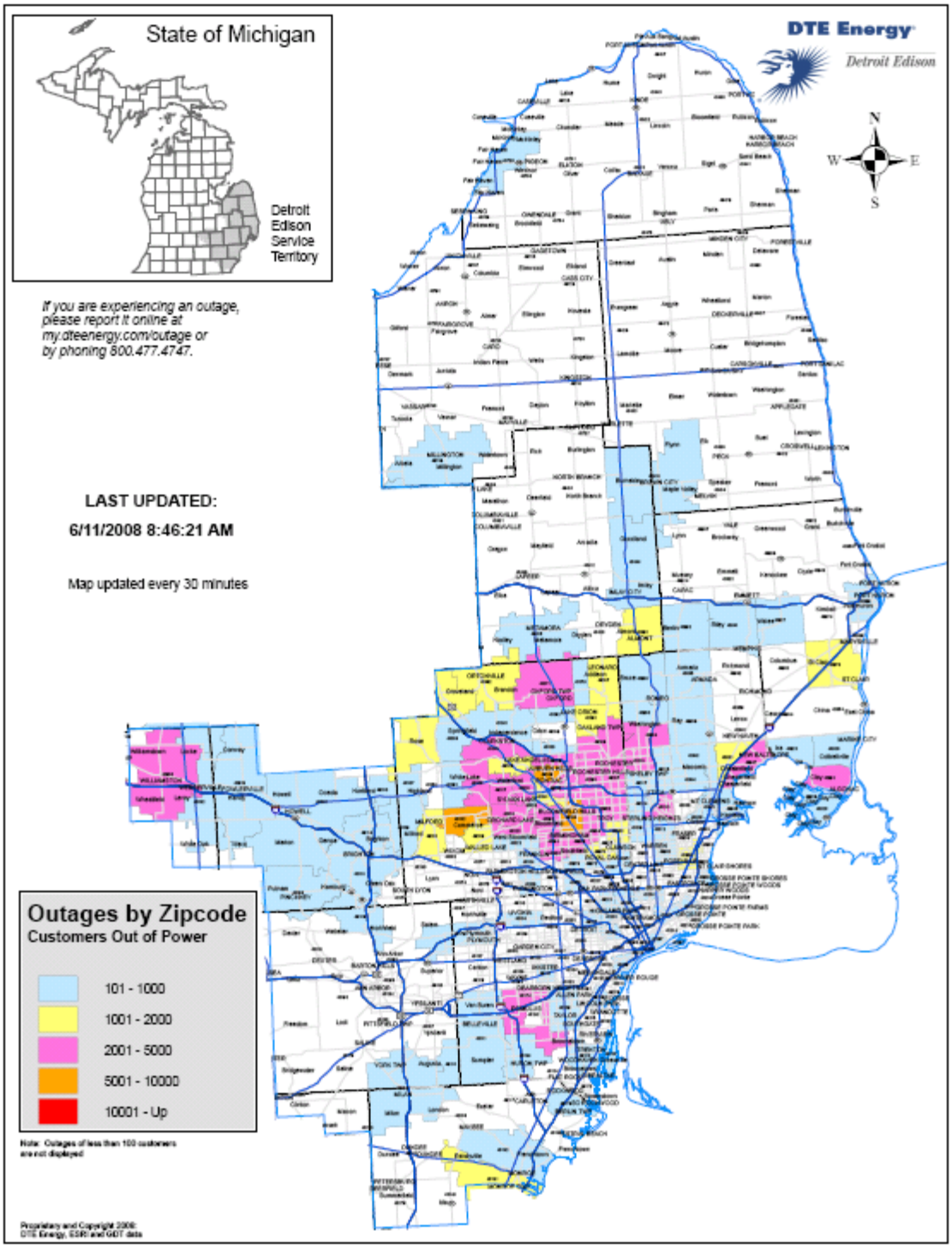
On Sunday, June 8th, a severe weather front crossed over lower Michigan with very strong straight line winds that caused extensive damage to much of lower Michigan south of M-55. The damage caused from this storm included many broken poles with damaged crossarms and wires. With the addition of this storm on Sunday June 8th, the total number of outages on the Consumers Energy System was almost 319,000, with 102,000 that were still without power as of Monday morning. The total number of wire down calls in the Consumers Energy territory had risen to 4942 throughout the storms, with 1165 outstanding as of Monday morning. Consumers Energy had 50 assessment teams out in the field and 110 + single service workers out in the field as well. Consumers Energy also had 57 contracted line crews and 59 contracted forestry crews in the field as well. Late Sunday, Consumers Energy obtained additional crews from Great Lakes Mutual Assistance, and had 70 crews from out-of-state utilities working in their territory as well.

As the storms crossed through the Detroit Edison territory late Sunday afternoon, numerous localized thunderstorms were observed with lightning and very high straight line winds. It was reported by Detroit Edison that in fact some of the winds from that storm were derecho winds, which are bow

echo super cell winds in excess of 60 miles per hour, and can reach levels as high as 150 miles per hour. Initially, Detroit Edison reported that 140,000 customers in their territory were without power as a result of this storm. The affected counties included Huron, Lapeer, Macomb, Monroe, Oakland, Sanilac, Tuscola, Washtenaw and Wayne. Detroit Edison deployed all of their own crews to the field, however, there was limited daylight left on Sunday to complete a thorough damage assessment. Detroit Edison proceeded to request additional crews from Great Lakes Mutual Assistance, however, all of the crews were still deployed to the south of Michigan, or over in Consumers Energy territory. As of Monday morning, both Consumers Energy and DTE expected that there would be some of the outages extending through Wednesday of that week provided that there wasn't any new storm activity that could potentially extend the outages.

Following the storm on June 8th, there was a multitude of reported problems with people trying get through to Detroit Edison on the phone lines, such as receiving a busy signal. Based upon the seemingly normal volume of calls that Detroit Edison was receiving after the storm, and the fact that there was limited daylight left for damage assessment after the storm had passed, Detroit Edison was unaware of any issue with the phone system immediately following the storm. The next day, Detroit Edison discovered that there was a technical issue that reduced the capacity on their phone lines to about half of the rated capacity. DTE worked with Verizon, who made modifications that alleviated the problem creating the capacity issues. At the time of this report, DTE was still working with Verizon and Avaya to determine the actual root cause of the problem, and develop a permanent solution. However, they were able to replicate the problem and develop a temporary work-around until the root cause analysis is completed and the permanent solution is implemented. Should the problem affecting the capacity on the phone lines happen again before the permanent fix is implemented, DTE and Verizon will utilize the temporary fix in order to allow the phone system to operate at its rated capacity.

After Detroit Edison's phone system was back up to full capacity, calls continued to pour in, and the damage assessments completed on Monday June 9th showed that the extent of the damage and outages was greater than had previously been reported. On Tuesday, Detroit Edison reported that the actual total number of customer outages resulting from this storm system was 350,000, with 195,000 customers without power on Tuesday morning, June 10th. The total outages from the storm systems reported on Consumers Energy's system had risen to over 358,000 with more than 47,000 customers still without power on Wednesday morning. The total number of wire down calls that Consumers Energy had received throughout these storms had risen to 6044 calls with 665 open as of Wednesday morning. Consumers Energy reported that they had 62 assessment teams and over 181 single person service workers in the field, as well as 57 contracted line crews, 110 contracted forestry crews, and 91 crews from Great Lakes Mutual Assistance out in the field. The picture below was available on Detroit Edison's website showing the status of the outages on their system as of Wednesday morning:



Detroit Edison reported that they had all available line crews and forestry crews out in the field, and was expecting out of state crews to join the restoration effort in their territory on Wednesday.

