Contract Demand Quantity (CDQ)
Close-Out of Comments

June 17, 2011

This Contract Demand Quantity close-out document explains conclusions of the Bonneville Power Administration's (BPA) determination of Contract Demand Quantities under the Regional Dialogue power sales contracts. In making this determination BPA followed the steps laid out in section 5.3.5.2 of the Tiered Rates Methodology in establishing the customers' CDQ amounts. BPA held public workshops and conducted public review and comment to take input before concluding its CDQ determinations.

Background:

As part of BPA's implementation of the 'Regional Dialogue' Contract High Water Mark (CHWM) contracts, BPA calculated monthly Contract Demand Quantities (CDQ) for individual preference customers. CDQs are monthly kilowatt (kW) amounts that will be used in billing for Load Following and Block with Shaping Capacity[1] contracts, starting October 2011. BPA will subtract the CDQs from the customer's monthly Customer System Peak (CSP) kW in one step of calculating the customer's monthly Power Demand Charge Billing Determinants.

The monthly CDQs were calculated by applying heavy load hour load factors (HLH load factors) to the customer's adjusted measured monthly HLH loads for FY 2010. These calculations were performed concurrent with CHWM calculations and the resulting CDQs will be included in CHWM contracts. Monthly CDQ amounts will not change during the term of the CHWM contract, except in instances where a customer's Provisional CHWM amounts are retained, or in cases of annexation.

BPA shared customer-specific 12 monthly CDQ HLH load factors with all CHWM customers to verify that they accurately reflected the customers' historical loads. The HLH load factors were calculated from FY 2005 – FY 2007 total retail load (TRL) data. The calculation is described in Section 5.3.5.1 of the September 2009 Tiered Rate Methodology (TRM).[2]

An example of load factor calculations is shown in Attachment 1.

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[1] Currently there are no CHWM contract purchasers of the Block with Shaping Capacity product. CDQ load factors were calculated for Slice/Block customers to anticipate the possibility that those customers may convert to CHWM Load Following or Block with Shaping Capacity contracts during the term of the CHWM contract.

[2] Load Factors were calculated from metered FY 2005 – FY 2007 HLH Total Retail Load (TRL) energy and HLH Customer System Peaks (CSP). Both energy and CSP are reduced by HLH "Existing Resources" for CHWM for FY 2012, from Exhibit A of the customer's CHWM Contract. ("Existing Resources" are those identified in Attachment C, Column (D) of the September 2009 Tiered Rate Methodology.) Both energy and CSP are reduced by the HLH *average* (akW) of FY 2012 Existing Resources for CHWM from Exhibit A.

Numerators
The numerator of the Load Factor calculation is Contract average HLH (aHLH) energy in akW, (reduced by the "Existing Resources") for a calendar month. The aHLH is calculated as: total HLH kWh for a single month divided by the HLH hours of that month (and that year). The three akW numbers (FYs 2005, 2006,2007) are added together for that calendar month (for each of the years FY 2005, FY 2006, and FY 2007) and the total divided by three.

Denominators
The denominator for each calendar month is the three Contract CSPs (reduced by the "Existing Resources") added together (for the three years) and divided by three.

To calculate monthly CDQs BPA divided each monthly HLH load factor by 91 percent, producing adjusted HLH load factors. (The adjustment is described in Section 5.3.5.1 of the September 2009 TRM.) These *adjusted* HLH load factors then were used in the final CDQ calculations.

An example of calculated CDQs is shown in Attachment 2.

The Tests and Results:

The TRM in Section 5.3.5.2 identified two tests to be applied to the CDQs. (See Attachment 3). These tests apply the CDQs to actual, unadjusted, monthly FY 2010 HLH energy and CSP to determine if the resulting Demand Charge Billing Determinants are 1) less than zero, or 2) twice the average of all customers' Billing Determinants as a percent of CSP.

