

Reliability Working Group Meeting Notes – Dec. 12, 2012
Draft dated January 10, 2013

Attendees:

City Staff:

Bob Harberg
Kathy Haddock
Andrew Barth
Kelly Crandell

Consultants:

Bob Lachenmayer
Warren Wendling
Chet Puckett
Tom Ghidossi
Gregg Hamm

Reliability Working Group:

Pete Baston
Burrell Eveland
Jack Mason
Jim Look
Puneet Pasrich

Meeting Overview:

TG – Brief overview of Exponential’s background, scope of work for the project, current projects, and next steps.

BL – Introduction of Schneider and their scope of work, role, deliverables.

WW and TG – Xcel transmission system overview and associated reliability issues

WW – Provided map from PUC hearing – Went through map using A/V equipment. Talked about the history of Boulder’s transmission grid installation. Talked about the different service providers and their loads. Talked about Boulder’s current load. You need two 230 lines into Boulder to get electricity into Boulder if you don’t use PSCO. City could become a network integrated service company. Tom is looking at where in the system that break or ownership should change. Pointed out city generators. Talked about transmission line layout. What and who services what area. Substation information. Substations were built to NERC specs. Bulk of the Electrical system you will do no harm to your neighbor. Does it make sense for the city to acquire to some transmission system, or does it make sense to purchase the transmission service as an integrated service from PSCO and let them be the balancing authority – Tom will have to figure that out. We talked about the different substations. Lafayette on south boulder road. Eldorado has a feeder back to boulder, but there’s nothing else. Boulder Hydro has 25kV. –

WW – Look at typical distribution substation – One-line drawing –

TG – Worked through one-line drawing – we have transmission coming in and out at 115 kv or 230 kv – Explained how a distribution substation works as far as outages and normal operations – If one transformer is down, the second can serve the entire load. – talked about redundancy – how to establish redundancy and agreements to support each other – Talked about how many transformers are at each boulder substation.

KH - Described how condemnation comes into play with separation. City shows what it needs and the Council says what to condemn.

PB – What level of detail will we get from Tom?

TG – It will be feeder territories.

PB – Give council a green for what we need and a red for what we don't

WW – Went through generic Xcel feeder one-line arrangement using drawing. How they operate in system failures and in normal operating procedures.

WW - Went through Xcel's description of the PSCO electrical distribution system in Boulder. Handout provided.

Jack – When you condemn, does it have to be within city limits.

K H – No. We just have to prove need and use.

BH – Document from APPA on Reliable Public Power (RP3)- Program overview. – Document available on Basecamp – SAIDI – SAIFI – MAIFA – Rating system and how they work. – NERC registration and standards – All of APPA's reliability requirements – There are many – Cyber security – NIMS requirements – Will use this guide as the baseline and find parameters.

TG- Spoke about reliability indexes and what they mean and how to use them.

Dr. Greg Hamm and Kelly Crandall went through Decision Analysis and the particular framework being developed to answer not just whether municipalization is feasible, but also whether it is desirable.

Dr. Hamm provided background and an introduction to decision analysis. Touched on key points and exercises he will be doing. – Handouts provided on Basecamp

Three elements of decision analysis

What you want – metrics or objectives

What you can do – decisions or strategies

What you know – uncertainties, facts, assumptions

- Strategy and data feed decision model and the output is a prediction of objectives
 - In DA we emphasize that data is uncertain

Introduction of Exercises. Group will complete them offline using Basecamp.

- Don't create bounds, but create big lists. We will then prioritize what we can handle with what we have to use. Lets get the list of decisions out there. List of existing provided.
 - Governance structure – xcel/muni
 - GHG emissions or resource mix
 - Build/buy/ppa generation
 - Separation geography
 - Investment in efficiency programs
 - Investments in DSM programs
 - Subsidies for customer generation of renewable
 - Subsidies for customer generation non-renewable
 - Investment in distributed generation
 - Timing of bond sales
 - Length on bonds
 - Competitive vs. non-competitive bonds

Info will be posted on Basecamp by Kelly Crandall. Contact Kelly with questions.

Pete – We're getting a lot of different data programs that don't integrate.