This section provided by KCP&L

Facilities

To improve the restoration efforts, KCP&L rehabilitated an unused area in one of the company's facilities and installed an Emergency Operations Center ("EOC"). This improvement allows the company to direct restoration efforts from a central location. The EOC includes all of KCP&L's major computer systems and the capability to connect to regional city/county emergency operations centers. One benefit of KCP&L having a static EOC location helps local and regional EOCs communicate with KCP&L's EOC when needed.

Even with the advantages of a centrally located EOC, there are times when a presence is needed in the field. A mobile command center was developed and built. It provides on-site command and control in field locations. The center is fully equipped with a generator, computers, telephone and radio equipment. A pickup truck is required to move the mobile center from site to site. The mobile command center has been used by KCP&L as it has responded to other utility requests for help. Most notable were restoration efforts stemming from Hurricane Katrina.

The EOC played a major role in managing the December 2007 restoration effort. Having principals manage the storm restoration from the same area decreased decision-making time, improved communication among workgroups, enabled better resource utilization and simplified information flows to Corporate Communications to assist them in communicating with the public and other stakeholders.

Line Clearance

Environmental Consultants, Inc. ("ECI") manages KCP&L's vegetation management program, which is designed to maximize system efficiency and reliability. There are three areas of focus:

- Overall line clearance strategy.
- On-site program supervision, administration and record-keeping.
- Tree-trimming contractor scheduling and contract administration.

Part of the strategy is based on the following program cornerstones:

- Focus on reliability, not just trimming trees.
- Implement industry best practices.

- Bring in and maintain vendor competition.

Vendor incentives are aligned with KCP&L service objectives to better manage their performance and cost. If reliability is at or above target, trimming is on schedule, and the program costs under budget, savings are shared between KCP&L and ECI. The tree trimming contractors also have incentives for productivity.

KCP&L applies the industry's best practices to vegetation management in its efforts to maximize system reliability and control costs. The Company promotes reliability-based trimming and proactive contractor management. Reliability-based trimming means work is planned based on reliability risk assessment and importance of specific lines, as opposed to using the same cycle for all trees on all lines. Work is selected in advance of the tree trimming crew assignments to ensure the best return on resource utilization. Worst-performing circuits and laterals are incorporated into scheduling criteria. Scheduling priorities are based on proactive and preventative measures, rather than reactive maintenance.

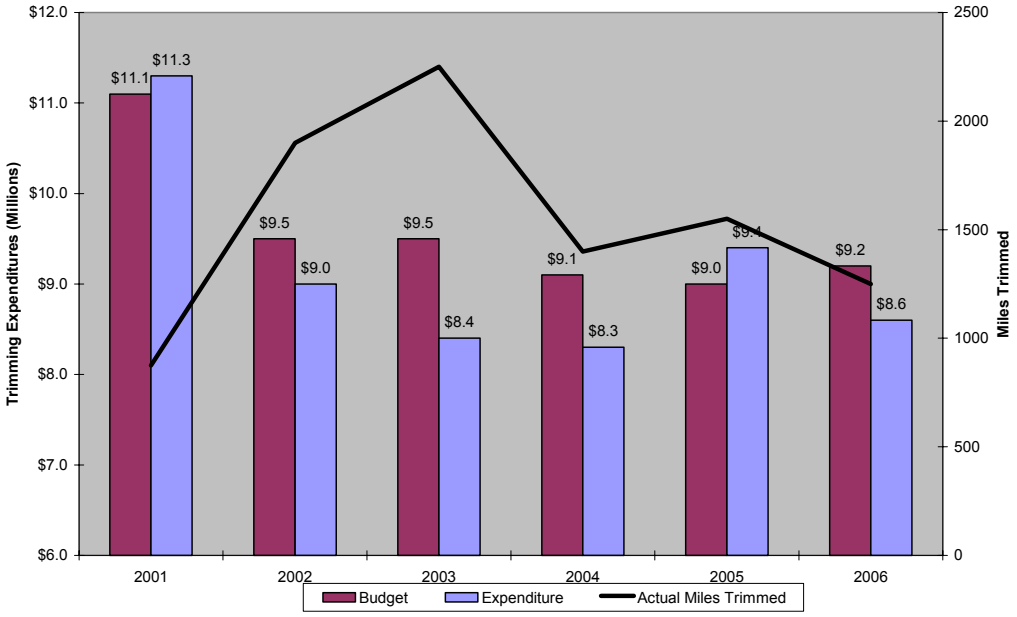
Proactive contractor management improves resource utilization and seeks to decrease costs. A number of contractors are used to ensure competition is in play to keep costs in check and performance high. Performance-based contracting procedures require regular evaluation of vendor performance. Work plans are based in reliability-based trimming logic and then assigned to the vendors. New technologies, such as mechanical trimming, are used to improve crew productivity.

Tree trimming schedules are designed around circuit risk and importance:

- Two year patrol and trim schedule for backbone.
- Four-year schedule for Metro backbone.
- Five-year schedule for Metro laterals and rural areas.
- Reduced trimming of services.

This section provided by KCP&L

Annual Tree-Related Customer Minutes Interrupted CMI



Notes:

1) Excludes Major Events
2) 2004 data impacted by unusual number of Class II storms (5) in July, contributing to ~ ½ of the Customer Minutes Interrupted for the year

Productivity has nearly doubled based on annual miles trimmed. Reliability due to tree-caused outages has improved nearly 10% over the most recent 4-year period. Customer surveys express over 90% of customers are satisfied with line clearance tree maintenance. The Vegetation Management program is within 3% of overall scheduled miles.

The management of the line clearance program played a major role in shortening customer service restoration times during the December 2007 storm. Also, crew down time was significantly reduced by getting tree trimmers out in front of the line crews.

System Enhancements/Upgrades

Upgrades and/or enhancements to several systems have occurred over the last few years. Upgrades to the Outage Management System, Outage Reporting System, Energy Management System and SERP have allowed KCP&L to take advantage of additional

automated functions. Dispatch uses the ARCOS system (defined below) to call out field personnel. It is considerably faster than conducting a manual call out. Use of the automated call out decreases the crews' report time and allows dispatch personnel to focus on assigning work.

Outage Management System

During the 2002 ice storm, the OMS system failed to handle the large amounts of data generated. After the storm of 2002, KCP&L invested $600,000 on new UNIX servers, disk arrays, the latest version of Centricity software to increase the capacity and stability of the system. Again, in 2006 the software was upgraded. The hardware and software are also scheduled to be updated again in 2009.

Outage Reporting System

The Outage Reporting System ("ORS") displays data in a graphical format to keep employees better informed of status and improve the quality of their decision making. The ORS, OMS and CIS+ systems are interfaced to provide each system with up-to-date information.

Energy Management System

The Energy Management System ("EMS") is also interfaced with the OMS to increase efficiency of system management and response speed:

- Data sharing between systems previously required manual intervention.
- System's interface allows automatic notification of an outage.
- System effectively initiates the restoration process before the customer is aware of the problem and reports it to Dispatch.

ARCOS

System enhancements have been completed to increase the speed of communication with KCP&L employees. When a situation requires a field personnel call out, ARCOS is activated. The system is Web-based and can be activated from any location with a computer connected to the Internet. Dispatching and Superintendents of

Dispatching and Field Operations have the password required to launch the system. ARCOS is capable of calling up to three different devices (cell phone, pager, home phone) for individual employees or "blasted" to all field personnel in the system within 80 seconds. When a call is answered, the employee hears a message identifying the call is from KCP&L and prompts are then presented (i.e. "Are you Pat Smith?"). Once the system gets the required number of personnel requested to come in to work, it shuts down.

SERP

The SERP system was modified to allow the Service Center Superintendents the ability to enter manpower and fleet information into the system and build rosters for in town crews or for sending crews out-of-town. Prior to this modification, names were collected and one person built the team into a spreadsheet. Now, once the Superintendents enter their crew information, the Superintendent leading the crews to the out-of-town assignment can print off the entire roster for his file and pass it along to the requesting utility. This system change has reduced the crew build time dramatically and allows the convoy to get on the road sooner.

All of the system enhancements made – OMS, ORS, EMS, ARCOS and SERP – played a major role in the December 2007 storm. Service restoration times were reduced because the systems allowed faster response times, better information flow and availability, and improved decision making.

Public Safety

The Wire-Down Team was created during the 2002 ice storm and proved to be highly effective. The December 2007 storm confirmed the effectiveness of the team. Sending teams to the field to investigate wire-down calls frees up line crews, frees up police and fire personnel and protects the general public from personal injury and property damage. This concept is an integral part of SERP and continues to be a major benefit in the safe restoration of services and resource utilization during KCP&L's restoration efforts.

This section provided by KCP&L

Material Sourcing and Distribution

Since 2002, several improvements were made to the sourcing and distribution of material processes and integrated into restoration plans:

- Material lists for primary, secondary and rural restoration efforts were created, reviewed and are part of the SERP manual.
- Storage boxes are now stocked with emergency material and staged around the service centers, ready for deployment. One box contains nothing but small coils of service wire. Having the wire pre-coiled saves crew time by not having to wait for the wire to be prepared.
- All key suppliers have reviewed their emergency response plans and required materials lists.
- One key supplier has their representative on KCP&L property 3 days a week during normal operations and 16 hours a day during restoration activity.
- Pole vendor has total distribution class pole inventory staged at F&M on consignment.
- Supervisors with material loaded into pickups drive around where crews are working, delivering splices, connectors, and required materials. This keeps the crews working on restoration efforts and from having to return to the warehouse for material.

These changes to material sourcing and distribution have had a major impact on restoration efforts and the December 2007 storm was no exception. Getting the material out to the field allowed KCP&L to significantly reduce crew downtime, thereby reducing customer outage time.

Call Center Enhancements

In the event of high call volume, calls to the Call Center can be directed to Twenty First Century ("TFCC"), a high call volume service that assists KCP&L during emergency situations. TFCC can handle over 190,000 ninety-second telephone calls an hour without a busy signal. The transfer of calls to TFCC is seamless.

These changes to the Customer Care Center's handling of customer telephone calls played a major role in the December 2007 storm. Customer calls were handled efficiently and effectively whether they were directed to KCP&L or TFCC.

