**1st External TAG Meeting**

6/16/2016, 9:00 - 10:40 AM

**Presenters:** Mark Sellers-Vaughn & Brian Robertson

**In attendance**: Mark Sellers-Vaughn, Brian Robertson, Bob Morman, Mike Parvinen, Marty Saldivar – NWP, David Nightingale & Kathi Scanlan – WUTC

**Called in**: Kary Burin, Garret Senger, Amanda Sargent, Chad Luginbill, Josh Romine, Miki Bode Jones – NWP, Tom Pardee – Avista, Monica Cowlisha, Jeremy Ogden, Carolyn Stone, Pam Archer, Becky Mellinger, Brian Hoyle, Mike Clapp, Chris Robbins & Eric Wood

**Minutes by**: Carolyn P Stone

Bob Morman introduced himself and welcomed all of today’s participants. He discussed the Cascade 2014 IRP not being recognized by the Commission. He assures that he, as well as the IRP staff at Cascade is committed to Success for the 2016 IRP!

Mark then lead the group through today’s agenda

Mark named the members of the newly formed IRP Steering Committee as follows:

● Garret Senger

● Bob Morman

● Mike Parvinen

The finished plan to hire a consultant is to be presented for approval to the IRP Steering Committee.

Next was discussion of issues that caused the 2014 IRP to not be recognized. Mark went over our plans for resolution to all of these issues, including the organization and presentation of it. It will really be cleaned up!

Brian Robertson then went over the contents of the IRP, as follows:

**CNG Demand Study:**

●CNG contracted MRE and Gilbert & Associates to help build a model including customer core natural gas demand and peak demand for 20 years.

●Shows demand at the City Gate & City Gate loop level

●Demand is weather and customer driven, rolling 30 years using “Normal’ temps

Inputs include:

\*Historical demand = Pipeline EBB, GMS (Aligne), & CC&B

\*Weather = Schneider Electric

\*Population & Economic data = Woods & Poole

\*Customer Count = CC&B

\*Assumption of 1% increase in population & in employment

●Last year non-weather dependent demand was used. Customers ramp up production based on season... These customers were removed prior to the demand run. Demand was placed back in for forecast.

Question 1: Does this show a “system wide event” that drives heating demand?

Answer: We use 3 types of Peak Day forecasts. We will go through those.

Question 2: Is this linear only?

Answer: The current model is linear only. We will improve/change this forecast by analyzing other regressions to get a bigger broader picture in the future.

**Forecast & Results**:

●Demand data = Pipeline EBB’s & GMS (Aligne)

●Data verification & customer count = CC&B

**Growth Data**:

●Woods & Poole State profile data used

Question: Were demand profiles done for each SIC code? Growth numbers for educational services for example….

Answer: We will be taking a look at that.

**Residential Growth**:

●Population growth (1%) via Woods & Poole

**Growth Scenarios**

●3 used, Base Case, high growth + 50% and low growth -50%

**Weather Data = HDD**

*Using Schneider Electric data*

●30 years

●Has a more rural focus representative of our service territory (not just airports)

●This service uses NOAA and provides consistency

**Weather Stations**:

●Uses 7 stations

Question: On the low side, would the growth get below zero…i.e. negative growth?

Answer: YES

**Tariff Allocation**:

●Weighted Average used for every Citygate and every Rate Schedule

●Manual adjustments can be made to correct and smooth data

Previous Linear Regression vs Current Linear Regression

**Goodness of fit**:

●Naïve Methodology vs Regression

**HDD Calculation**:

● High & Low average

Why use 65 vs 60?

●60 is better for our service territory

●Linear model is a better fit with 60.

**Final Demand Forecast**:

● Year, Month, RS, Citygate, Zone District (or can create an area “sectors”)

●Core load forecasted by City Gate by RS

**Weather Scenario**:

●Average is base case

●6 warmest/coldest years selected for high/low scenario

**Peak Day Forecasts**:

●Weighted each HDD based on its weather location

●Average - Cascades plans for expected Peak day during the year!

●Max - Plan for coldest day in past 30 years, on 12/21/1990

●Citygate - At each weather location

Question: Max Peak Day – using the coldest day as they happen, projected forward?

Answer: YES

Question: Did you look at the engineering side and system planning?

Answer: YES

**Mark Summarized**:

1. We intend to resolve the 2014 issues
2. We will continue to work on solid methodologies

●Still 2 months until we lock down the forecast so those numbers CAN change.

Mark stated that if there are any particular Citygates or Customer Segments wanted, please let them know.

**Action Plan**:

1. Cascade will work on gathering growth information from other locations to compare with Woods & Poole.
2. We will verify distribution planning information with Engineering for peak day analysis.

Question: The City Gate Peak Demand is good, but how does Cascade use that information?

Answer: This will be addressed at TAG 3.