When applying the tests to the actual FY 2010 data, if either condition 1) or 2) occurs, then BPA is to make certain determinations that, if shown, could lead to adjusting a customer's CDQ. These determinations are:

- Was the result caused by a discrete event beyond control of the customer?
- Was the result likely to recur? and
- Would changing the CDQ not materially frustrate the objective of having customers face the marginal cost of capacity as part of the TRM?

If each of these determinations were satisfied, then BPA would adjust CDQ for a particular month.

When these tests (less than zero, or twice the average) were applied to the actual FY 2010 data, the results were surprising. In every month there were results identified for potential CDQ adjustments for multiple customers. The results also highlighted that there were a very high number of 'failures' (exceeding one of the two tests) in November 2009. A very high percentage of those 'failures' were less-than-zero Billing Determinants, from which BPA concluded that something was unusual about the month rather than systematic changes in individual customers' loads.

The Filtering Steps:

In response to the observed results, BPA developed filters to evaluate (and reduce) the number of potential CDQ adjustments. These filters determined if individual monthly instances, exceeding one or the other of the tests, were anomalies or were likely to recur for particular customers. BPA sought information/data that would indicate and thus clarify whether systematic changes in a customer's load were likely to persist into the future, or were abnormal events, such as weather events, associated only with FY 2010 loads.

Load Factor Filter: First, BPA compared the HLH load factors that occurred in FY 2010 to the same-month load factors in each of FYs 2005, 2006, and 2007.[3] This determined if the FY 2010

[3] BPA used those three years because they were the only years of complete and vetted data available. FY 2008 would have been an ideal comparison year because of its use for Provisional HWMs, however, BPA did not have available the Customer System

results were within normal HLH load factor volatility. If the FY 2010 load factor for a month fell between the highest and the lowest of the same-month load factors of FYs 2005 – 2007, the CDQ for that month was acceptable and removed from consideration for potential adjustment.

Recurrence Filter: Second, for CDQs remaining in consideration for adjustment, BPA evaluated whether the customer's FY10 Billing Determinants for the remaining months repeatedly exceeded one or the other of the two TRM tests. BPA evaluated whether the 'test failures' were consistently twice the average, or consistently less than zero.

By observing the customer distribution of 'failures' in each direction, BPA concluded that reasonable thresholds to determine that a customer had a recurring load change were five or more months of less-than-zero, and four or more months of twice-the-average.[4] These thresholds resulted in expected adjustments for 13 customers.

Twice-the-Average Adjustments: For customers with Billing Determinants exceeding twice-the-average percent of FY 2010 CSP, BPA increased CDQs on a monthly basis by the amount necessary to lower each percent to exactly twice the combined monthly average of all customers, as a percent of CSP.[5] Seven customers received CDQ increases as a result.

Less-than-Zero Adjustments: Reducing CDQs for less-than-zero Billing Determinants was more complex. Since customers with fewer than five test failures received no CDQ reductions, it seemed unjustified to reduce CDQs by the maximum amount for the six customers with five or more test failures. BPA sought a balance that would apply the intent of the TRM while simultaneously providing equitable treatment among customers.

In its review, BPA noted that the "twice-the-average" test automatically accounted for load characteristics of other customers. The "less-than-zero" test, on the other hand, considered only the loads of the single customer. BPA concluded that it was reasonable to consider the loads of other customers when *reducing* CDQs, as it did for the *increasing* customer CDQ tests. While a small number of test failures for a customer indicated a non-recurring event during FY 2010 rather than recurring changes in load,[6] such non-recurring events, particularly weather events, could affect multiple customers. These events included customers who experienced recurring load changes.[7] With this in mind, BPA developed methods of mitigating a portion of the CDQ reductions.

Workshop Proposals: In CDQ workshops on March 17 and April 12, 2011, BPA met with customers and presented three scenarios, based on the actual FY 2010 data for all customers, for alleviating some of the CDQ reductions of the six customers.