Consumers Energy reported that they expected to release all of the crews working in their territory from Great Lakes Mutual Assistance on Wednesday. After Consumers Energy released those crews on Wednesday, they were deployed over in Detroit Edison's territory to assist with restoration efforts in DTE's territory.

Consumers Energy reported that on Thursday, June 12th, there were only 1779 outages remaining in the Flint, Lansing, and Owosso areas of their territory. Consumers Energy was projecting to have all of the remaining customers restored by early afternoon on Thursday, June 12th, and considered this storm emergency to be closed out. Detroit Edison was reporting 72,000 outstanding outages in their territory on Thursday morning with the majority in Oakland County. On Saturday, June 14th, Detroit Edison reported that there were still approximately 10,000 customers without power in their service territory. Of the 10,000 remaining outages on their system, 5,000 were located in Oakland County, 1,000 were located in Livingston County, 300 were located in Macomb County and the rest were scattered throughout their service territory. Detroit Edison reported that they expected to have all of the remaining outages restored by Sunday morning.

REACTIONS TO THE OUTAGES AND RESTORATION EFFORTS

Following the storms and resulting power outages, there was a significant amount of customer frustrations and media coverage. The extent of the damage from these storms was widespread across the Lower Peninsula, some customers expressed trouble in reaching their utility to report problems, frustration with respect to ever changing estimated restoration times, and the overall duration of this power outage when compared with storms and outages in the recent past.

An example that summarizes some of the key frustrations expressed by utility customers was published in the Detroit Free Press on June 13th, titled "DTE Fails Customers Powerfully".

> "What can DTE do better ('160,000 residents without power ask: What's taking so long?' June 11)? Why do they only have 600 line people, as reported on their Web site? Why did it take until Wednesday morning for 200 out-of-state line people to come? Why did work crews start their day at 8 a.m. -- that's leaving DTE's central yard and not being at the job site -- as reported by local television? Why did it take until Thursday morning for 300 more out-of-state workers to arrive? Why aren't more local, reputable tree removal contractors being used?
>
> DTE claims this process is taking a lot of their resources. If DTE would have subcontracted tree removal immediately, their skilled electrical repairmen could have worked better, faster and more efficiently restoring power. Why isn't DTE doing a better job communicating to its customers? Their automated system failed and took several days to correct it."[9]

[9] http://www.freep.com/apps/pbcs.dll/article?AID=/20080613/OPINION04/806130329/1072

In addition to the media coverage, the MPSC staff received more than 150 customer complaints regarding electrical outages between June 8th and June 17th. Some of the overall themes taken out of the customer complaints received by the MPSC are as follows:

- Utility phone systems unavailable or not working properly
- Inaccurate estimated restoration times
- Lack of coordination between electrical crews and tree trimming crews
- My neighbors down the street have their power restored, but my utility forgot about me
- Utilities are taking too long to respond to downed power lines which is a safety issue
- Utilities need to implement more system upgrades to prevent this from happening
- Utilities need more frequent tree trimming with rate relief allowed
- Utilities need to put more facilities underground
- This outage was only one of many frequent repetitive outages experienced
- Emergency crews could not contact DTE through the phone system
- $25 penalty not high enough
- Suggestion that priority in storm restoration should be to areas without city sewer / water
- Suggestion that priority in storm restoration should be to schools and businesses

In addition to the complaints received above, there were customers that also reported to the MPSC that in fact, there was a lot of damage done to the system, and under the circumstances, the utilities performed well. One notable compliment received by the MPSC was a resolution from the City of Ferndale titled "Expressing Appreciation for the Work of DTE Energy", which states in part:

"Severe storms traversed southeastern Michigan on June 8, 2008 causing widespread damage and leaving hundreds of thousands of residents without electricity; and

Restoration work was hampered by additional severe storms and by a large number of downed trees resting on utility lines and obstructing access to damaged areas; and

Crews from DTE plus others brought in from surrounding states to assist with the critical situation, worked more than 16 hours a day under adverse conditions to restore service to its customers as soon as possible; and

Crews assigned to the City of Ferndale, although exhausted by the immensity of the work to be performed, were courteous and reassuring to our residents and worked tirelessly to reestablish power in the City; and

Residents of Ferndale with medical needs were faced with waiting possibly five days for power to be restored and crews from DTE stepped in to address the situation.

Therefore, be it resolved that we, Ferndale's elected officials, on behalf of our residents, thank DTE and their dedicated staff for the quick and efficient restoration of electrical service in the City of Ferndale under adverse conditions;"[10]

The City of Grosse Pointe also submitted comments to the MPSC, but took a very different position from the City of Ferndale. The City of Gross Pointe wrote "the City believes that the Public Service Commission would be warranted in requiring DTE to take additional steps to improve their service. Improvements in providing a more reliable power supply, in responding more quickly to service interruptions, and in providing information to citizens and municipalities regarding planned improvements and the status of repair interruptions."[11]

In addition to the customer telephone calls, and written comments accepted by Commission Staff, as part of the Commission Order, four public hearings were held to facilitate the gathering of information directly from utility customers. Written transcripts from each of the public hearings is available in the electronic docket on the MPSC website. The public hearings were held during business hours in Lansing, Grand Rapids, Clinton Township, and Pontiac. At each of the public hearings, Staff and Commissioners from the MPSC were present, as well as staff from Detroit Edison and Consumers Energy. Although there weren't any utility customers wishing to make a statement on the record present at the public hearing in Grand Rapids, there were 53 statements made on the record combined from the public hearings held in Lansing, Clinton Township, and Pontiac. The verbal statements made on the record highlighted some of the same issues and frustrations that came out in the complaints received by the MPSC during and shortly after the storms. The public hearings allowed for direct interactions between customers and utility representatives as well as MPSC staff. Several of the verbal statements taken were passionate, allowing for Staff and utility representatives to more fully understand the extent of the frustration experienced by those customers affected by the outages. In addition to the transcripts from the public hearings, the written comments received by the Commission may also be found on the Commission's website in e-docket U-15605.[12]

PRESIDENTIAL DECLARATION

The extent of the damages caused by the storms was significant, and the areas affected were all across the Lower Peninsula. Federal Preliminary Damage Assessment teams came to Michigan to verify and review damage to public property the week of June 23rd that occurred as a result of the storm systems moving through Michigan during June 6th – 13th. "The PDA teams indicated the most severe public damages include roads, bridges, culverts, water control structures, power generation facilities, and county and inter-county drain systems. Current estimates indicate that the state of Michigan and the 12 affected counties expended nearly $19.5 million on emergency measures to save lives, protect public health and safety as well as damage to public infrastructure."[13]

[10] http://efile.mpsc.cis.state.mi.us/efile/docs/15605/0091.pdf.
[11] http://efile.mpsc.cis.state.mi.us/efile/docs/15605/0087.pdf.
[12] E-docket for U-15605, http://efile.mpsc.cis.state.mi.us/efile/viewcase.php?casenum=15605.
[13] http://www.michigan.gov/gov/0,1607,7-168--195602--,00.html.