Internet Enhancements

Services through the KCP&L Web site have been expanded to assist customers in reporting outages and getting information regarding the restoration effort. Through the Web site, KCP&L can broadcast important information and restoration updates to all customers. If someone wants to know where the crews are working, they can receive tailored outage information by geography via PowerWatch Map. The map displays an easy-to-use map of system status by city or county. The data is updated every 15 minutes and the system is available 24 hours a day, seven days a week, blue sky or not.

The KCP&L Web site also gives customers another channel through which they can report an outage. A "StormCenter" area has been established on the Web site if a customer wants to report an outage. Once an outage is reported, a trouble ticket is generated in the OMS, same as if the customer was talking to a Call Center representative. The customer can also verify KCP&L received their outage trouble ticket. These enhancements to the Web site had a major impact in communicating with our customers. The December 2007 storm saw over 95,000 visits (see page 39 for additional details). To put this number in perspective, during a normal 3-day period there are a little over 27,000 visits to the Web site. Both StormCenter and PowerWatch have been received very well by our customers.

Communications

Communicating with KCP&L employees and customers in a timely and accurate manner is a continually challenging effort. Numerous communication processes and tools improve the flow of information between employees to help speed restoration.

- Two-way pagers allow employees to keep each other informed about an emergency situation, restoration status, safety hazards, conference calls, and so forth.

- E-mail and voice mail updates from the KCP&L Vice President of Customer Operations, and other company leaders keep employees informed.
- ARCOS (see page 62)

A few changes in the way KCP&L communicates with its customers have improved the flow of information. A new department, Customer Relations, was established to improve communication with our most vulnerable customers that may need extra assistance during a major event. Communicating with customers and other stakeholders also saw changes.

Customer Relations Department

Customer Relations serves as a point of contact for at risk customers and/or the organizations that serve them. The department's objective during an extend outage is to provide proactive outreach to ascertain service status, give direct contact information, recap restoration efforts and help facilitate assistance when necessary. Outages of at risk customers are monitored and communication between parties is facilitated. Communication with external "helping organizations" and the MPSC is also provided. Customer Relations' targeted groups are:

- Medical customers.
- Gatekeeper – customers identified by Company employees that need assistance.
- Assistance agencies/Senior centers.
- Nursing homes.
- Hospice organizations.
- Referred elderly customers.

The Customer Relations Department has had a major impact to previous KCP&L restoration efforts. During the December 2007 storm, it had a moderate role by contacting the Red Cross and having three additional warming shelters opened. In the event the storm's duration was longer, this department would have had a major impact in keeping track of KCP&L's vulnerable customers and coordinating efforts with relief agencies.

This section provided by KCP&L

Community

Communicating with KCP&L Commercial and Industrial ("C&I") customers is accomplished with help from the Energy Solutions department. Tier 1 customers may register for outage notification through KCP&L's Web based AccountLink Advantage®. Energy Consultants contact Tier 1 customers before and during an outage to keep them informed of system status and provide restoration updates. C&I customers may select any or all of the following notification options: when an outage is detected, the estimated restoration time, when crews are dispatched, and/or when power is restored. Messages can be sent through different communication channels: pager, facsimile or e-mail.

During the December 2007 storm, all C&I customers with an outage were notified by KCP&L. Any that appeared on an outage list were called by KCP&L Energy Consultants. This feature had a minimal impact on the restoration efforts due to the short duration of the December 2007 storm. This feature was used in previous restoration situations and proved to be beneficial to both KCP&L and C&I customers.

This section provided by KCP&L

Year Added						
Capability	**2002 or Before**	**2003**	**2004**	**2005**	**2006**	**2007**
Planning and training improve employees' ability to make good decisions	▪ SERP refinements ▪ Wire-Down Team ▪ Material lists for Metro	▪ SERP refinements ▪ Material lists for Rural	▪ SERP refinements	▪ SERP refinements ▪ E-Learning modules developed	▪ SERP refinements ▪ Preparedness drills designed and facilitated by simulation experts ▪ E-Learning implemented ▪ Business Continuity plans created	▪ SERP refinements ▪ Preparedness drills designed and facilitated by simulation experts ▪ E-Learning expanded ▪ Pandemic plans created ▪ Crisis Management plan created
Tools, processes, and infrastructure improve the quality and flow of information internally	▪ Automated workflow and outage management	▪ Meter-level outage reporting and tracking ▪ Mobile coordination with MCC ▪ Additional capacity to handle large volumes of data	▪ Energy Management System/OMS integration ▪ Streamlined and graphical reporting	▪ Emergency Operations Center opened	▪ Central coordination performed at EOC ▪ OMS upgrade ▪ Mobile data implementation	▪ Mobile data field implementation
Tools and processes provide more timely, accurate information to our customers and the community	▪ Outline outage reporting ▪ Automated service restoration verification via phone ▪ Automated call system and unlimited ports ▪ Proactive updates to customers with specific needs		▪ Estimated customer restoration times entered by crew dispatchers ▪ Automated trouble ticket generation ▪ Online graphical outage reporting		▪ Phone system upgrade ▪ Customer Relations department formed ▪ AccountLink Advantage implemented	▪ Restoration Verification Application implemented ▪ CellNet data integration
Innovative line clearance program	▪ ECI contract executed	▪ Competitively bid line clearance work		▪ Joint bid with Public Service of New Mexico		
Construction and technology	▪ System built to Class B standards	▪ Key local infrastructure identified		▪ Downtown and Plaza network automation installed	▪ Rural automation begun	

Highlights of KCP&L's Improvements to "Major Event" Response and Restoration Plan

Consumer Complaints/Public Comments

Staff reviewed the Electronic Filing and Information System (EFIS) databases for consumer public comments and complaints to determine the extent of feedback from KCP&L customers regarding this storm. Seven (7) KCP&L customers filed public comments and none filed complaints. The number of comments per 1,000 customers was 0.06. The public comments were analyzed to determine which categories were addressed by the submitted comments. Of the seven (7) comments received, nine (9) categories were included. The following categories were not addressed in the comments: storm outage concern, infrastructure maintenance, repeat outages, repair quality, credits, bill amounts, burying power lines, medical registry, website, and concern with merger. The following table provides a breakdown of the categories that were addressed.

Positive Feedback	Storm Response	Tree Trimming	Tree Cleanup	Safety	Call Center	ERT	Customer Communications	Executive Management	Total
3	1	3	1	1	3	1	3	1	17

The Company stated that it placed a major focus on customer relations throughout the storm. In addition, the Company stated that its Customer Relations Department had a high concentration on their high priority and vulnerable customers.

Following the Ice Storm, the Staff contacted Company personnel that were unaware of accessing public comments filed in EFIS which were aimed at its Company.

Public comments provide the Company with valuable information from its customers of their opinion of the Company's performance during the storm restoration. Public comments might address the Company's performance before, during and following the outage; possible areas of improvement and Company practices and procedures that worked successfully during the storm restoration. Following a situation that customers might file public comments with the Commission, the Company should provide necessary follow-up with these customers, when appropriate.

Compliance with Past Recommendations

Staff issued a report following a severe ice storm that affected Missouri utilities in January and February 2002. The magnitude of the 2002 and 2007 storms that affected KCP&L service territory were significantly different. The 2002 storm resulted in approximately 305,000 customer interruptions in compared to approximately 90,653 customer interruptions in 2007 (numbers of customer interruptions are for entire KCP&L service territory, Missouri and Kansas). The 2002 report included conclusions and recommendations for each affected utility. The conclusions and recommendations included in that report for KCP&L are listed below.

Conclusions

KCP&L has a comprehensive restoration plan that outlines responsibilities and identifies individuals to implement restoration of electric service.

KCP&L recognized the peril in the forecasts of an ice storm and organized in anticipation of the ice. KCP&L was successful in getting commitment and mobilization of outside crews for tree trimmers and electrical crews. Because of the travel time most of the crews arrived Friday or Saturday, February 1st and 2nd. Over the course of the restoration, KCP&L had 2990 utility linemen, electrical contractors and tree-trimmers working to restore electric service.

KCP&L de-centralized the work to substations where supervisors had operational control. The crews assigned to the substation were responsible for all the circuits from the substation and worked these circuits until all service was restored. Assignment of the work and crew safety was the supervisor's responsibility at the substation. This approach was successful in keeping the crews productive and relieving the duties of the dispatch center.

Tree-trimming cycles were not on schedule, which provided more limbs and trees to collect ice and to interfere with electric lines. Trees off the trimmed right-of-way and trees along service lines contributed to the damage to electric facilities.

A productive means of communication for KCP&L customers and other interested parties was the website. Information on the affected areas and the crews assigned were of interest to customers. The number of customers without power was aggregated together system-wide in the KCP&L reports, but the geographic reference to the areas where crews were working and the crew assignment map were helpful.

Communication with city officials in the KCP&L service territory and having a representative present at the Kansas City EOC reflected the pro-active approach expressed by KCP&L. Because of city responsibilities to respond to police, fire and health emergencies, communication with the electric utility was important.

The 21st Century Interactive Voice Response system recognizes either the customer phone number or the account number. Links in the database to name and address would increase the opportunity to find a match and generate the work order automatically.

Recommendations

1. Maintain scheduled trim cycles for tree-trimming/vegetation management for both rural and urban areas to ensure safe and reliable service. Evaluate the results of these programs on a regular basis and make changes as necessary.

2. Contact city officials and agencies impacted by extended electric outages twice a year to update telephone and personnel changes.

3. Structure a curriculum that periodically informs and updates the medical-need customers and communicates the expectations of the program.

4. Pursue ways to provide positive feedback to customers that are routed to the Interactive Voice Response system for assurance that the reported outage has been received.

5. Enhance the Interactive Voice Response of 21st Century to provide more options for the computer database to match a customer and location to speed response during the high volume periods.

6. Evaluate the costs, benefits, and feasibility of enhancing the computer system in order to automate the workflow and work processes of its service orders.

Staff has reviewed the conclusions and recommendations from the 2002 report relative to KCP&L's performance during the December 2007 ice storm. The following information is noted relative to the individual recommendations.

1. As stated on pages 59 through 61 of this report, KCP&L has implemented reliability based trimming. The Vegetation Management program is within 3% of overall scheduled miles.

