Greenway Coalition December 12th Questions
Xcel Energy Responses

Dear Mr. Springer:

I write in response to your email of December 12, 2008 including 16 questions regarding the Hiawatha Project. Following are responses to 9 of those questions. For purposes of the responses, we have assumed the questions are all directed at the Midtown area and greater south Minneapolis. We are working on the responses to the remaining questions and will forward them to you when complete. Please contact me if you have any further questions.

1. What are the three most common causes for outages as well as for power quality problems experienced by businesses on Lake Street?

There are two primary causes of electrical service interruptions in the Lake Street area. First, the area's feeders are exposed above ground, which makes them more susceptible to environmental conditions such as weather and vegetation, this can cause outages. Second, heavy demand causes overloading and results in outages on distribution feeders.

The power quality problems that customers are experiencing are related to low voltage due to the limited remaining capability of the distribution system for the area. At this load level, the only upgrades that can provide continued reliable service to the area that has a historical 1.5 % per year growth rate is to provide additional substation capacity to the area. All other measures short of the proposed infrastructure additions have been implemented.

2. Are there any upgrades or improvements to the distribution system, or technical solutions at the customer level, that could help alleviate the power issues that individual customers are having?

Customer electrical demand in the south Minneapolis area, including the Midtown area, has grown steadily for many years. The electrical system consists of distribution feeder circuits that are fed primarily from three substations; Southtown Substation located near 38th St and Hiawatha Ave in south Minneapolis, Aldrich Substation located near Aldrich Ave and Glenwood Ave west of downtown Minneapolis, and Elliot Park Substation near the west side of the Metrodome in downtown Minneapolis. As the customer demand has grown, the additional load has caused electrical circuit overloads leading to premature equipment failure, due to the extra stress on the equipment. As loads have grown, the number incidents and duration of customer outages has increased.

To meet this increasing load, distribution planning engineers have implemented various non-transmission solutions. These projects include:

- Adding new feeder circuits to existing substations including 2 Southtown feeders and 2 Elliot Park feeders. Many new circuits were built including those on 28th Ave south of 38th St,, on 42nd St west of Hiawatha, on Chicago Ave south of 28th Ave and north of 24th Ave, on 11th Ave south of 18th St.
- Replacing existing equipment that is damaged, failed, or has an unfavorable failure history including substation feeder breakers, feeder underground cable and overhead wire conductors, underground termination and switching cabinets, overhead switches, poles and duct lines. Equipment is typically replaced with new equipment that has the same or increased capacity. Equipment has been replaced on multiple Aldrich, Elliot Park and Southtown feeder circuits across the entire south Minneapolis area.
- Installing additional equipment to existing feeder circuits increasing their capacity. Additional equipment includes more cables, more wires, more distribution transformers and more capacitor banks. Many Southtown and Aldrich Substation feeder cables in duct were

doubled up to carry larger loads. Hundreds of additional distribution transformers were added to serve new customer load as south Minneapolis customers continue to increase electrical consumption. Much of the increased load at peak loading times is due to air conditioners. Additionally, dozens of distribution capacitors were added to many feeder circuits to maintain adequate voltage at customer homes.

- Reconfiguring existing feeder circuits that are more lightly loaded to carry loads of overloaded feeder circuits. Multiple circuits have been reconfigured in nearly all south Minneapolis neighborhoods.

The ability to further expand the capability of the existing distribution system through such upgrades has been exhausted. There is no room for additional capacity at the substations feeding the south Minneapolis area (Southtown, Elliot Park and Aldrich). To meet the anticipated additional growth, a new transmission source must be brought into the area and additional substations must be constructed to distribute the power to local home and businesses.