On July 3rd, Governor Granholm made a formal request to President Bush "to declare a major disaster for the state of Michigan as a result of heavy rainfall, flooding, and wind damage that occurred in a 12-county area from June 6 through June 13. The counties include: Allegan, Barry, Eaton, Ingham, Lake, Manistee, Mason, Missaukee, Osceola, Ottawa, Saginaw and Wexford."[14] The majority of these counties are on the west side of the Lower Peninsula. "This incident is of such severity and magnitude, Granholm requested supplementary federal aid in the form of public assistance and hazard mitigation assistance to help cover some of the costs incurred by state and local government in responding to the severe weather and flooding events. The request does not include assistance for individuals or businesses."[15]

United States Senators Debbie Stabenow and Carl Levin, along with the Michigan Congressional Delegation wrote a letter to the President expressing their support to the Governor's request to declare 12 counties in Michigan a federal disaster area allowing the state to qualify for federal assistance.[16] In part the letter states "During these storms, Michigan experienced three confirmed tornadoes, straight-line winds in excess of 70 miles per hour, and more than 11 inches of rain in some areas. Six people were killed, homes have been destroyed, portions of Michigan's infrastructure have been devastated, and resources were exhausted."[17]

On July 14th, President Bush declared 11 counties in Michigan disaster areas eligible for federal aid assisting with storm recovery. The 11 counties declared disaster areas resulting from storms in June are Allegan, Barry, Eaton, Ingham, Lake, Manistee, Mason, Missaukee, Osceola, Ottawa, and Wexford counties. Saginaw County was not declared a disaster area because damage estimates did not meet federal guidelines.

STAFF INVESTIGATION

The Commission Order directed the Staff to conduct an investigation to examine the severity of the storms and the utilities' activities. Further, the Order states "Toward that end, the Commission has opened this docket for the purpose of conducting an investigation to discover how the storm affected the utilities' distribution system, how the utilities responded, whether any changes should be implemented to reduce the potential for future power outages of the magnitude recently witnessed, whether there is evidence of a failure on the part of either utility to properly maintain its distribution system that could have contributed to the outages experienced during these storms, whether the utilities were properly prepared to receive and respond to customer calls to report outages, and whether the utilities sufficiently addressed all public safety concerns associated with downed power lines in a timely manner."[18]

[14] I.D.
[15] I.D.
[16] http://www.levin.senate.gov/newsroom/release.cfm?id=300373.
[17] I.D.
[18] http://efile.mpsc.cis.state.mi.us/efile/docs/15605/0001.pdf.

CONSUMERS ENERGY

The following data was gathered regarding the severity of the storms and the restoration performance in Consumers Energy territory:

- Approximately 11% of the complaints taken by MPSC from June 6th – June 18th were taken from Consumers Energy customers as opposed to Detroit Edison customers.

- Consumers Energy had several counties within their service territory declared disaster areas by the federal government.

- Consumers Energy completed the vast majority of restorations within 5 days.

- There weren't any Consumers Energy customers that came to the public hearing in Grand Rapids to voice concerns, and there was only one Consumers Energy customer at the public hearing in Lansing which made a statement.

Consumers Energy provided the following statistics specific to this series of storms for their territory:

Storm Summary Information	
Customers affected	378,972
Wire down calls	6,523
Customer calls handled	284,367 (peak hour 8:00-9:00 pm 6/8 - 28,132 calls)
Equipment Replacement: - Conductors - Poles - Transformers - Tree Trimming	 520,793 ft. 246 310 2,000 – 3,000 locations; 16,000 man-hours
Field Staffing: - Company line crews - Contract line crews - Mutual Assistance line crews (IN, OH, KY) - Contract Forestry crews - Company engineering assessment teams	Approx. 1,100 FTE's 181 57 85 110 62

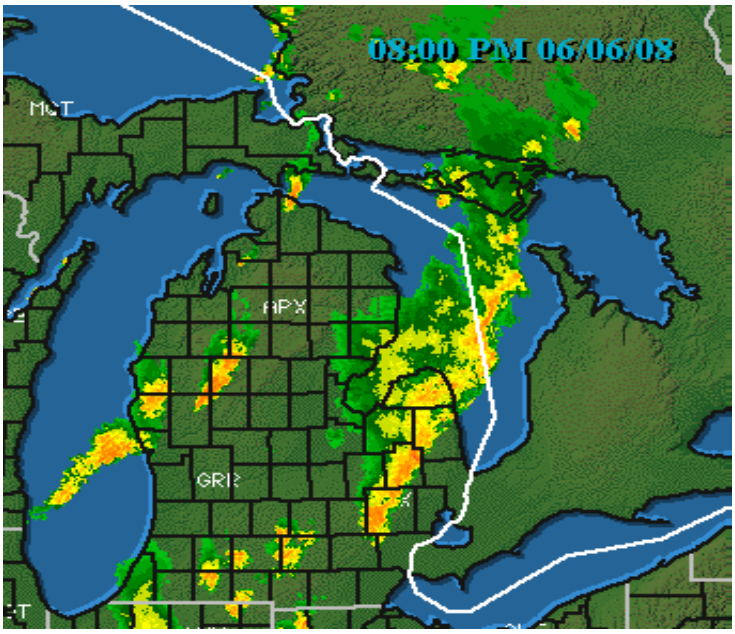
Given the severity of the storms in Consumers Energy's territory, Staff believes Consumers Energy did everything in their power to restore customers as quickly as possible. Further, Staff believes that the general public is of a similar opinion, as evidenced by the reduced levels of customer complaints taken shortly after the storm event, that only one Consumers Energy customer made a statement in the combined public hearings that were held, and also the relatively lower level of written comments submitted to the docket by Consumers Energy customers as opposed to Detroit Edison customers. Although Consumers Energy did receive some complaints in the written comments submitted into the docket, and also a few complaints made to the MPSC during the restoration efforts, Consumers Energy, with the help of Great Lakes Mutual Assistance crews, was able to restore their customers within 5 days in areas that were declared federal disaster areas. Given the severity of the storms,

Staff is of the opinion that Consumers Energy acted quickly and did everything possible to restore their customers in a timely manner.