2. KCP&L updates their contact information twice per year. During this storm event, the city's EOC was only open for a short period of time due to limited impact on the city infrastructure. The December 10, 5:00 p.m. State Emergency Management Agency

(SEMA) Situation Report stated: "EOCs in Eastern Jackson County and Kansas City are Level One Alert. Coordination with Kansas City Power and Light is on-going." Later situation reports provided some additional general information about shelters, road conditions, and city facilities. No situation reports indicated any significant concerns relative to KCP&L restoration activities. The Company stated that it met with community constituents during the past year. The Staff interviewed city officials, county officials and agency heads that were both complimentary and non-complimentary. Therefore, the Staff believes that improvement can be made to address this recommendation. It would be advantageous to the Company and its constituents to have up-to-date personnel information in order to share information between the Company and its constituents during future major outages. It would also be advantageous to everyone to communicate throughout the year with necessary information, not just during major outages.

3. Medical needs customers are updated annually. At the time of the 2007 storm event, there were 44 medical needs customers in Missouri. KCP&L contacted these customers on Monday, December 10 and Tuesday, December 11 and provided a dedicated telephone number for their use, outage information, restoration information, and encouraged the customers to develop alternative plans in case of an outage at their location.

4. KCP&L utilized automated confirmation calls for customers who had reported their outage through the automated service. The call said something to the effect, "This is Kansas City Power & Light. We received your outage call. Crews are working to restore outages."

5. KCP&L has implemented hardware and software upgrades for their Outage Management System (OMS). The Outage Management System receives inputs from the Customer Care Center (call center-live person), 911 centers, automated phone services, website entries, and Cellnet meters. The OMS transfers information to their Outage Reporting System (ORS).

6. Computer system enhancements have been completed and future enhancements are being evaluated. Trouble Calls from all sources are collected in the OMS. Calls contain trouble codes describing the problem, condition, action needed and priority. This information is analyzed to determine probable source of problem and groups outages with a common source. The summary, supporting details and predicted priority are presented to the Dispatcher through the OMS. The Power Outage Application (POA) automatically generates trouble tickets directly through the OMS, often before the customer calls to report the outage.

Storm Comparison

Comparison of the data associated with the December 2007 ice storm (December storm) and the May 2008 wind storm (May storm) illustrates the variables associated with storm damage. These variables can include: number of customers affected, geographic distribution of customers affected, duration of outages, type of infrastructure damage, mutual assistance/contractor availability, call center volumes, and preparation time for the weather event (based on forecast information). Staff compared selected statistics from the two storm events, the December storm covered in the main body of this report and the May storm covered in Appendix C to this report.

The December storm resulted in 90,653 customer interruptions (54,558 in Missouri, 60.2%) and the May storm resulted in 49,019 customer interruptions (41,021 in Missouri, 83.7%). The peak number of Missouri customers interrupted in the December storm was approximately 20,000 while the peak number for the May storm was approximately 34,000. This illustrates the number of customers affected and the geographic distribution of the different types of storm events.

The December storm approximate normalized customer outage duration was 7.2 hours while the May storm was 10.3 hours. The graphs on pages 13 and C-7 illustrate this difference. The overall durations for all customer interruptions for the two storms were from the evening of Monday, December 10 until 9:38 p.m., Thursday, December 13 (approximately 72 hours) and from 1:00 a.m., Friday, May 2 until 8:00 p.m., Monday, May 5 (approximately 91 hours).

The type of infrastructure damage varied significantly between the two storms. The December storm had a high percentage of "Limb on Line" damage (42%) while the May storm had only 10% for this type damage. Conversely, the May storm had high percentages for "Broken, Faulted, Loose, Slack, Shorted" damage (24%) and "Wire Down" damage (39%) versus 3% and 18% respectively for these categories for the December storm. These percentages are based on customer interruptions due to the specific type of damage.

Immediate assistance from mutual assistance crews was limited in both storms due to damage also sustained in adjacent utility service areas. Contractor employees were utilized to

supplement the KCP&L work force. In the December storm approximately 185 contractors employees were used and in the May storm approximately 115 were used.

Total customer calls for the December storm were 58,271 and for the May storm were 28,526. Both of these totals were over three day periods.

Preparations for the December storm began on Friday, December 7 (over three days in advance of the storm arrival). The May storms were part of a weather system that existed between 5:00 p.m., Thursday, May 1 and 3:00 a.m., Friday, May 2. The specific warnings for the May storms (that resulted in the significant customer interruptions) were a few hours in advance of the storms.

While KCP&L's SERP can be utilized for storm events or other widespread customer interruptions, the type and magnitude of the damage can vary considerably. In general, winter storms are more predictable, cover a larger geographic area, and damage occurs over a longer time period. Conversely, summer wind storms/tornadoes typically are less predictable, affect more isolated geographic areas, and the damage occurs relatively quickly.

Conclusions

KCP&L has a comprehensive Storm Evaluation and Response Plan (SERP) that outlines responsibilities and identifies individuals designated to implement various aspects of service restoration.

KCP&L recognized the potential impact of the December storm several days in advance and began mobilization of their work force and contractor personnel. Because of earlier ice storms in other areas of the midwestern states, availability of contractors and mutual assistance support was limited. KCP&L was able to perform restoration activities with their internal workforce and contractor workforce that were already working on KCP&L premises.

KCP&L was able to utilize their SERP to effectively direct the overall restoration efforts from their Emergency Operations Center and utilize management expertise at local service centers to provide direct crew oversight.

Since KCP&L did not utilize mutual assistance crews or significant numbers of additional contractor crews, there was minimal need for logistical support (hotels, meals, etc.) normally associated with those groups. Mutual assistance crews called by KCP&L were diverted to other utilities prior to their arrival in the Kansas City area.

KCP&L was within 3% of their overall vegetation management schedule. It is unlikely that this was a significant contributor to the ice storm damage.

Relative to previous significant interruption events, communication with customers, local officials, community support agencies, and news media was improved. Initial communications through the media and other mechanisms began two to three days before the actual event. Based on the impact of the ice storm, local emergency operations officials (city and county) did not fully mobilize.

Staff has noted some inconsistencies relative to PowerWatch website statistics and simultaneous verbal reporting from KCP&L employees.

KCP&L has identified some new and ongoing improvement opportunities.

KCP&L's SERP contains a section titled "Storm Report" (page E14-1 of the SERP). This section provides direction on preparation of storm reports following all major storms. It provides timelines for report preparation and general report content.

Recommendations

1. Recommendation: KCP&L should review recent storm reports and evaluations completed for other Missouri utilities (including the reports filed concurrent with this report). Any items noted in those reports that would be applicable to KCP&L should be considered for implementation.

2. Recommendation: KCP&L should consider separating the data displayed on their PowerWatch website and other sources to show Missouri and Kansas service areas as discrete data. It is understood that some circuits cross state boundaries and this may be difficult to accomplish 100% of the time. Additionally, KCP&L should verify consistency of PowerWatch website statistics with other internal company databases.

3. Recommendation: KCP&L should evaluate their communications with state government agencies during significant customer interruption events. Those agencies would include: Missouri Public Service Commission, State Emergency Management Agency, Department of Health and Senior Services, Department of Social Services, and Department of Transportation. This communication could be coordinated through State Emergency Management Agency teleconferences when the State Emergency Operations Center is activated.

4. Recommendation: KCP&L, the other investor-owned Missouri electric utilities, and Staff should plan and schedule a storm restoration workshop to discuss this report and the concurrent reports for the other utilities. One agenda item for that workshop should be discussion of a consistent methodology for development of future storm reports.

5. Recommendation: Continue or begin working on self-identified improvement opportunities such as:

- ***Direct Wire procedure improvements***
- ***Public Official communication enhancements***
- ***SERP Initial Evaluator/Scout training***

- ***PowerWatch Map enhancements***
- ***Business Continuity Plan testing***
- ***Pandemic Plan development***
- ***Computer system hardware/software upgrades***

6. Recommendation: Consider revising their SERP section on storm reports (page E14-1 of the SERP) to include a determination of lessons learned, improvement opportunities, corrective actions, or other items developed, based on the experience obtained in the storm recovery effort that is the basis of the report.

7. Recommendation: Evaluate the use of at-home Customer Care Center representatives. The Company should determine the strengths, weaknesses and any cost benefits of this program.

8. Recommendation: Evaluate the Company's ability to segregate by state the outage calls received in the CCC. If feasible and cost-effective, implement this procedure.

9. Recommendation: Evaluate the information provided to the CCC representatives during the storms that transfers to the customers. Determine what information is necessary for the customers and what information the Company is able to provide. Provide the customer with a sufficient amount of information that enables them to make crucial decisions.

10. Recommendation: Evaluate opportunities to implement the usage of alternative telephone numbers of customers without service to improve the Company's confirmation of customers' outage calls. If feasible and cost-effective, ensure that secondary telephone numbers are obtained and used during restoration periods.

11. Recommendation: Evaluate the Company's outbound calling potential during future major outages.

12. Recommendation: Evaluate the CCC's practices and procedures and determine if, during future major outages, the Company can implement more efficient and effective processes. The Company should address staffing issues, communication issues with customers, and others issues it deems appropriate.

13. Recommendation: Evaluate the Company's allocation of employees during future major outages.

14. Recommendation: Ensure that the CCC maintains an adequate number of CCC representatives at all times. Develop contingency plans to address demands associated with major outages.

15. Recommendation: Evaluate the Company's ability to provide access to city and county officials to its Web site with information specific to their needs that would benefit these individuals in their decision-making process. Meet with the Company's constituents to determine the desired information and, if feasible and cost-effective, ensure that this agreed upon information is available to these individuals.

16. Recommendation: Review the Company's public comments following situations when customers might file public comments in the MoPSC's EFIS to determine areas of customer concerns, customer service quality improvements and areas of success. Address the comment issues and provide necessary follow-up with such customers, when appropriate.

17. Recommendation: Include the Consumer Services Department in all communications with the Commission during major outages.

18. Recommendation: Contact city officials, county officials and agencies twice a year to update telephone and personnel information. Coordinate meetings periodically with these individuals to communicate pertinent Company information.

19. Recommendation: Delegate employee(s) to participate in the SEMA meetings.

20. Recommendation: Designate a Company employee and a back-up employee that Staff working with SEMA will have access to 24/7 during an emergency situation involving KCP&L. These employees should be able to respond to Staff's request at the time the Staff calls them.

21. Recommendation: Develop a data base of necessary information to enhance the Company's relationship with the Red Cross and other agencies.