- On March 17, BPA presented an approach allowing the six customers to retain some "less-than-zero" Billing Determinants in each month. That less-than-zero amount was the annual average (mean) percent of CSP retained by all customers with four or fewer less-than-zero test failures.

Peak data necessary for applying the tests. FY 2009 data also would have been very helpful, but those data had not been vetted and monthly CSPs had not been extracted.

[4] Those thresholds were larger on the less-than-zero side because staff found that the November 2009 anomaly produced a much larger number of instances of Billing Determinants exceeding zero (with CDQ 'headroom') than instances of twice-the-average.

[5] These adjustments only applied to CDQs for months remaining under consideration for adjustments after the first filter (the comparison of FY 2010 HLH load factors to the FY 2005 – FY 2007 same-month HLH load factors).

[6] Non-recurring events could occur in a broad variety of situations, the most common of which were unusual weather events affecting temperatures and/or precipitation.

[7] November 2009 is the prime example of such a non-recurring event.

- On April 12, BPA presented to customers two modifications to the March 17 proposal. First BPA proposed using the annual *median* percent (rather than *mean*), to eliminate the impact of extraordinary 'outlying' percentages. Second, as an alternative, BPA calculated monthly adjustments using monthly percentages to retain portions of CDQ.

- The second alternative linked retaining portions of CDQ (of the six customers) to events or characteristics of individual months. Less-than-zero test failures identified low CSPs relative to HLH energy. To account for widespread non-recurring events in a month, BPA proposed to adjust CSPs in such month to a more normal (historical) HLH load factor. BPA would do this by adding a Non-Recurrence Adjustment to the FY 2010 CSP that, when combined with the CDQ, would result in no negative Demand Billing Determinant for that month. BPA proposed this Non-Recurrence Adjustment in all months where the unadjusted CSPs produced negative Billing Determinants for at least 20 customers.

The proposed Non-Recurrence Adjustment for the six customers with reduced CDQ was the median percent (of CSP) Non-Recurrence Adjustment for all customers whose CDQs are not reduced. BPA applied that percent adjustment to the CSPs of the six customers with five or more less-than-zero Billing Determinants. This adjustment alleviated CDQ reductions by monthly percentages varying from zero to 7.33 percent.

Comments and Evaluation:

BPA received four comments on the CDQ comment site during the comment period ending April 19, 2011. Four additional comments mentioning or addressing CDQ also were posted on the CHWM comment site during the comment period ending March 28, 2011. Those comments, plus notes taken at the March 17, 2011 Workshop, are included in Attachment 4.

Comment Summary:

1. **By allowing customers with four or fewer occurrences of Billing Determinants of zero or less to face no CDQ reductions, those customers may be left with more CDQ 'headroom' than a customer with more than four occurrences. A customer who is adjusted may be left worse off than a customer who is not adjusted. (Northern Wasco, Salmon River)**

   Response: The comment is directed to situations of FY 2010 load data resulting in less-than-zero Billing Determinants. Each customer's situation (energy and peak loads, load factors, expected load growth) is unique and there is no clear answer to this proposition. Any analysis of the issue would require investigating each customer's characteristics and making many assumptions about the future. Moreover, it is not entirely clear how one would measure "worse off."

   All proposed filtering and adjusting mechanisms to reduce CDQ included alleviating some portion of the reduction in order to provide some equity among customers. Each adjustment mechanism attempted to mitigate some portion of the CDQ loss to avoid the harsh impact of a customer's data tipping over a threshold and to obtain a more balanced result for all.

The second proposal presented at the April 12 Workshop featuring a "Non-Recurring Adjustment"[8], identified three months for that adjustment in FY10. The Non-Recurring Adjustment would provide CDQ relief for both Northern Wasco and for Salmon River in one of the three months.[9] This result left a significant disconnection between zeroing out CDQ headroom for customers with more than four negative Billing Determinants while allowing those with exactly four negative Billing Determinants to retain all CDQ headroom. This comment, in conjunction with this observed disconnection, resulted in BPA revising the method for alleviating the harsh impact of a customer's data tripping over a threshold.