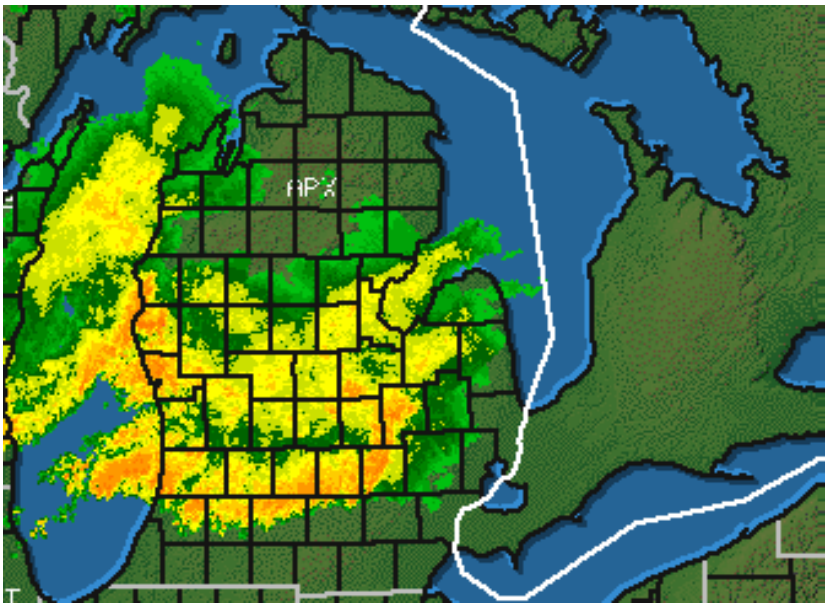
DETROIT EDISON

As the vast majority of customer complaints received in all venues were from Detroit Edison customers, and the reported issues with the telephone systems, Staff focused the bulk of the investigation on the activities and performance of Detroit Edison. Following the public hearings and comment period, Staff met with several representatives from Detroit Edison on July 15th to review the activities that Detroit Edison undertook in the days immediately following the storms. Staff received a presentation from Detroit Edison, portions of which will be included in this report, and a significant amount of time was spent answering questions from the Staff.

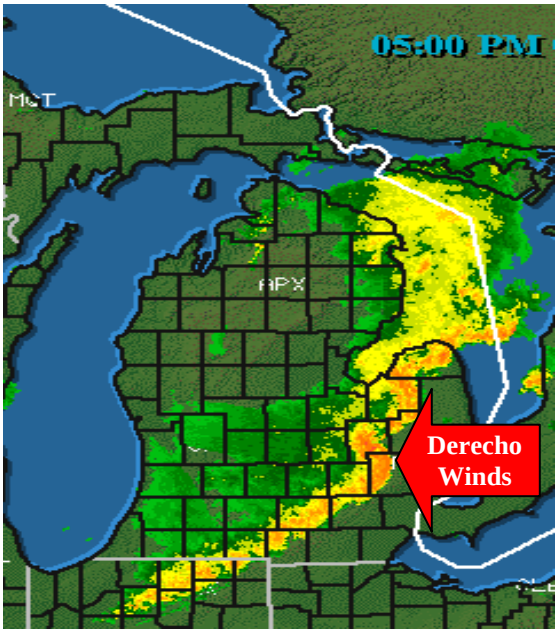
Detroit Edison reviewed the chronology of the storms that hit their territory starting on Friday June 6th, and provided the following weather radar map.



On Friday June 6th, severe thunderstorms with gusty, high winds, and small hail crossed Detroit Edison's territory around 8:00 p.m. Over 54,000 customers were affected in Huron, St. Clair, Tuscola, and Wayne counties. Detroit Edison crews were out of state assisting restoration efforts just south of Michigan from storms that occurred in the preceding days. Detroit Edison called back all of their out of state crews, and they were all back in home territory on Saturday, June 7th. On Saturday, June 7th, another severe thunderstorm hit their service territory. The storm on Saturday June 7th, depicted in the radar map below, was a severe thunderstorm with heavy rain that impacted over 16,000 customers in Livingston County.



The combined total number of customers affected from the storms on Friday and Saturday was 70,908 with approximately 7,000 customers still needing to be restored as of Sunday evening. Detroit Edison reported that the National Weather Service issued a thunderstorm watch until 10 p.m. for Sunday evening. At that point Detroit Edison had all of their crews out in the field, and their Emergency Headquarters was staffed. On Sunday, June 8th, around 5 p.m., numerous localized thunderstorms with high winds, and high levels of lightning entered the Detroit Edison territory as depicted below.



The storms cleared out of Detroit Edison's territory between the hours of 6 p.m. and 8 p.m. on Sunday evening. Detroit Edison reported that initially, it appeared that outage information was arriving normally, and that there appeared to be 140,000 customers affected. Detroit Edison immediately requested additional crews from Great Lakes Mutual Assistance.

Detroit Edison provided staff with the following Storm Summary tables:

Table 1A: Storm Summary June 6-10

	June 6	June 7	June 8	June 9	June 10
Customer Outages	43,926	13,229	227,204	69,924	30,031
Outlook	Tornado Watch		T-Storm Watch	T-Storm Watch	
Rain		Heavy Rain	Heavy Rain		
Hail	Hail		Hail	Hail	
Wind	60 mph		100 mph Derecho	60 mph	
High Temp	95 F	86 F	93 F	91 F	79 F
Dew Point	73 F	73 F	75 F	74 F	70 F
Lightning Flashes	6,331	2,227	7,056	688	171
Counties Affected	Huron St Clair Tuscola Wayne	Livingston	Huron Lapeer Macomb Monroe Oakland Sanilac Tuscola Washtenaw Wayne	Livingston Monroe Washtenaw Wayne	Oakland Wayne Macomb

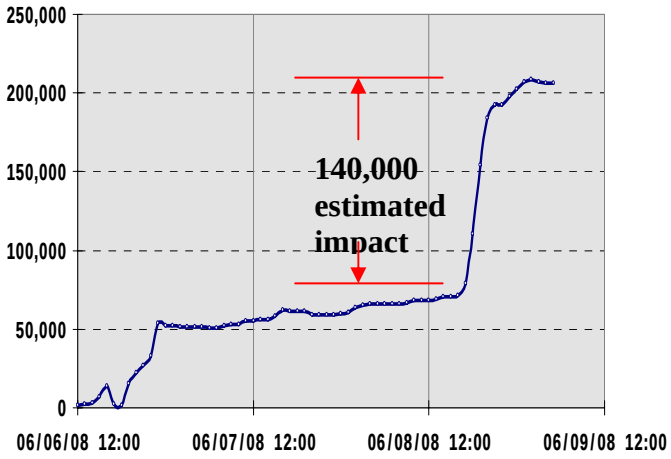
Table 1B: Storm Summary June 11-15

	June 11	June 12	June 13	June 14	June 15
Customer Outages	35,402	7,614	34,658	8,867	19,380
Outlook			T-Storm Watch		T-Storm Watch
Rain			Heavy Rain		
Hail			Hail		Hail
Wind			40 mph		60 mph
High Temp	86 F	85 F	87 F	82 F	84 F
Dew Point	70 F	75 F	77 F	72 F	64 F
Lightning Flashes			2,621	145	569
Counties Affected	Macomb Wayne Oakland	Oakland	Livingston Oakland Washtenaw	Oakland Livingston	Oakland Tuscola Washtenaw Wayne

One of the primary concerns raised by the Staff with Detroit Edison was the problems that were reported with their telephone system. Immediately following the storms in the Detroit Edison

territory, and carrying over for at least another full day, there were multiple reports from individuals saying that they were unable to contact their utility because they were receiving busy signals, or the calls just wouldn't go through.

Detroit Edison reported that immediately following the storm on Sunday, the incoming calls appeared to follow the normal pattern, where there is an initial spike of calls reporting outages that eventually starts to flatten out, which typically indicates the full scope of the outages resulting from the storm. The following chart shows the number of customer calls reporting outages plotted against time.