22. Recommendation: Evaluate creative and enhanced methods of providing information to the Company's customers during major outages.

23. ***Recommendation: Revise vegetation management procedures to incorporate the Commission's Electrical Corporation Vegetation Management Standards and Reporting Requirements, 4 CSR 240-23.030, which will become effective on June 30, 2008.***

24. Recommendation: Revise operation standards to incorporate the Commission's Electrical Corporation Infrastructure Standards, 4 CSR 240-23.020, which will become effective on June 30, 2008.

This section provided by KCP&L

Appendix A

Commissioner Questions

1. Analysis of the age, siting, durability and quality of the utility's infrastructure, including the placement of distribution lines in light of the ice storm outages of 2007.

   KCP&L has not conducted this type of analysis.

2. A comprehensive compliance review of Commission Orders stemming from prior storms and outages applicable to the utility.

   KCP&L is compliant with all Commission Orders stemming from prior storms and outages.

3. An analysis of all assistance requested or offered and whether the utility accepted or denied the offers of assistance by other entities.

   KCP&L is one of the founding members of the Midwest Mutual Assistance Group ("MMAG"). The MMAG acts as a conduit to make/receive assistance requests to/from neighboring utilities. The MMAG currently has over 30 member utilities. The Midwest group is associated with several other Regional Mutual Assistance Groups ("RMAG"), covering all but one state. .

   During a restoration event, conference calls are arranged by the requesting utility. Each call is structured and follows an established protocol (roll call, weather conditions, future conditions, "on hold" or can supply help, what help can each utility spare, arrange next call, and so forth.).

   For its 2007 restoration effort, KCP&L made the decision to use internal crews and contractors currently on site. In the event the storm worsened, help through Mutual Assistance was researched, but the entire available workforce close to Kansas City was requested by, and directed to, Oklahoma utilities. After KCP&L's restoration effort was complete, crews were sent to Westar and Aquila to assist in their restoration efforts. Their requests came through the MMAG.

4. An analysis of the Call Center operations during the storm and any observations about customer service issues.

   Customers who called into the Customer Care Center ("Call Center") and spoke to a Call Center representative received more accurate information about their service restoration. Representatives had access to the OMS, giving them up-to-date information about restoration efforts, including crew dispatching.

   Automated telephone systems confirmed service restoration and quickly identified problems on the customer side of the meter. The Automated Meter Reading ("AMR") system from CellNet allowed pings (sends a signal to the meter to check for connectivity) to check for service in response to an outage report and called the customer back with the result of the ping. Customers then had the option to be transferred to a Call Center representative if they have additional questions or concerns.

   In the event of high call volume, calls to the Call Center were directed to Twenty First Century ("TFCC"), a high call volume service that assisted KCP&L during ice storm. TFCC can handle over 190,000 ninety-second telephone calls an hour without a busy signal. The transfer of calls to TFCC is seamless and customers that reached this service were not aware they were speaking to a TFCC representative.

   These changes to the Customer Care Center's handling of customer telephone calls played a major role in the December 2007 storm. Customer calls were handled efficiently and effectively whether they were directed to KCP&L or TFCC.

5. An analysis of the utility's current tree trimming schedule and input on whether there is a need to amend the current program or consider alternative programs suggested through other Commission cases.

   KCP&L's vegetation management program is aligned with the recently adopted Electrical Corporation Vegetation Management Standards and Reporting

Requirements, 4 CSR 240-23.030. KCP&L's vegetation management program is designed to maximize system efficiency and reliability, focuses on three areas:

- *Overall line clearance strategy.*
- *On-site program supervision, administration and record-keeping.*
- *Tree-trimming contractor scheduling and contract administration.*

Part of the strategy is based on the following program cornerstones:

- *Focus on reliability, not just trimming trees.*
- *Implement industry best practices.*
- *Bring in and maintain vendor competition.*

KCP&L applies the industry's best practices to vegetation management in its efforts to maximize system reliability and control costs. The Company promotes reliability-based trimming and proactive contractor management. Reliability-based trimming means work is planned based on reliability risk assessment and importance of specific lines, as opposed to using the same cycle for all trees on all lines. Work is selected in advance of the tree trimming crew assignments to ensure the best return on resource utilization. Worst-performing circuits and laterals are incorporated into scheduling criteria.

Scheduling priorities are based on proactive and preventative measures, rather than reactive maintenance. Work plans are based in reliability-based trimming logic. New technologies, such as mechanical trimming, are used to improve crew productivity.

Tree trimming schedules are designed around circuit risk and importance:

- *Two year patrol and trim schedule for backbone.*
- *Four-year schedule for Metro backbone.*
- *Five-year schedule for Metro laterals and rural areas.*
- *Reduced trimming of services.*

6. An evaluation of the communication, cooperation and assistance between the affected utilities, citizens and city, county and state officials.

On December 10th, the day before the ice storm's arrival, the Corporate Communications Department worked with Governmental Affairs to implement a

proactive communications plan with their constituencies. State and local elected officials as well as government employees responsible for public safety and infrastructure were contacted either by telephone or e-mail. The purpose of the communication was threefold:

- *let officials know that a storm was coming that would likely cause electrical outages;*
- *inquire how they would like to receive updates on the status of KCP&L's system; and,*
- *ensure the governmental stakeholders had all the necessary contact information for the Governmental Affairs representative handling their particular jurisdiction.*

As the storm matured and outages developed, the Governmental Affairs department e-mailed updates every 3-4 hours to the governmental stakeholders on the original contact list. Additionally, Community Affairs and the Economic Development departments e-mailed the same updates to their contact lists. Many stakeholders expressed, "Thanks" and were appreciative for the up-to-date information.

In the event the outage period extended over a greater time period, KCP&L was ready to begin a conference call update system for elected officials. This was the first time a formal process was in place to update these stakeholders and it proved to be very effective.

Governmental Affairs also received numerous compliments for their communication efforts. The feedback they received confirmed the information provided was timely and the appropriate amount. The communication plan is now incorporated as KCP&L's standard operating procedure for future major events.

7. If any of the utility's service area lost electrical service for a prolonged amount of time, provide an analysis of what caused the prolonged outage.

This section provided by KCP&L

System-wide, KCP&L experienced 90,653 customer outages, 54,558 of those in Missouri, representing 60.2% of the total customer outages. Total system-wide restoration time, including the Missouri customers, was approximately 60 hours. Considering the magnitude of the ice storm, electrical service was not for a prolonged period.

8. An assessment of the coordination of efforts to ensure that critical operations facilities such as hospitals, residential care facilities, police and fire department buildings had temporary electric needs satisfied until service from the grid could be restored.

Customers that KCP&L identified as "sensitive" or "critical", i.e. hospitals, police, fire, etc. were tracked in the CIS+ system. KCP&L's restoration priorities (SERP Manual, page B5–6) show this class of customer as a second priority when restoration is needed:

- ***Second Priority***

  Restoration of service to sensitive ***public service facilities*** *such as hospitals, city halls, county court houses, fire alarm system headquarters, water pumping stations, sewer lift stations, fire stations, police stations, air traffic control centers and other sensitive loads*

When new customers are identified as a sensitive load, they are flagged in the CIS+ system. Existing customers in CIS+ have been reviewed and flagged. Twice a year a report is produced automatically from CIS+ and reviewed. A separate file is kept on each sensitive load customer that includes customer information and a location map. Some of the customers – pumping stations, for example, are difficult to locate. Annually, a letter is sent to the sensitive load customers verifying their contact information – name, address, phone, etc. The Sensitive Load customers have a major impact during any restoration effort.

During the December 2007 event, the Energy Consultants contacted sensitive load customers if they appeared on outage reports periodically generated during the ice storm.

This section provided by KCP&L

9. An assessment of the interdependence among all PSC certificated utilities as well as with utilities not certificated by the PSC in the affected area.

   KCP&L has not conducted this type of assessment.

10. An analysis that includes a comparison of utility performance with other utilities that had significant outages during the same time period.

    KCP&L has not conducted this type of analysis.

11. If damage was caused by vegetation, a detailed overview of the type and extent of damage caused by various scenarios including whether the vegetation was located in the easement or right of way, whether the vegetation fell from outside the right of way, whether the vegetation was diseased or particularly weak, whether the vegetation fell vertically from above the electrical conductors and whether the vegetation had been appropriately addressed prior to the storm in accordance with the utility's vegetation management plan. Further, what percentage of the damage would have been prevented by the utility strictly adhering to its vegetation plan? What percentage of the damage would have been prevented by the utility if strictly adhering to the vegetation management plan proposal attached to this Opinion?

    Please refer to KCP&L's responses to Request 5. {Staff note: Referenced information is contained in the KCP&L response to Question 5 in this Appendix.}

12. If the damage was caused by infrastructure failure aside from vegetation contact, identify more detailed reasons how and why the infrastructure failed, i.e., age, design, etc., and what can be done to strengthen the infrastructure.

    Please refer to KCP&L's document 2007-Dec 10-13 Ice Storm MPSC Report, page 5, Section IV, "System Damage." {Staff note: Referenced information is contained on pages 12 and13 of the main body of this report.}

13. An analysis of the economic impact on customers who experienced a disruption of power during the ice storms.

    KCP&L has not conducted this type of analysis.

14. Any and all recommendations to improve utility response to weather related and day to day electric outages in the future.

    Direct Wire Procedures

    KCP&L's policy is to cut meters straight through only if the customer's meter can or weatherhead is damaged beyond immediate repair by the crew but the service entry cable is in a safe and operable condition. Cutting a meter "straight through" means wiring the meter can so the building has power but no meter to register the usage. When this situation occurs in a storm, the service address is recorded and sent to Distribution System Operations ("DSO"). The DSO personnel pass the address on to the Correspondence Desk in the Customer Care Center.

    The Correspondence Desk then writes the customer a letter outlining what needs to be done: have the situation repaired by a qualified electrician, have a city inspection completed and get a permit issued on the repair within 10 days. After 10 days, a KCP&L service planner goes to the address and inspects the service entrance. If the repairs and the paperwork are complete (city inspection and permit), then the service planner orders the meter re-set. If after 10 days the work is not complete, the service planner hangs a tag on the service instructing the customer they have 10 additional days to complete the work.

