Reliability Working Group

Purpose and Scope

02/21/2013

The Reliability Working Group is tasked with vetting the reliability issues associated with the city's municipalization exploration work plan.

Reliability is a combination of physical and process requirements to ensure that the electric system meets both federal and regional reliability requirements, customer demands for uninterrupted service and meet or exceed existing Xcel Energy reliability. Because reliability is such a high priority, the staff team included a major task focused on the various aspects of achieving this objective.

The goal of the working group is to help city staff identify what is required to meet the expected reliability requirements and associated costs. Considerations include not only reliability in the design, operations and maintenance of the system but in the delivery of power from suppliers.

The City hired engineering consulting firms (Exponential Engineering and Schneider Electric) and Warren Wendling (former chief engineer for the Colorado Public Utilities Commission)for specialized expertise to perform the primary analysis work. The working group was asked to help inform the scope of this analysis and review consultant work products and vet assumptions with respect to reliability driven costs.

Reliability is an important aspect in determining the best method of separating from Xcel. However, the separation analysis is confidential and was not included in the scope of the working group goals.

Working Group Meetings

The working group communicated through the Basecamp web application met on the following dates:

November 8, 2012
December 12, 2012
January 9, 2013
February 6, 2013

Working Group Members

COMMUNITY MEMBERS

Pete Baston, Community Member, IDEAS iQA
David Corbus, Community Member, NREL
Burrell Eveland, Community Member, Western Area Power Administration
Jim Look, Community Member, IEEE
Puneet Pasrich, Community Member, Colorado State University

STAFF

Robert Harberg – Utilities Project Management Coordinator
Kathy Haddock – Assistant City Attorney
Andrew Barth – Communication Specialist

CONSULTANTS

Tom Ghidossi – Exponential Engineering
Bob Lachenmayer – Schneider Electric
Warren Wendling – Wendling Consulting, LLC

SUMMARY OF KEY INPUT FROM THE RELIABILITY WORKING GROUP:

The following questions were considered by the reliability working group and their input has been summarized in Attachment G of this memo. There is significant expertise among the working group members and consultants and the exchange of information and discussion served to refine the understanding and analysis of the reliability issues associated with potential municipalization.

1. Existing Xcel Energy System Reliability Considerations
    a. What are the strengths and weaknesses of the existing Xcel Energy electric utility system infrastructure in Boulder?
    b. How does Xcel Energy provide reliability through on-going administration, operations, maintenance, monitoring, control, dispatch, project management, customer service and response procedures?
    c. How does Xcel Energy provide power generation and transmission reliability?
    d. What is the existing level of Xcel Energy reliability as measured by the System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI)?
    e. Are there other reliability aspects of the existing Xcel Energy system that should be considered?
    f. How and to what extent has Xcel Energy incorporated and considered redundancy, firm capacity, power quality controls, reserve margins, common-mode failure scenarios?
    g. How will the plan for physical separation from Xcel Energy address reliability issues?
2. Reliability Regulation Considerations
    a. What are the reliability requirements based on North American Energy Reliability Corporation (NERC)?
    b. What are the reliability requirements based on the Western Energy Coordinating Council (WECC)?
3. Future Reliability Goals and Factors to be Considered
    a. What methods do other communities and utilities use to assure reliability?
    b. How would power generation and transmission reliability be assured?
    c. What are the reliability expectations and desires of residential and business customers?
    d. Are there other industry reliability indices or standards that should be considered?
    e. What procedures and investments should the city consider to increase the level of reliability?
    f. How should reliability be assured based on future growth and redevelopment?
    g. How will future distributed generation and demand management affect reliability?
    h. What are the human, organizational and financial resources that will be needed for on-going administration, operation, maintenance, monitoring, control, dispatch project management, customer service and response procedures to assure reliable electrical service?
    i. What types of natural and man-made hazards should be considered including frequency and magnitude of extreme events?
    j. How and to what extent should redundancy, firm capacity, power quality controls, reserve margins, common-mode failure scenarios be considered by the city to increase the level of reliability?
    k. Are there other reliability issues that should be considered?