Detroit Edison reported that there were three factors that were masking the true scope of Sunday's storm's actual total impact. The "phone system" was only working at about half of the rated capacity, meaning that the phone system could only handle about half of the calls at any given time that it was rated to handle. The storm happened between 6 p.m. and 8 p.m. on Sunday with limited daylight remaining that evening to complete the damage assessment. Also, ongoing restoration efforts at other utilities resulted in an initial lack of mutual assistance, which had an impact on speed of restoration.

The reports on Monday morning indicated that the storms that passed through on Sunday evening included derecho winds[19] which are bow echo supercell winds in excess of 60 mph that can reach as high as 150 mph. The damage assessments completed on Monday morning indicated that the storm system was significantly more devastating than was thought previously. Detroit Edison reported that the storm restoration process was complex with 39,353 trouble construction jobs that had to be investigated and addressed. Logistics and field work involved coordination of Detroit Edison lineman, company contract lineman, foreign lineman as well as substation operators, line clearance, public safety and various office personnel. A survey of circuit evaluation information indicates that nearly 90 percent of outages were caused by tree interference. Of these, approximately 45 percent were attributed to trees from outside the normal ten foot clearance zone.

[19] http://en.wikipedia.org/wiki/Derecho.

Detroit Edison provided MPSC staff with several photos of actual damage that occurred during the storm included in Appendix A, and the following statistics regarding the significant restoration efforts that were undertaken during the storms.

- 10,517 trees trimmed
- 3,216 trees removed
- 106 miles of wire replaced
- 498 poles & 411 transformers replaced[20]
- Diseased trees outside of the line clearance zone created some of the damage
- Large trees were even the cause of some single customer outages
- Extensive pole damage was caused necessitating crossarm replacements
- 39,353 individual jobs were completed in this restoration effort

Reports from customers, and safety officials such as fire department personnel, stating that they were unable to get through on the phone lines to reach Detroit Edison to report outages and downed power lines continued to come in. The reports of difficulty getting through on the phone lines coupled with additional damage assessments completed early on Monday morning led Detroit Edison investigate potential issues with the phone system, and re-evaluate the estimates for the total impact of the storm.

Detroit Edison reported that the severe damage and high number of customers out of electric service resulted in an exceptionally high call volume into the call center infrastructure over a very short time period. This volume, accompanied by a series of hardware and software issues that occurred, caused a portion of the Company's Voice Response Unit (VRU) and the Interactive Voice Response (IVR) systems that were supplied by Avaya, to operate with limited capacity. This limitation of capacity occurred at the onset of the June 8th storm until resolved on or about June 9th.

During high outage storm events, customer calls primarily interact with the IVR/VRU systems in order to process outage reports quickly. Detroit Edison reported that a typical outage report takes an average of 135 seconds to handle in the IVR systems and 100 seconds in the VRU systems after the call is acknowledged and received by the IVR/VRU. During the period of limited capacity, a customer may have been subjected to the following responses while attempting to contact Detroit Edison: continuous ringing, a busy or rapid busy signal, or a response that indicated "Your call cannot be completed at this time. Please try again later."

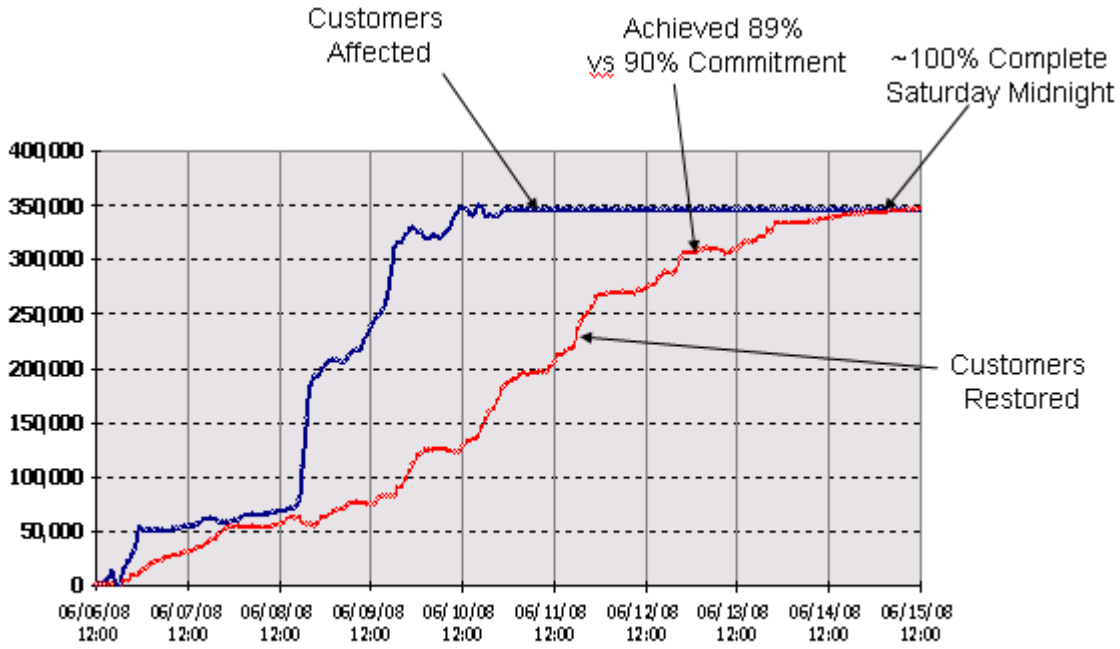
Detroit Edison and their support vendors, Verizon and Avaya, began immediately working on the various problems that occurred and developed an interim solution to avoid the problem in the future. There is a yet to be identified software problem within Avaya's IVR/VRU system. Verizon was able to develop an interim solution that gets around the software problem. The interim solution is in effect to prevent the capacity limitation in the event of another catastrophic storm. Detroit Edison reported that they will continue to work with its vendors to identify the cause of the problem and to implement a permanent solution.

[20] Detroit Edison reported that 498 pole replacements and 411 transformer replacements is the 5th highest number of pole and transformer replacements in a storm restoration effort for Detroit Edison.

The MPSC Service Quality and Reliability Standards[21] include provisions for the utilities to monitor and report a "Call blockage factor" which is the percentage of calls that do not get answered. In addition, the standards state that an electric utility shall have an average customer call answer time of less than 90 seconds, and an electric utility shall have a call blockage factor of 5% or less. Staff expects that Detroit Edison is taking all steps possible to meet those standards.

RESTORATION TIME AND MUTUAL ASSISTANCE

After the damage assessments were completed and the issue with the phone system was corrected, Detroit Edison estimated that the number of customers affected by the storm was actually 350,000 instead of the 140,000. After the full scope of the outages was known, Detroit Edison made a commitment to have 90% of their customers restored by midnight on Thursday of that week. Detroit Edison presented the following chart that shows both the number of customers affected through the storms and the number of customers restored plotted versus time.