    If the work is completed in less than 10 days, the customer is provided a number to call and the service planner will return and inspect the situation. If after 20 days the work is not completed, the service planner orders the service disconnected. The customer must then contact KCP&L and follow the previously outlined process to have their service restored. The December 2007 ice storm resulted in 20 Missouri wire directs.

    One of the challenges in this process is recording the wire direct service address in the field and reporting it to the Correspondence Desk in the Customer Care

Center. KCP&L recognizes a more streamlined approach needs to be implemented to capture the service information and is working to improve that process. Revenue Protection, the department responsible for metering, in conjunction with the Emergency Response team, is working to simplify this process.

Public Official Communication

On December 10th, the day before the ice storm's arrival, the Corporate Communications Department worked with Governmental Affairs to implement a proactive communications plan with their constituencies. State and local elected officials as well as government employees responsible for public safety and infrastructure were contacted either by telephone or e-mail. The purpose of the communication was threefold:

1. Let officials know that a storm was coming that would likely cause electrical outages;

2. Inquire how they would like to receive updates on the status of KCP&L's system; and,

3. Ensure the governmental stakeholders had all the necessary contact information for the Governmental Affairs representative handling their particular jurisdiction.

As the storm matured and outages developed, the Governmental Affairs department e-mailed updates every 3-4 hours to the governmental stakeholders on the original contact list. Additionally, Community Affairs and the Economic Development departments e-mailed the same updates to their contact lists. Many stakeholders expressed, "Thanks" and were appreciative for the up-to-date information.

In the event the outage period extended over a greater time period, KCP&L was ready to begin a conference call update system for elected officials. This was the first time a formal process was in place to update these stakeholders and it proved to be very effective.

Governmental Affairs also received numerous compliments for their communication efforts. The feedback they received confirmed the information provided was timely and the appropriate amount. The communication plan is now incorporated as KCP&L's standard operating procedure for future major events.

Storm Evaluation and Restoration Plan (SERP)

The Initial Evaluators are employees trained to assess system damage. They were called and asked to report between 6:00 AM and 6:30 AM to their designated service centers for duty on Tuesday, December 11th. One of the features of SERP is the flexibility built into the plan. The Initial Evaluators were not initially used based on the nature of the damage seen by crews already in the field and what the Outage Management System ("OMS") was showing. Instead, the Initial Evaluators were used to visually inspect laterals.

Having the laterals checked before the crews arrived prevented crews from possibly arriving at a location and finding the lights on. Normally Scouts, who have more experience with and knowledge of the distribution system, would and should perform this duty. They are trained and have the background for this kind of work. A majority of the Initial Evaluators are also trained as Scouts. Regardless, patrolling the laterals early in the storm was shown to reduce crew down time and shorten the service restoration time. This additional duty will be added to the Scout activity role in the SERP system. It will also be incorporated in future Scout training.

PowerWatch Map

The PowerWatch Map is located within the Storm Center and available on KCP&L's home page (www.KCP&L.com). PowerWatch Users may select a specific city or county for outage details. Also, the maps contain real-time outage and restoration information. The maps are updated every 15 minutes so users can

check status 24 hours a day, seven days a week. Changes were made to the map to clarify the data presented on the map.

An additional change being investigated stems from the February 8, 2007, meeting with the MPSC. The Commission is required to report total outage numbers for Missouri to the State Emergency Management Association ("SEMA"). The map currently shows area numbers but not state-wide totals. Although the data is available for this change—the issue is: What is the best way to present the data?

Missouri Public Service Commission

POST OFFICE BOX 360
JEFFERSON CITY MISSOURI 65102
573-751-3234
573-751-1847 (Fax Number)
http://www.psc.mo.gov

January 8, 2008

Mr. Tim Rush
Kansas City Power & Light Company
P.O. Box 418679
1201 Walnut
Kansas City, MO 64141

Dear Mr. Rush:

The Commission recently opened cases and issued orders directing Staff to investigate the effectiveness of utilities' storm preparation and power restoration efforts for the December 2007 Ice Storms and report its findings and recommendations to the Commission (Case Numbers EO-2008-0215, EO-2008-0218, EO-2008-0219, and EO-2008-0220 for The Empire District Electric Company, Union Electric Company d/b/a AmerenUE, Kansas City Power & Light Company, and Aquila, Inc., respectively). The orders direct Staff to file an initial report regarding the results of its investigation no later than April 3, 2008. Staff anticipates filing an initial report by the date specified followed by additional reports as necessary at a later date. Staff will also consider scheduling a roundtable discussion (or similar forum) to review the results of these reports and analysis on a state-wide basis.

Since all investor-owned utilities in Missouri were affected, Staff is requesting the following information from each of the individual utilities by the dates listed.

A. Description of the event, including statistics related to number of customer outages, duration of outages, infrastructure affected, call center performance data that includes metrics considered by the utility to be most critical during the outage, use of internal and third parties to provide personnel and facilities, and any other relevant information. *Submit to Staff by January 25, 2008.*

B. Description of remedial actions taken by the utility to recover from the event, including resources utilized (manpower, material, financial expenditures, etc.), outage tracking, crew dispatching, restoration prioritization, customer communications, public official communications, special circumstances encountered, and any other relevant information. *Submit to Staff by February 15, 2008.*

C. Description of actions taken (since the December 2007 storms) and planned actions to be taken by the utility to prevent or mitigate the effects of future events such as the December 2007 ice storms, including policy/procedure modifications, communications enhancements, vegetation management, reliability monitoring, infrastructure modifications, and any other relevant information. This item should include a review of any previous corrective actions (due to similar events) taken prior to December 2007 and an analysis of the success of those actions relative to this event. *Submit to Staff by February 29, 2008.*

D. A complete copy of all procedures, policies, guidelines, plans, or other documents that existed prior to December 1, 2007, that were utilized during the December 2007 ice storm events, specifically

relating to Items A and B above. If the Company had a consolidated document such as a "Storm Restoration Plan", please provide it. *Submit to Staff by January 18, 2008.*

E. A complete copy of any revisions made since the storm, to any of the documents listed in item D. *Submit to Staff by January 18, 2008.*

F. A copy of all reports and other documentation provided to Company management regarding the Company's operations immediately prior to and during the storm restoration activities. *Submit to Staff by January 25, 2008.*

G. Copies of all documentation defining the Company's methodology and data collection process to generate statistics (e.g. customer outages, costs, etc.) related to the impact of the storm on the Company's operations and financial conditions. *Submit to Staff by February 15, 2008.*

Staff has designated storm investigation coordinators for each of the utilities. Please feel free to contact the appropriate person with any questions or comments.

Staff Lead	Lena Mantle	573-751-7520	lena.mantle@psc.mo.gov
Empire	Dan Beck	573-751-7522	dan.beck@psc.mo.gov
AmerenUE	Debbie Bernsen	573-751-7440	debbie.bernsen@psc.mo.gov
KCPL	Mike Taylor	573-526-5880	michael.taylor@psc.mo.gov
Aquila	Lisa Kremer	573-751-7441	lisa.kremer@psc.mo.gov

An outline of the proposed topics and activities that Staff is proposing to be utilized is attached for your information. Please let us know if you have any suggestions for additional topics or activities.

If you have any questions regarding this information, or can't meet the timelines listed, please provide a written explanation why the timeline can't be met and when the information will be available for Staff review. You may contact Lena Mantle at 573-751- 7520 or me at 573-751-7435.

Sincerely,

Wess Henderson
Executive Director

Attachment

cc: Blane Baker
Bob Berlin
Nathan Williams
James Swearengen
Renee Parsons
William Riggins
Thomas Byrne
Natelle Dietrich
Bob Schallenberg
Lena Mantle
Dan Beck
Lisa Kremer
Debbie Bernsen
Mike Taylor
Warren Wood

This section provided by KCP&L

Appendix C

Kansas City Power & Light Company
May 2008
Wind/Tornado Event

Report for

Missouri Public Service Commission

May 30, 2008

INDEX

CHAPTER TITLE **PAGE**

This section provided by KCP&L

Introduction

This report is submitted to the Missouri Public Service Commission ("MPSC") in response to Staff's May 6, 2008 e-mail request to Kansas City Power & Light Company. This report describes Kansas City Power & Light Company's ("KCP&L") response to the Class III wind and tornado event that occurred May 2 - May 4, 2008.

At approximately 1 A.M. on Friday, May 2, 2008, KCP&L's service territory experienced high winds and tornadoes resulting in substantial, yet localized, system damage. KCP&L's Northland Service Center territory received the majority of the damage from the storm. System-wide, KCP&L experienced 49,019 customer outages, 41,021 of those in Missouri, representing 83.7% of the total customer outages. Total system-wide restoration time, including the Missouri customers, ended at 8 P.M. on Monday, May 5th.

The focus of this report is on the incidents that occurred in Missouri.

List of Communities Affected in Missouri

The following is an alphabetical listing of the counties and the cities affected by the storm:

Clay County

Claycomo	Gladstone	Kansas City
North Kansas City	Oakview	

Jackson County

Grandview	Kansas City	Raytown
Sugar Creek		

Platte County

Kansas City	Parkville	Platte Woods
Riverside	Weatherby Lake	

Carroll

Tina

This section provided by KCP&L

Chariton

Triplett

Lafayette

Waverly

Number of Customers Affected

At the peak of the incident, approximately 34,347 Missouri customers were without power. Overall, 41,021 Missouri customer interruptions resulted from the storm. The breakdown of individual **customer interruptions** by facility classes and damage types are:

Facility	Customer Interruptions	% of Customer Interruptions to Total
Feeder	23,084	56%
Lateral	17,241	42%
Secondary and Service	696	2%
Total	**41,021**	**100%**

Type of Damage	Customer Interruptions	% of Customer Interruptions to Total
Blown Fuse	2,157	5%
Broken, Faulted, Loose, Slack, Shorted	9,772	24%
Limb on line	4,238	10%
Wire Down	15,991	39%
All Other	8,863	22%
Total	**41,021**	**100%**

This section provided by KCP&L

System Damage

There were a total of 532 system outages as a result of the storm. The breakdown of **system outages** by facility classes and damage types are:

Facility Level	Number of Outages	% of Outage Counts to Total
Feeder	42	8%
Lateral	309	58%
Secondary & Service	181	34%
Total	**532**	**100%**