2. **Proposed CDQ reductions fall very heavily on only two utilities, Northern Wasco and Salmon Electric. (Northern Wasco)**

   Response: The statement is true, although the observation does not provide a rationale for changing any of the CDQ adjustments.

   CDQ reductions result from several factors including the extent to which a customer's load factor changed between FYs 2005 – 2007 and FY 2010, and the magnitude of the customer's FY 2010 loads. Both Salmon River and Northern Wasco's loads are much larger than any of the other customers for whom CDQs are to be reduced.

3. **At the March 17, 2011 workshop, it was suggested, without opposition, to not reduce any CDQ amounts since the impact would be small. We propose not reducing any CDQs. (Northern Wasco; Salmon River)**

   Response: The language of the TRM directs reduction of CDQs, "If BPA concludes that the calculated Demand Charge Billing Determinant is not an anomaly and is likely to recur, then BPA will adjust the CDQ for such month . . ." It would be inconsistent with the wording and intent of the TRM to ignore the tests using actual FY 2010 data. Moreover, for balance between increasing CDQ for customers that would be billed at more than twice-the-average (using FY 2010 loads) percent of CSP, it follows that we would remove CDQ for customers with "CDQ headroom."

4. **Using a test period of one year, which may not be representative of the 17 years of the contract, seems extreme for adjusting CDQs, which will receive no further adjustment. Customer load factors and operating characteristics may not stay the same for the remainder of the contract term. (Northern Wasco)**

   Response: A test period of only one year is a very limited data set and may or may not be representative of the 17 years of the contract. However, in BPA's

[8] The Non-Recurring Adjustment recognizes that an unusual (weather) event occurred in a month of FY10 that caused a significant portion of customers to experience abnormally high load factors. The Non-Recurring Adjustment essentially 'normalizes' the peak values for customers that potentially would receive CDQ reductions by increasing such peaks, and alleviates a portion of the reductions.

[9] The three FY 2010 months of 20 or more instances of low peaks, vis-à-vis energy, were: November, February and September. Note that these 20 or more instances are tallied only from the instances remaining after the first filter, the test of whether the FY 2010 load factor was outside the range of FY 2005 – FY 2007 load factors. For Northern Wasco, November, but not February or September, is a month in which CDQ will be reduced. For Salmon River, February, but not November or September, is a month in which CDQ will be reduced.

filtering of test results, BPA first compared FY 2010 monthly load factors to the same customer/same month load factors of FYs 2005, 2006, and 2007. This step expanded the use of data beyond only FY 2010 and provided assurance that the FY 2010 data of the six customers losing CDQ were truly different from those of prior years.

The wording of the TRM is unambiguous that we will use FY 2010 data. If BPA were to use a different year or combination of years, it would require revising the language of the TRM.

5. **TRM section 5.3.5.2 states ". . . BPA will remove excess CDQ headroom only, without establishing the CDQ so as to expose the Customer to a Demand Charge in such month." We need clarification if this means adjustments could be to the extent to expose customers to a demand charge. (Salmon River)**

   Response: The tests and adjustments of CDQ are based on actual FY 2010 loads. There is no basis in the TRM for using forecast data or after-the-fact data for FY 2012 or any other future year. Consequently, there is no certainty that in FY 2012, using actual load data, that there will not be a Demand Billing Determinant in any given month. However, a recalculated FY 2010 Billing Determinant with the downward adjusted CDQ would continue to result in a Billing Determinant that was at or below zero.

6. **If filtering at all, it should be an annual filter. (Salmon River, PNGC)**

   Response: The understood intent of the comment is to ask BPA to use an adjustment methodology that would alleviate more of the loss of CDQ for the six customers losing CDQ. This proposal, first suggested at the March 17 workshop, would use an average percentage (of CSP) of less-than-zero Billing Determinants applied in each month.