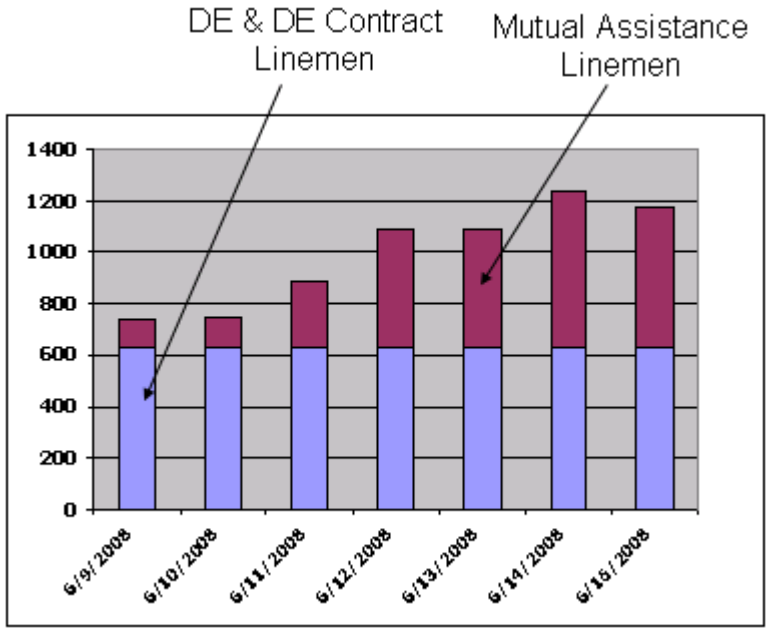


Detroit Edison practically met the commitment to have 90% of customers restored by midnight on Thursday, falling slightly short at 89%. Detroit Edison pointed to the fact that although they immediately requested additional crews from Great Lakes Mutual Assistance following the storm on Sunday, they were unable to obtain any help at first, and then only limited help from any of those crews until Wednesday due to the storms that had hit very hard in adjacent areas just prior to the devastating storms in Detroit Edison's territory. There were heavy storms in Indiana and Ohio on June 3rd through June 6th that were still requiring Mutual Assistance, and Detroit Edison had 51 of

[21] Service Quality and Reliability Standards for Electric Distribution Systems, http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=46000701&Dpt=LG&RngHigh=.

their linemen and support personnel out assisting Duke Power during that timeframe. In addition to the needs in Indiana and Ohio, Consumers Energy also had Mutual Assistance crews working in their territory on restorations from storms that occurred on June 6th and 7th, which later were declared federal disaster areas due to the significant amount of public damage that occurred.

As areas in Indiana and Ohio made progress with restorations from storms in their area, additional Mutual Assistance crews became available to help in the Detroit Edison territory, and there was a significant increase in Mutual Assistance crews as Consumers Energy finished the restorations in their territory midweek. It should be noted that DTE deployed all of their available crews, including contract crews immediately following the storm. Even though there was an issue with the phone system, and the original estimate of the number of customers impacted by the outages was low, all of their crews and contract crews were deployed immediately. Although it's possible that immediate knowledge of the full scope of the damage may have caused Detroit Edison to deploy some of their crews to alternate areas at first, it's questionable whether or not that would have had an impact on the overall length of the storm restorations, as all available crews were deployed immediately, and continued to be out in the field throughout the restoration period. The chart below depicts the number of crews, and the source of those crews throughout the restoration period.



Another common complaint made by DTE customers affected by the outage was that there were crews driving all over the place, some electrical crews, some forestry crews, and it appeared unorganized and as though the there wasn't sufficient coordination between the different crews. Detroit Edison reviewed their emergency management process with the staff, including steps taken to assess the damage, make the area safe for forestry crews if needed, have trees trimmed or removed, and finally make repairs to the electrical facilities. Depending on the specific damage, each one of those steps may need to be completed by a different person or crew. A common complaint made at

the public hearings, was why weren't the forestry crews paired with the electrical crews so that as soon as the electrical crew assessed the damage, and made the working conditions safe, then the forestry crew could immediately trim and remove the trees, and then the electrical would immediately be able to make repairs and restore service to the circuit. The restoration effort was described literally as "all hands on deck", and the crews were purposefully not paired up together, because there would have been significant chunks of time while electrical crews were standing around waiting for the forestry crews to complete their work, and vice versa. Instead Detroit Edison made best efforts to have all of the crews working at all times, and not waiting around for each other in order to restore service to all of their customers as quickly as possible.

A related complaint made by several utility customers was that crews would come into their area, and restore power to only a portion of the customers that were without electric service and then leave without fully restoring all of the affected customers in a given area. This is referred to as "trouble after trouble". When the crews arrive, they will fix what they believe is the cause of the outage, without knowledge that there is actually more damage requiring an additional fix a little further down the street. Trouble after trouble is something that can happen during storm restoration efforts, however Detroit Edison recognizes that trouble after trouble adds costs and can lengthen the outage duration experienced by customers. Detroit Edison has proposed adopting an AMI (Automated Meter Infrastructure) System, as evidenced in their latest rate case U-15244. The Commission is also interested in the advantages that AMI systems may bring to customers, as evidenced in the July 1, 2008 Order in docket U-15620 regarding potential minimum functionality standards and criteria for advanced metering infrastructure.

Several customers complained to Staff regarding the inaccuracy of restoration estimates provided by the utilities. Detroit Edison reported to Staff that they strive to provide accurate restoration estimates as quickly as possible. During large storm situations, Detroit Edison utilizes the Restoration Priority Scheduler (RPS) to prioritize outages by circuit. The program assesses the resources required to repair, and then calculates an estimated restoration time, which is given to the customers. Detroit Edison reported to Staff that restoration estimate accuracy for these series of storms was over seventy percent.

During the public hearings, some of the customers reported that they received phone calls from Detroit Edison representatives, or in some instances, a personal visit from Detroit Edison representatives, questioning whether or not there was in fact an outage at their premises, or whether or not power had in fact been restored. Detroit Edison reported that during the ten day storm period the company put an aggressive call back program in place that consisted of 60 employees calling back customers between 08:00 and 21:00 hours. These employees contacted 14,006 customers to gain additional information which resulted in identifying 1,248 jobs that were already completed in the field, confirming the status of 3,037 jobs, and entering the correct trouble code for 242 jobs. Making these adjustments reduced sending resources to non-outage locations as well as improved our restoration efficiency by dispatching the appropriate resources. It should be noted that full implementation of an AMI (automated meter infrastructure) program would likely make additional gains in restoration efficiency, and would eliminate the need for the call-back program because the utility would have immediate access to actual meter data that would allow them know whether or not their was power at any individual's customer location.

Reliability standards administrated by the MPSC as specified in R 460.701 through R460.752[22], includes a provision for a customer to be given a $25 credit if their power is not restored within 120 hours during catastrophic conditions. Below is a chart showing the amount of credits that have been given to residential customers during catastrophic conditions as reported by the utilities in docket U-12270.

RESIDENTIAL CREDITS GIVEN DURING CATASTROPHIC CONDITIONS - U-12270

Year	Consumers Energy	Detroit Edison
2007	$25	$0
2006	$25	$0
2005	$0	$50
2004	$25	$0

Several customers commented that they were unaware of the $25 credit until after they had spoken with Staff, and that twenty five dollars was not nearly enough to cover damages that they had incurred due to the outage. Although Staff does not believe that the intention of the twenty five dollar customer credit was ever meant to make customers whole, as would an insurance policy covering replacement costs, an informational campaign to expand customer awareness of the rules and credits available should be undertaken.

Although the outages were extensive and the duration of the outages was difficult, Detroit Edison reported that the restoration efforts were a success from a safety standpoint. Detroit Edison reported to Staff that there were no reports with public contact with any of the company's equipment during the storm restoration. Though employees logged over 350,000 hours, Detroit Edison recorded no significant injuries to employees who worked the storm.