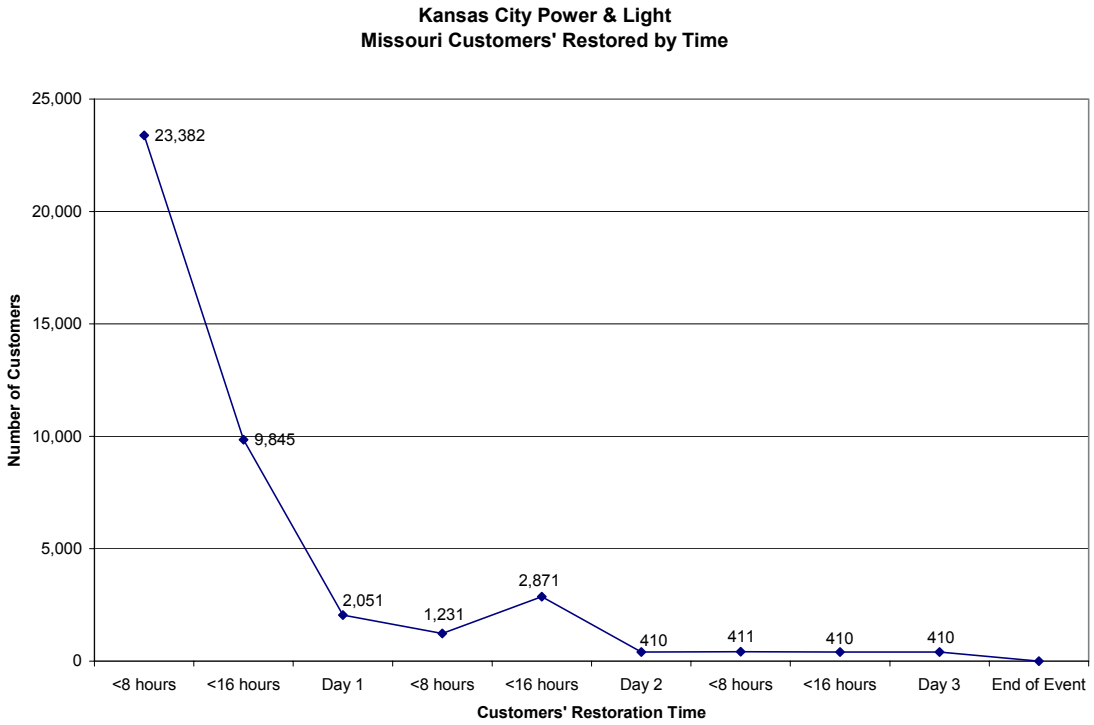
Type of Damage	Number of Outages	% of Outage Counts to Total
Blown Fuse	43	8%
Broken, Faulted, Loose, Slack, Shorted	94	18%
Limb on line	20	4%
Wire Down	315	59%
All Other	60	11%
Total	**532**	**100%**

Extent of Interruptions

KCP&L began receiving customer outage reports in the early morning hours of Friday, May 2, 2008. At the height of the storm on May 2nd, KCP&L's Missouri customers without power peaked at approximately 34,347 customers. All Missouri customers were restored by 8 P.M. on Monday, May 5, 2008.

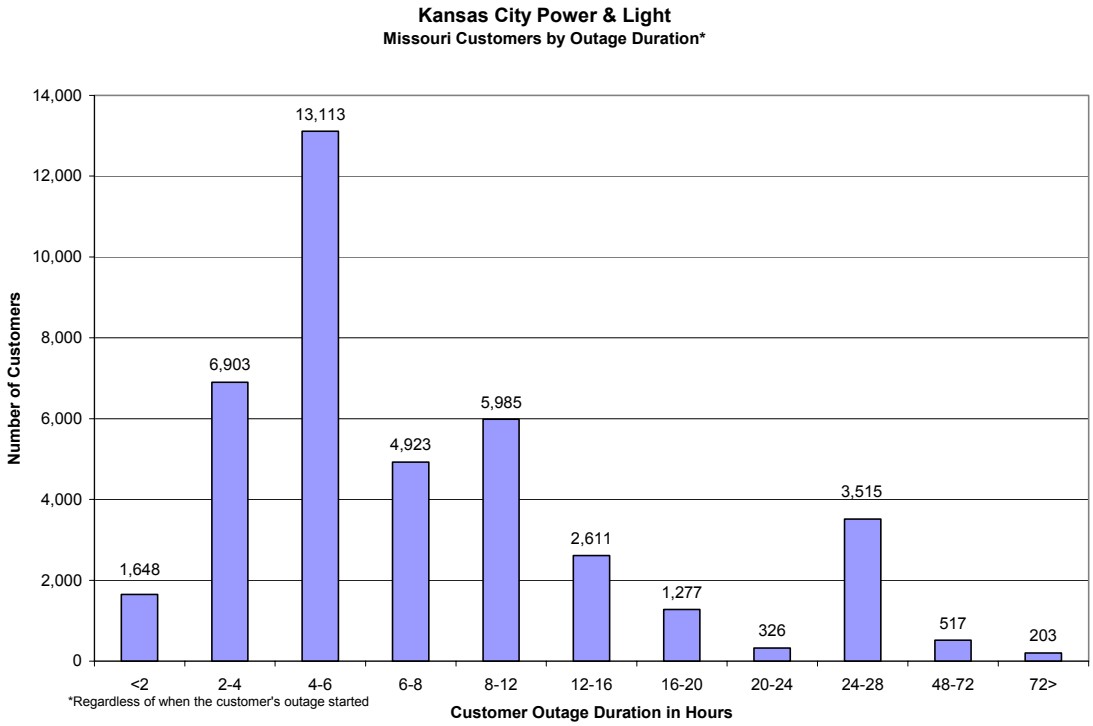
The following chart shows the number of customers restored over the event's duration. In the first 24 hours after the storm, 35,278 of 41,021 customer interruptions, or 86%, were restored. After Day 2, the work was hampered because of extensive tree and system damage, extending restoration time for isolated customers.

This section provided by KCP&L



The chart below represents the number of Missouri customers and the length of their outage duration. For example, there were 1,648 Missouri customers who experienced an outage of less than 2 hours.

This section provided by KCP&L



SERP Process Utilization

The number of affected customers was less than 50,000 so a full-scale Storm Evaluation and Restoration Plan ("SERP") rollout was not initiated. However, parts of SERP were utilized in the hardest hit area of our service territory, the Northland Service Center. The four parts of SERP utilized in Missouri for this event were: Initial Evaluation; Reception, Staging and Integration; Third Party Assistance; and, the Wires Down Team.

a) Initial Evaluation. At approximately 1:30 A.M. on Friday, May 2, 2008, the decision was made to call out the Initial Evaluators at Northland. At approximately 7 A.M., the Initial Evaluators were tasked to conduct an initial assessment of the system. They were given maps and specific routes to drive to survey the damage. Each route is designed so the route survey can be completed within 2 hours. The teams completed their surveys and returned to Northland with their reports. The damage survey information was fed into a computer program to model the severity and location of the damage. The modeling software also provided an estimate of the number of tree crews needed.

After completion of the initial evaluation, the same teams returned to the field to patrol laterals. This group patrolled 309 laterals, representing 58% of the total outages.

b) Third Party Assistance

i) RS&I. Reception, Staging and Integration contacted Aquila, Capital, CLS and PAR Electric to secure crews for this restoration event. In addition, RS&I arranged with two hotels to house the crews on Friday and Saturday evenings. Here is a breakdown of the contract crews on-site:

Company	Date						Type
	5/2/08		5/3/08		5/4/08		
	FTEs	Crews	FTEs	Crews	FTEs	Crews	
Aquila	6	2	---	---	---	---	Line
Capital	31	8	27	7	27	7	Line
CLS	21	9	16	7	16	7	Service
PAR	28	7	25	6	25	6	Line
PAR-Aquila	27	7	47	12	48*	12	Line
Wright	---	16	---	21	---	9	Vegetation

* Added Safety Person

ii) Mutual Assistance. The Midwest Mutual Assistance Group was not contacted for this event. However, Steve Gilkey, KCP&L's Director of Field Operations, did contact Ameren and Westar to assess their situation and determine if any help in close proximity -- Excelsior Springs or Olathe -- was available to KCP&L. Both Ameren and Westar were unable to direct resources to KCP&L as they were responding to outages similar to KCP&L's outages. KCP&L's contractor contacts were used to increase resources for restoring energy to customers.

c) Wires Down Team. The Wires Down Team was activated at 4 A.M., Friday, May 2, 2008, with team members reporting at 6 A.M. The team composition was made up of seven Safety and twenty-six Meter Operations personnel, totaling

thirty-three. The Wires Down Team ceased operations at 1 P.M., Saturday, May 3, 2008. Events investigated by the Wires Down Team:

Date	OK on Arrival	Actual Hazard	Total
5/2/08	73	75	148
5/3/08	49	33	82
Total Incidents	**122**	**108**	**230**
Percentage	**53%**	**47%**	**100%**

Customer Care Center

The Call Center's Customer Care Representatives took 6,499 power outage calls from customers in Missouri and Kansas on the first day of the storm, Friday, May 2, 2008. KCP&L's automated outage reporting system, Twenty-First Century ("TFCC") absorbed the bulk of the outage calls, handling 16,326 the first day. Although no additional Customer Service Representatives were brought in, overtime was offered to anyone taking calls.

The principle reason the abandonment rate and average speed of answer ("ASA") are skewed upward is because of the time of day when the storm passed through the area and the unexpected nature and severity of the event. Although the early morning call volume was initially low, there were enough extra calls due to the storm that the regularly scheduled overnight agents' ASA rose substantially to skew higher the ASA metric for May 2nd.

Unlike an ice event, which is commonly widespread over large areas and can be anticipated well in advance, the May 2nd storm event's severity and location of the affected areas could not be anticipated. In light of the unanticipated nature of this storm, the high call abandonment rate is to be expected when there are longer than normal ASA times. Although ASA times were extended, during the first six hours of the event, the TFCC system worked well, receiving 7,812 calls, generating trouble tickets and enabling a better understanding of the storm's affected areas.