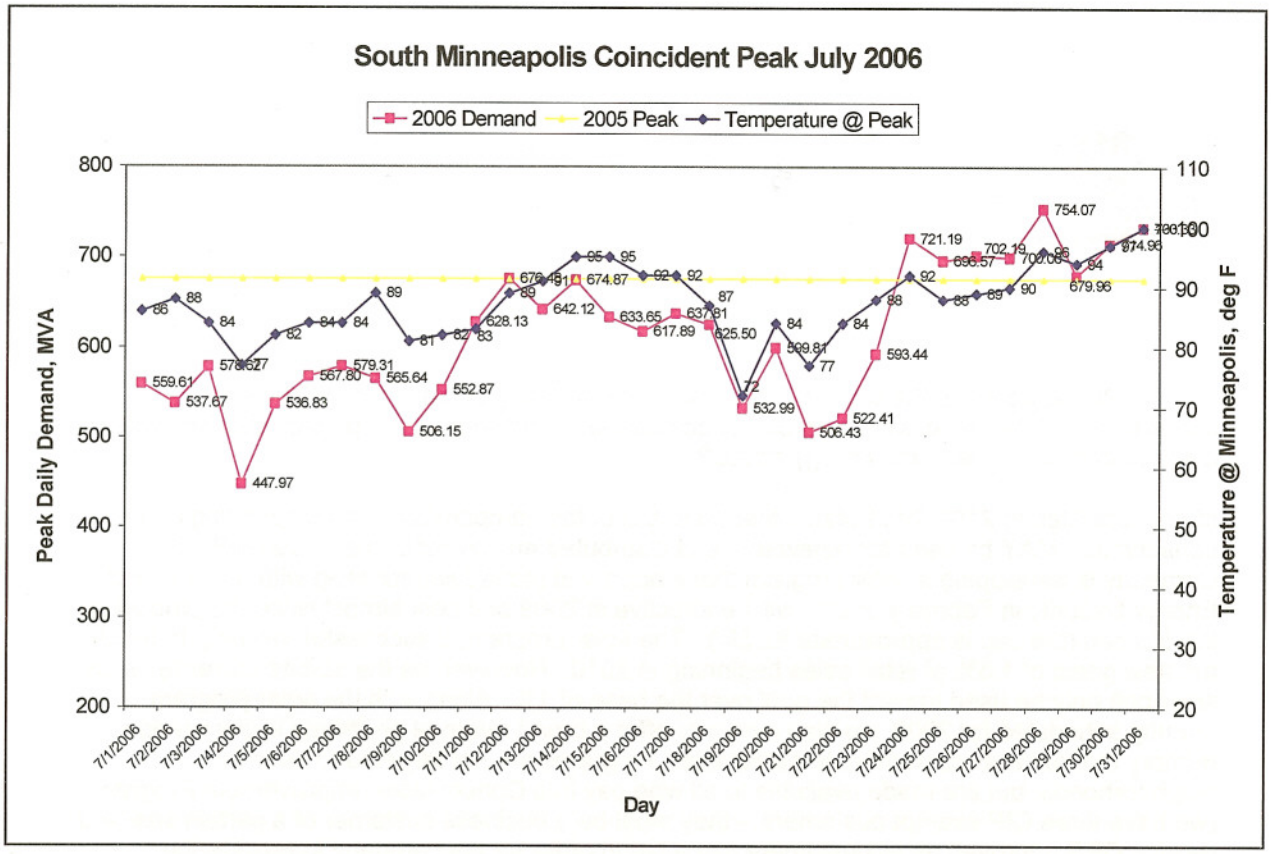
3. In order to understand the stated problem of transformers at the substations operating above 75% of their rated capacity, how many days per year, for how many hours per day and on what days, is this occurring for each of the transformers at the Southtown, Elliot Park, Aldrich, and St. Louis Park substations?

Overloaded substation transformers and feeder circuit components are manufactured with established loading limits. If the transformers and other equipment are operated within these limits, then this equipment can be expected to function properly for 20, 30, 40 years or more. When loading limits are exceeded, the equipment may be damaged. Repeated overloads reduces equipment life leading to premature failure or in extreme cases immediate failure. Such failures often lead to outages. When overloads reach predetermined risk levels, the Company acts to limit potential damage to the system by temporarily transferring the load to adjacent lines provided sufficient capacity is available; or interrupting service to preselected customers (with prior agreement) who have agreed to have their service switched off (Saver's Switch and other load shedding agreements are activated); and in extreme cases of overload, involuntary service interruptions are implemented to maintain the security of the system.

Detailed information on transformer loading cycles is not made public for security reasons.

4. What is the average loading year-round on these transformers for each of the past 7 years?

Average loading of transformers is not a useful indicator when planning electric distribution systems and is not analyzed by planning engineers. Substation transformers are sized to serve electrical customer load during peak loading times. The south Minneapolis area is a summer peaking area where the peak loading is caused primarily by customer air conditioning usage. Consequently, weather has a significant impact on the intensity and duration of the peak loading. The chart below illustrates the correlation of electric load with weather.



Coincident Peak July 2006 graphed with South Minneapolis Temperature

5. How does our chain of hospitals in this area compare to the most efficient hospitals in the metro area on a kilowatt-hour per year per square foot basis (or other units if more appropriate)?

We do not track this type of information about customer efficiency. In addition, information about specific customers is considered confidential. Inquiries about this data should be directed to the area hospitals.

6. How do the Wells Fargo Home Mortgage campus and Allina Commons compare to the most efficient office buildings in the metro area on a kilowatt-hour per year per square foot basis (or other units if more appropriate)?

As noted in response to question No. 5, we do not track this type of information about customer efficiency. In addition, information about specific customers is considered confidential. Inquiries about this data should be directed to the specific companies.

7. Please explain any incentives currently available from Xcel to maximize the electric energy efficiency of new developments, and existing buildings that which are being retrofitted.

For both new and existing buildings Xcel Energy provides a variety of energy design assistance and energy conservation programs to improve energy efficiency. See attached document.

ConservationProduct Summaries.pdf

8. Would Xcel use the 5% C.I.P. for solar program (as passed in the 2008 Minnesota Legislative session) to promote conservation and solar in the project area and which could help meet some of the energy needs?

Minnesota Statute 216B.2411 states that up to 5% of the company's required spending on energy conservation MAY be used for renewable and distributed energy resources. Currently, the Company is developing a solar program that if approved (scheduled for filing with the Office of Energy Security in February 2009), will be effective in 2009 and cost almost twice the amount of the 5% cap (the cap is approximate $2.3M). The solar program, if successful, will help to reach the new goals of 1.5% of retail sales beginning in 2010. However, as the statute currently reads, solar can only be used toward the goal over the base of 1%. Along with the solar program offering scheduled for 2009, we also currently offer a broad range of programs in our service territory that allow all customers to participate. Programs are not targeted to specific neighborhoods, but are made available to all who pay into Conservation Improvement Program (we have three CIP exempt customers - they must be a business customer of a certain size and receive OES approval) as all customers pay a fee in order for the company to provide the programs.

9. How do residential electricity customers in the Hiawatha Project impact area and in greater south Minneapolis compare with households metro-wide on a kilowatt hour per year per household basis (or other units if more appropriate)?

The Company does not maintain the comparison statistics requested.

Sincerely,

Betty Mirzayi
Transmission Project Manager
Xcel Energy