TREE TRIMMING

As might be observed from review of prior investigations, tree trimming, or lack there of, is of particular focus as a common cause and/or answer. The storms in early June were so severe that there is perhaps no surprise that trees would have caused havoc on utility facilities. Trees are found however as a significant cause of outages even without a severe storm. Acknowledging this, the utilities are required to conduct lines clearance activities (a.k.a. tree trimming or more recently vegetation management) (R 460.3505). They are also required to analyze outage causes and prevent them (R 460.3705) and comply with the National Electrical Safety Code (NESC) (R 460.811).

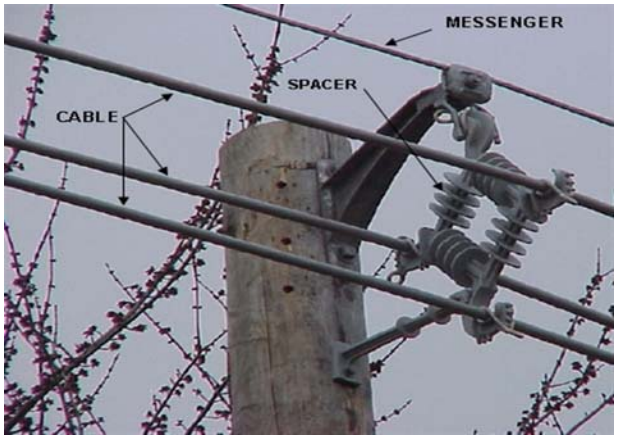
While it would be difficult if not impossible to measure the differential effect of additional tree trimming it would be expected to have reduced the impact of a severe storm. The extent of trimming, removal, line clearance or vegetation management becomes a question. The administrative rules, referenced above, require the activity but do not detail its extent particularly distances. The prior dockets did include commitments on expenditure and number of trees. The NESC (Rule 218) gives some direction in determining the extent of trimming required but again does not detail particular

[22] http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=46000701&Dpt=LG&RngHigh=.

distances. In general, utilities trim trees to a distance reflecting voltage level and which might prevent contact before their next visit. This is typically 10 feet of clearance to a distribution line. The distance is greater for higher voltages and less for secondary voltages and service drops. In some cases a utility will find it more reasonable to remove (trim to the ground) a tree. The trimming distance is otherwise dictated by the width of easement or where they can get permission. A more detailed discussion can be found in a report on tree trimming debris removal policies. This report is posted in the MPSC's document library.

Detroit Edison does not trim trees around service drop lines. This differs from other utilities as tabulated in the report just mentioned. These trees adjacent to a customer's house could cause the service drop line to pull away from the house requiring a customer to hire an electrician to do repairs before utility restores service. Of greater relevance, an outage to a service drop could be in addition to an outage of the distribution system otherwise called a "trouble behind trouble". These types of outages would understandably frustrate a customer that sees the restoration crews driving away thinking they fixed the problem. It then compounds into confusing communication when a customer is told an outage wasn't reported. This type of complaint was heard through these proceedings. Even if Detroit Edison trimmed service drops it might not have prevented this type of outage due to the magnitude of the storm(s). A customer can ask for temporary disconnect/reconnect to conduct their own tree trimming around the service drop line. This is also addressed in the debris removal report.

Interference from trees during storm situations is typically responsible for a large share of customer outages where customers are served by overhead power lines. In heavily treed areas, Detroit Edison has been using more Hendrix cable, or spacer cable, which has a steel reinforcement that is meant to make the circuits more resistant to tree contact, thus preventing outages from minor tree contact. According to a report by Staff of Detroit Edison's distribution reliability in docket U-14603, the use of Hendrix cable, as shown below has made improvements in Detroit Edison's distribution reliability.



The steel messenger shown above provides added strength and is meant to prevent moving tree limbs from coming into contact with the conductors. However, Detroit Edison reported that entire trees falling on the Hendrix cable, had a tendency to break poles and create more complicated repairs for

the restoration crews than typical conductor replacements. Although the use of Hendrix cable has generally improved distribution reliability, it is proving to be more challenging to deal with in severe storm situations.

Detroit Edison also reported that they found several instances where diseased trees that existed outside of the tree trimming clearance zone had fallen into their circuits causing damage. Detroit Edison reported that approximately 90% of customer outages from this particular storm system were attributed to tree interference, and of those, approximately 45% were attributed to trees located outside of the clearance zone. Staff believes the havoc that severe storms caused on utility facilities was exacerbated by trees located outside of the line clearance zone.

The magnitude of the tree damage especially related to electrical outages may at least temporarily gain support by the public for Detroit Edison's line clearance activities especially in areas with refusals. For this while, Detroit Edison should increase addressing the 'danger trees' outside easement areas. They should also work with the Department of Agriculture to develop a mutual program addressing ash trees. Detroit Edison has committed to collaborate with communities to incorporate the removal of dead ash trees outside of their line clearance zone as part of their overall reliability plan.

Some customers told Staff that they believe that the utilities need to trim trees more frequently, and some added that additional funding should be made available to cover the costs of additional tree trimming to help avoid customer outages. Frequently, Staff also receives complaints from customers stating that the utilities are trimming and removing too many trees or are trimming things that the customers don't want to have trimmed, even if they are inside the clearance zone. Any recommendation for additional tree trimming may be met by resistance from customers who want to keep their trees, and also from customers that may not be happy with a rate increase to support expanded tree trimming efforts.

Several customers told Staff that a more expanded use of underground facilities would reduce the number of outages that customers experience in storm situations. Based upon Commission Order, Staff conducted an investigation into expanding the use of underground facilities, and filed a Staff report in docket U-15279.[23] Details may be found in the Staff Report, however, it should be noted that not only would expanding the use of underground facilities lead to rate increases, it would also take many years, or possibly decades to convert enough of the overhead facilities to underground in order to provide relief from storms such as were experienced this past June.

STAFF CONCLUSIONS AND RECOMMENDATIONS

The severe storms passing through Michigan in early June caused significant damage to the distribution infrastructure in both Detroit Edison's territory, and Consumers Energy's territory, leaving hundreds of thousands of customers in the dark for extended periods of time. The extended outages and the communications difficulties experienced by customers led to frustration, and

[23] http://efile.mpsc.cis.state.mi.us/efile/docs//0008.pdf.

questions regarding the performance and capability of the utilities during the restoration efforts. The costs of the restoration efforts were significant, as reported by Crain's Detroit, "June storms that knocked out electricity to more than 760,000 customers of Michigan's two largest utilities hit the electricity providers with a combined cost of some $48 million to restore power."[24] The restoration efforts cost the utilities, and the extended outages cost their customers.

This was a severe storm system, however, there is still room for improvement. The focus of Staff's investigation has been on the performance of Detroit Edison, because of the excessive time the company took to restore power to its customers. Staff acknowledges that Consumers Energy greatly benefited from Great Lakes Mutual Assistance, and should also evaluate their operational practices and incorporate improvements as well.