This section provided by KCP&L

Call Volumes Answered by Call Center			Call Volumes Answered by Non-Call Center Reps
Date	**Power Problems/Outage Reporting**	**TFCC**	
Friday, May 2	6,499	16,326	0
Saturday, May 3	679	3,937	0
Sunday, May 4	201	884	0

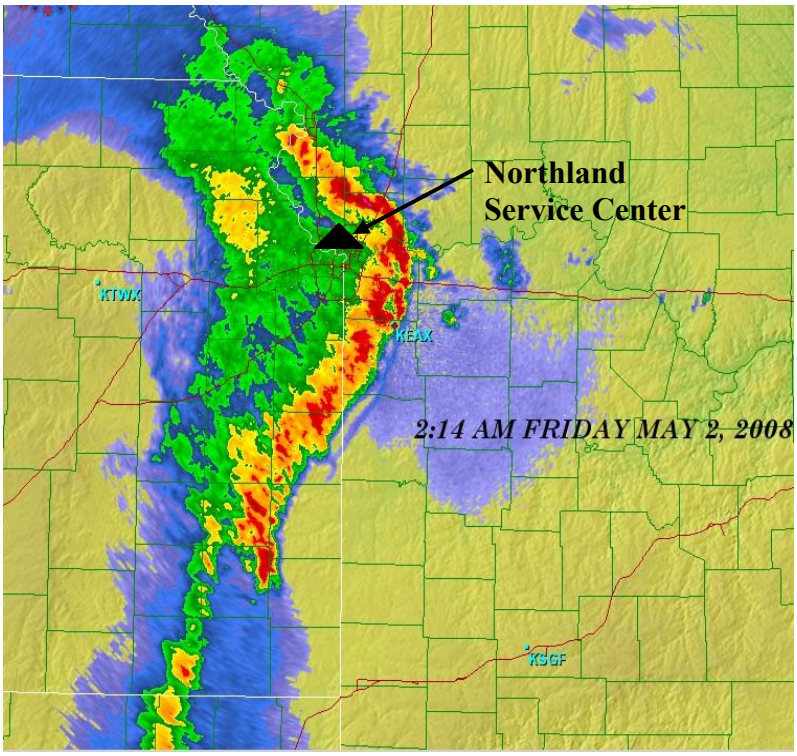
Call Center Performance			
Date	**Service Level**	**Abandonment Rate**	**Average Speed of Answer**
Friday, May 2	31.56:30	24.99%	220
Saturday, May 3	54.93:30	34.84%	290
Sunday, May 4	97.5:30	0%	3

Weather Data

As a first round of thunderstorms faded away during the late evening hours of Thursday, May 1, 2008, a second line of severe storms were developing across south-central Kansas. The second line of storms produced weather radar images of a Bow Echo, racing northeast at speeds in excess of 50 mph into the greater Kansas City metropolitan area and surrounding communities, arriving in Kansas City early on the morning of Friday, May 2, 2008. A Bow Echo is a term describing the characteristic radar return from a Mesoscale Convective weather System ("MCS") that is shaped like an archer's bow. These storm systems can produce severe straight-line winds and occasionally tornadoes, causing major damage.

The severe storm indicated by the Bow Echo generated hurricane force winds, bringing widespread wind damage to areas from Emporia Kansas northeast through Kansas City to Brookfield in north-central Missouri. As the storm line moved through Kansas City it spun up a couple of tornadoes along the apex, or nose, of the leading edge

of the Bow Echo. It is believed one tornado moved across the north side of Gladstone starting near North Oak and 70th Street, while another tornado moved through an area three miles northwest of Liberty, affecting locations in the vicinity of Cookingham Drive (Mo. Hwy 291) and 112th Street. However, it is believed that most of the damage was due to strong straight line winds that were also occurring along the apex of the Bow Echo indicated storm line. *(Source: National Weather Service Website)*



KCP&L Employee Injury

On Saturday, May 3, 2008, in the course of the service restoration effort, a KCP&L Lineman sustained life-threatening injuries stemming from contact with energized facilities. Notice of the injury to the MPSC was made May 5, 2008, Incident Report No. I-2008-00146.

Appendix D

Missouri Storm History

Storm Start	Storm End	Extent	Description
	December, 1848	An article in the Columbia Daily Tribune, December 19, 1924: "In December, 1848, sleet occurred which had no parallel in the history of the county. Trees, even of the largest class, were almost literally stripped of branches, rendering the roads in many places impassable. Trees without number were borne to the ground and broken off by insupportable mass of ice upon them. Shade and ornamental trees were greatly damaged and many orchards were ruined."	
12/16/1924	12/19/1924	One of the worst ice storms to affect Missouri in terms of severity, duration, damage and loss occurred. Central and east central portions of the state were hit hardest and after the storm had subsided. Ice ruts, 6 inches deep, were in the roads and made driving next to impossible. There were also reports of livestock frozen in the fields. To this date, the 1924 ice storm is one of the most significant winter weather events to strike Missouri.	Three-fourths of Missouri was covered by a layer of ice that varied from one to six inches thick.
01/08/1930	01/11/1930	Ozark Plateau; Quotes extracted from Climatological Data, January 1930 report: In most of the Ozark Plateau there was considerable damage to trees and utility properties by ice, from rain freezing as it fell, for three to four days beginning about January 8.	
01/07/1937	01/08/1937	The ice glaze was the heaviest in many years in Missouri. About one half of the state was affected, and the effects were severe in a belt extending in a southwest direction from Clark, Lewis, and Marion Counties on the northeast border to the southwest border. A strip about 50 to 75 miles wide in this belt suffered the maximum damages, with ice 1 to 2 inches thick on wires and considerably thicker on ground surfaces.	Mixed with the ice sheet was a heavy fall of sleet, varying in amount from 1 to 6 inches and averaging about 3 inches in most of northern Missouri and the west-central counties.

Storm Start	Storm End	Extent	Description
1/9/1949	1/12/1949	West Texas and southeastern New Mexico through the panhandle and north Texas, northeast across central Oklahoma and the southeastern corner of Kansas into south-central Missouri	Ice storm of unusual proportions; worst in Midland's history; long distance phone circuits out across region; 2 to 3inch of ice
1/22/1949	2/4/1949	North Texas north across central and eastern Oklahoma, northwest Arkansas and southeast Kansas and northeast into central Missouri	Worst ice storm in company history for Dallas P+L; steel towers crumpled; winds to 35 mph on 1/30 slowed repairs; 2inch of ice on wires; some phone lines had not been repaired from previous storm
1/3/1950	1/6/1950	Eastern Arkansas, western Tennessee, into Missouri	2inch of ice and sleet; worst ice storm in 17 years in Memphis area; one of worst in history in eastern AR
2/13/1951	2/15/1951	Southcentral Texas northeast across eastern Oklahoma and western Arkansas, into Missouri	Communication almost paralyzed in AR; ice on wires 1.5inch in diameter in San Antonio area; worst ice storm in Palestine TX history; timber damage in MO and AR
1/1/1952	1/7/1952	Northeast South Plains, northeast across central Oklahoma and east across north Arkansas and south Missouri	Ice on wires 2inch in diameter with 6inch long icicles in MO
4/17/1953	4/19/1953	Northcentral Oklahoma, east into Missouri	Ice, wind and lightning damaged phone and power lines
12/7/1956	12/10/1956	Northeastern Oklahoma northeast into Missouri and on	Power and communication lines damaged
1/26/1957	1/28/1957	Central Arkansas northeast through southeast Missouri	Most severe ice storm in northeast AR in 20 years; both water and power out in some towns; one of worst in memory in southeast MO;

Storm Start	Storm End	Extent	Description
12/2/1973	12/7/1973	Southwest Kansas, northeast across southeast Nebraska and northwest Missouri, and into central Iowa	Power outages lasted up to 6 days; one of most severe ice storms of record in KS; worst ice in this century in southwest IA; communication towers damaged
12/6/1978	12/10/1978	Central to northeast Arkansas into extreme southeast Missouri	Trees and power and phone lines damaged in AR; worst ice storm in extreme southeast MO since the 1950s; outages lasted up to 1 week
12/29/1978	1/4/1979	Central Texas northeast across southeast Oklahoma, northwest Arkansas and into Missouri	Worst ice storm in 30 years in TX and AR--10 day long outages in some places; gusty winds following ice storm in MO
12/12/1979	12/14/1979	Central north Texas into southcentral Oklahoma; southeast Missouri	Trees and power lines damaged; galloping; gusty winds
3/18/1984	3/20/1984	Southwest Kansas northeast to northwest Missouri and southeast Nebraska	Up to 2inch thick ice--communication towers fell-- one of most damaging and widespread ice storms ever in KS; outages lasted up to 1 week; no water in rural districts
12/13/1987	12/17/1987	Northwest Arkansas and southwest Missouri	Higher elevations in Ozarks affected
12/24/1987	12/30/1987	West North Texas northeast across central Oklahoma, northwest Arkansas, and southeast Kansas, and northeast through Missouri	Up to 1inch thick ice in KS; in MO up to 2inch thick ice, outages lasted up to 6 days, worst winter storm since early 70s, and ice remained longer at higher elevations; up to 3inch thick ice in OK, communication tower down in Tulsa, worst ice storm in the experience of many
12/29/1990	1/2/1991	Arkansas, except south and east, into southwest Missouri	Most severe ice storm since Dec 1983 with outages lasting up to 8 days in AR

Storm Start	Storm End	Extent	Description
10/28/1991	11/11/1991	West North Texas across west central Oklahoma and east central Kansas, and southeast Nebraska and northwest Missouri and into Iowa and MN; south central South Dakota into south central North Dakota	In OK, extensive tree pruning limited damage to power lines; up to 2inch ice and windy in KS, TV tower down; up to 2inch ice in NE; 1.5inch ice and windy in ND, galloping; most costly ice storm in history in IA; up to 3inch of ice in MN
12/1/1991	12/4/1991	West North Texas northeast across central Oklahoma into southeast Missouri	Trees and power lines damaged
1/16/1994	1/22/1994	North Arkansas into southeast Missouri	Power outages lasted more than 1 day in some areas
11/13/1996	11/27/1996	Northwest Arkansas, northeast Oklahoma into south central Missouri and north; northeastern Nebraska, southeast South Dakota and into western Iowa; in cloud icing in western Montana.	Up to 3inch thick ice in SD, outages lasted up to 4 days
1/12/1997	1/15/1997	Eastern Gulf coast of Texas into western Gulf coast of Louisiana; Extreme southeast Missouri	Record ice storm in LA; up to 1inch thick ice in MO, windy, communication tower down
1/1/1999	1/6/1999	Northwest and northcentral Arkansas across southwest Missouri	More than 1inch thick ice in AR; in MO up to 2inch thick ice, outages lasted up to 6 days
01/29/2002	01/31/2002	A long-lived major ice and snow storm blasted much of northwest, northern and central Missouri. Ice accumulations of over an inch were observed from the Kansas City metropolitan area, east and north through Moberly Missouri. For the Kansas City area, the ice storm was ranked as the worst ever.	At one point 409,504 total customers were without electrical power in the CWA, with some residents without power up to two weeks.

Storm Start	Storm End	Extent	Description
01/12/2007	01/14/2007	Southwestern, south central and east central Missouri; mostly along I-44 corridor from Springfield to St. Louis. The January 12-14 Ice Storm had not been experienced since the December 1987 Ice Storm, in terms of power outages. Fourteen other counties along the I-44 corridor also reported at least an inch of ice. The ice accumulations resulted in widespread downed trees and power lines. Approximately 200,000 residences were without power.	Ice Storm left over 200,000 southwest Missourians without power and a landscape resembling a war zone. Officially at the National Weather Service office in Springfield, one and a half inches of ice accumulation was received. Communities across southeast Kansas into western Missouri also received 1 to 5 inches of a snow and sleet mixture.
12/08/2007	12/11/2007	Southwestern and portions of central and east central Missouri as well as northwestern Missouri	The storm reached historical proportions over parts of northwestern Missouri, where some communities in Buchanan, Andrew, Holt, Atchison and Nodaway counties reported ice as thick as 1 inch.

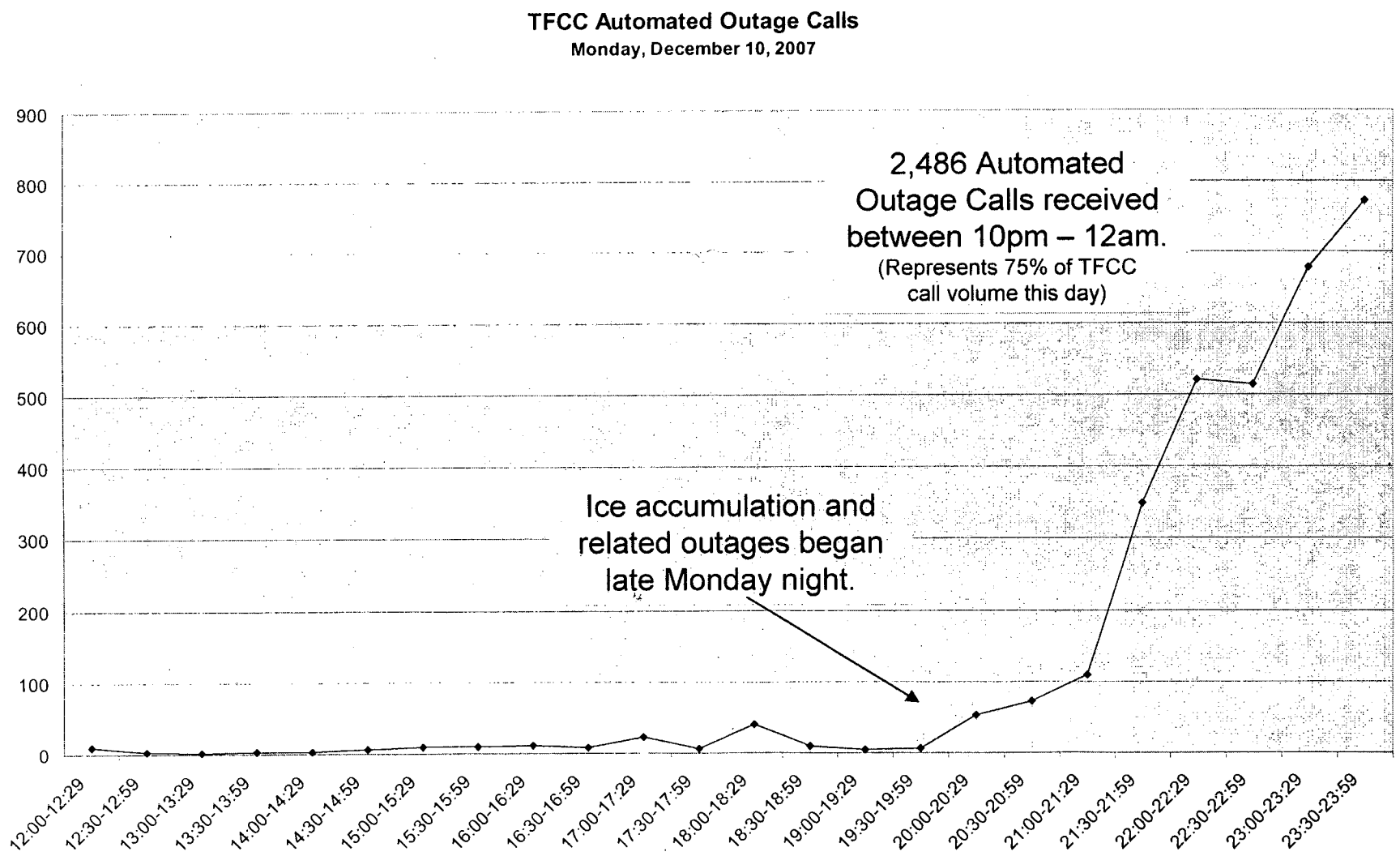
Source:

Data from 1848-1937: Dr. Guinan(Missouri State Climatologist) provided this information and he references it to a clipping from *Columbia Daily Tribune, December 19, 1924: Colonel William F. Switzler tells in his History of Boone County of a sleet storm* and an article that he wrote for Missouri Ruralist for which he extracted quotes from *Climatological Data, December 1924 report.*

Data from 1949-1999: American Life Alliance has gathered data on past ice storms from Storm Data(NOAA) and Climatological Data National Summary (US Weather Bureau) and news articles from cities in the affected region. The American Lifelines Alliance (ALA) is a public-private partnership project funded by the Federal Emergency Management Agency (FEMA) and managed by the National Institute of Building Sciences (NIBS), with the goal of reducing risks to lifelines from hazards.

Data for 2000- 2007: Event Archives and Significant weather records of NOAA's National Weather Service Weather Forecast Office.

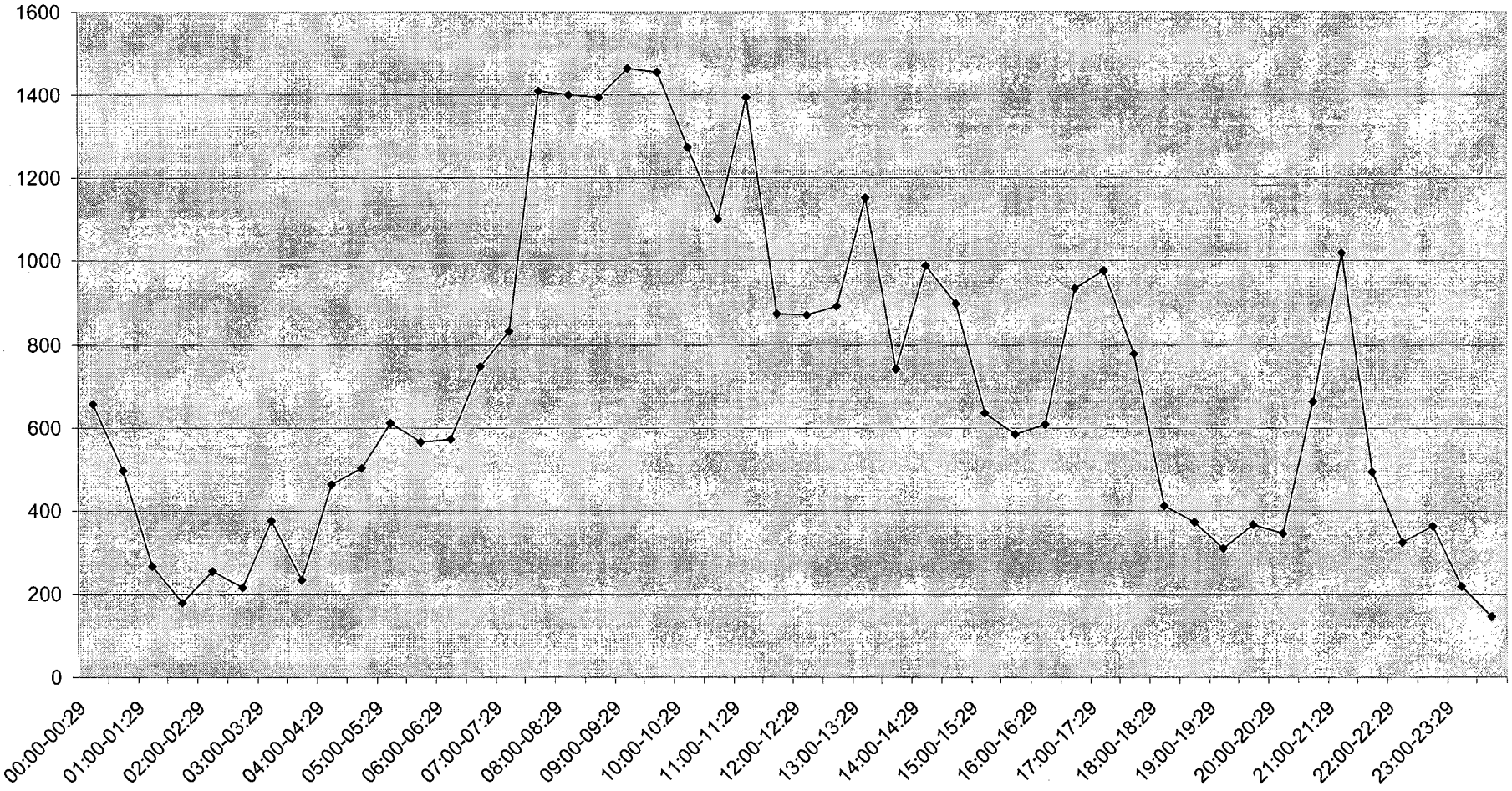
Storm Preparation, Monday, December 10



Appendix E

Appendix E

TFCC Automated Outage Calls
Tuesday, December 11, 2007



Appendix F

Appendix F