Detroit Edison recommended to Staff the following improvement opportunities, and Staff agrees that Detroit Edison should pursue each of these improvement opportunities:

- Perform testing of critical communication and information systems.
- Improve the restoration estimate and customer communication process.
- Collaborate with communities to arrange for the removal of dead ash trees outside of Detroit Edison's typical line clearance distance and easements

In addition to the above, Staff recommends that Detroit Edison should provide more detailed action plans with progress updates to Staff until the improvements have been implemented. Staff recommends that Detroit Edison should also work with the Department of Agriculture to develop a mutual program addressing ash trees.

The problems experienced with the phone system are unacceptable, and in addition to the testing of critical communication and information systems, Detroit Edison must ensure that the temporary fix allowing the phone system to operate at full rated capacity remain in place until the root cause of the system is identified and a permanent solution is implemented.

In addition to the improvement opportunities provided by Detroit Edison, Staff recommends that both Detroit Edison and Consumers Energy proactively make the following communications with their customers through annual billing inserts which are in addition to materials that are already posted on company websites. The first key area would be a storm outage guide, instructing customers what steps to take if they loose their power, and providing some emergency planning information to help customers prepare for extended outages that may happen as a result of severe storms. The second key area is surrounding the customer credit that is available to customers who do not have their power restored within the time specified in the MPSC Service Quality and Reliability Standards for Electric Distribution Systems.[25] Some customers were not aware that the credit was available, even

[24] http://www.crainsdetroit.com/article/20080811/SUB/808110358/storms-cost-utilities-48m-dte-consumers-earnings-take-2q-jolt.

[25] http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=46000701&Dpt=LG&RngHigh=.

though information is posted on the MPSC website, and on the utility websites. Staff recommends that the eligibility criteria regarding available customer credits for both extended outages and frequent repetitive outages, and the process to request such credits, be included as a separate billing insert that is mailed to all customers.

Staff recognized that there was a failure of Detroit Edison's phone system during storm system. This should not excuse Detroit Edison from providing the credit to customers that have attempted to notify the utility during the phone failure. Staff's recommendation is that customers who notify Detroit Edison that they attempted to call the utility when its phone system was out, be afforded the same consideration as customers who were successful in notifying the utility during the storm.

The customer credit that is currently available through the MPSC reliability standards is twenty five dollars. Several customers commented that twenty five dollars was not nearly enough to cover damages that they had incurred due to the outage. Staff does not believe that the intention of the twenty five dollar customer credit was ever meant to make customers whole, as would an insurance policy covering replacement costs, and should not be thought of as such.

Staff does believe that an informational campaign to improve customer awareness of the reliability rules, and the credits available should be undertaken. Any change to the amount of the customer credit for catastrophic conditions would require a change to the MPSC reliability rules, and Staff recommends that the Commission wait to undertake a rulemaking until the utilities have implemented AMI (automated meter infrastructure).

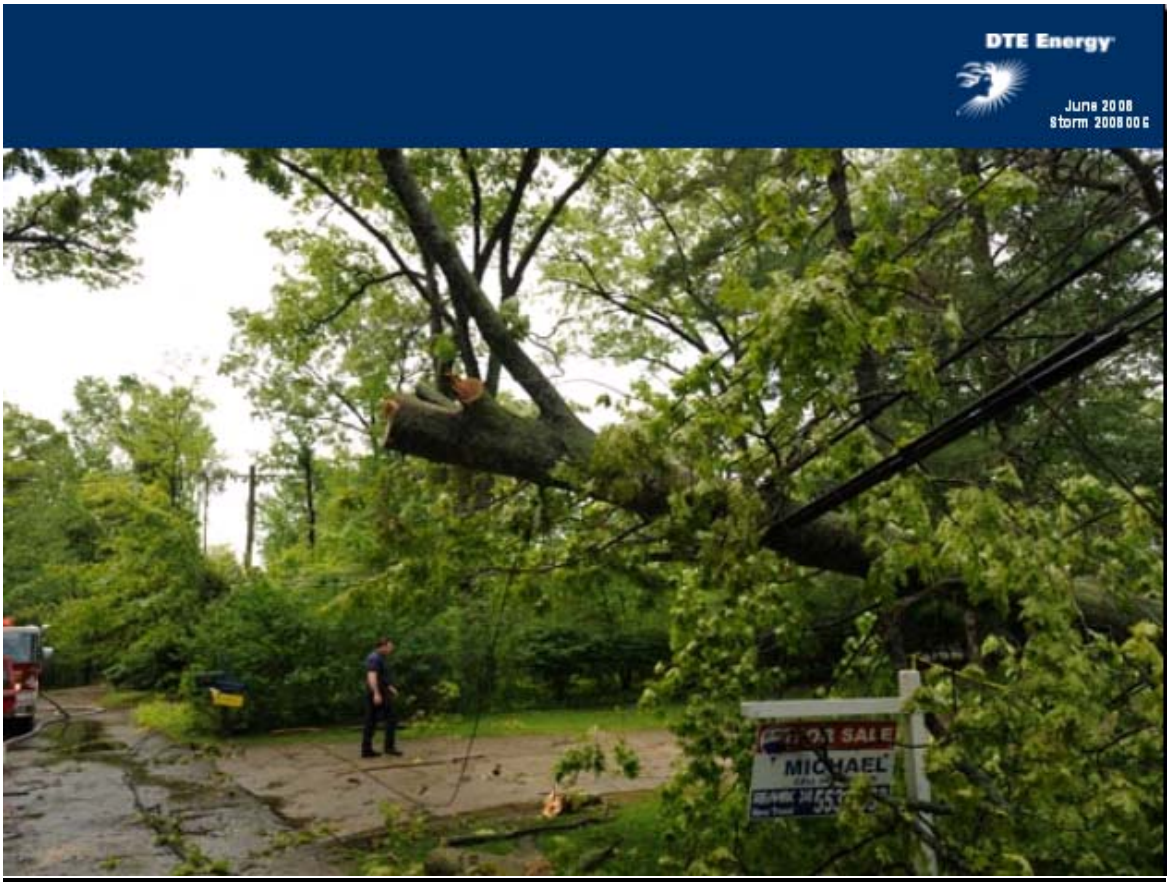
AMI is currently be investigated by both Detroit Edison and Consumers Energy. Staff recommends that the Commission direct the utilities to study, quantify, and report back to the Commission in this docket the operational benefits that could have been provided in this, or similar storm restoration efforts if AMI were in place. Although the phone system problems experienced by Detroit Edison were very unfortunate, AMI would have allowed the utility to pinpoint all of the customer outages even if there were phone issues. Precise knowledge of where the outages are would allow the utility to more efficiently plan and dispatch restoration crews, and could reduce or eliminate trouble after trouble. Knowledge of outage locations would also reduce the need for Detroit Edison's call-back program, where Edison representatives spend time on the phone questioning customers if there power had already been restored. AMI is a significant investment for the utilities and proposals are still being evaluated, but Staff encourages the utilities to consider the operational efficiencies that AMI will bring to Michigan customers.

APPENDIX A


DTE Energy
June 2008
Storm 2008006
10,517 Trees Trimmed


DTE Energy
June 2008
Storm 2008006


DTE Energy
June 2008
Storm 2008006
106 Miles of Wire Replaced


DTE Energy
June 2008
Storm 2008006
MICHAEL


DTE Energy
June 2008
Storm 2008006


Extensive pole damaged was caused
DTE Energy
June 2008
Storm 2008006
2,211 Cross Arms Replaced