   At the March 17 workshop, BPA presented the preliminary methodology using the mean percent that each customer's monthly less-than-zero Billing Determinants were relative to that customer's monthly CSPs. It was a monthly, customer by customer percent, averaged over the year without regard to which month the less-than-zero Billing Determinant occurred. In fact, of the 253 instances of less-than-zero Billing Determinants, 79 occurred in November 2009, alone. This fact inordinately weighted the impact of that one month on the annual percentage. Moreover, the percent headroom of one very small customer in one month exceeded 300 percent, distorting the overall mean for the year.

   The language of section 5.3.5.2 of the TRM focuses on monthly tests. The language on TRM page 71 repeatedly uses the words, "for each month," "for each such month," "for such month," and "in such month." There is no supportable logic for using an annual percent, particularly when in some months there were many instances of such less-than-zero Billing Determinants, and in others there were perhaps only two instances. The annual approach would weight weather anomalies in one month and affect the retained CDQs in other months.

Using monthly medians to alleviate reduction of less-than-zero headroom would align BPA's adjustment mechanism with the TRM wording and provide customers a level of protection very close to what would have been provided by using a median annual percentage.

7. It is unclear why Pend Oreille PUD was exempt from the analysis. (PNGC)

Response: Pend Oreille PUD's CDQs required specific consideration and attention. The load factors resulting from the TRM formulas using FY 2005 – FY 2007 data were not reasonable. This resulted from combining the FY 2005 – FY 2007 Total Retail Loads (TRL) with the FY 2012 resource amounts from Pend Oreille's Regional Dialogue Contract Exhibit A. Pend Oreille has several months of substantial non-Federal hydro resource amounts listed in Exhibit A, which, when combined with its relatively small monthly TRL, produced monthly CDQ load factors and resulting CDQs that could not be rationally compared and evaluated alongside the CDQs of other BPA customers.

In both May and June the resulting Peak MW and HLH aMW are negative values because the large resource amounts in the FY 2012 Exhibit A exceed historical TRL amounts in those months. In April, the FY 2012 Exhibit A resource amounts are very close to the TRL values, and the resulting HLH average energy amount is very small compared to the average peak value with a resulting CDQ HLH load factor for that month of 0.69 percent. October suffers from similar issues, though not so obviously imbalanced as the April, May, and June results.

When applying adjusted FY 2010 TRL data to the adjusted CDQ load factors, the results were extraordinary in these same four months. In April, May, and June of 2010, average HLH energy appears as a negative number and resulting CDQs are zero. The CDQ for October also was unusually high as a result of the calculated 35.14 percent CDQ load factor. These results led BPA to conclude that it would be unreasonable to apply the CDQ tests to Pend Oreille data or to use Pend Oreille results in tests applied to the data of other customers.

Also, Pend Oreille will purchase power in its CHWM contract under the Slice and Block (without Shaping Capacity) product for its Regional Dialogue service. Therefore, Pend Oreille's CDQs will only become relevant if Pend Oreille chooses to switch to the Load Following or Block with Shaping Capacity products during the later part of the RD contract term.

8. Redo the weather normalization for Centralia, affecting CDQ. (Centralia)

Response: BPA addressed weather normalization of load in the CHWM process and this comment was addressed in that process.

9. The City of Ellensburg formally objects to adjusting the CHWM and CDQ of the City of Ellensburg to remove load that was served by the City during the time period used to establish the CHWM and CDQ. (Ellensburg)

Response: The comment was addressed in the CHWM process.

Adjusting CDQ Reductions; Conclusion and Reasoning

After considering all comments and testing various alternative adjustments for alleviating some portion of FY 2010 less-than-zero Billing Determinants, BPA settled on a methodology that combined portions of the various proposals. The final approach, developed to minimize impacts to the six customers whose CDQs will be reduced, is described below:

In each month for which the six customers have FY 2010 Demand Billing Determinants of less than zero, there are other customers who are not receiving CDQ reductions that also have Demand Billing Determinant 'headroom'. BPA's filtering mechanisms determined that those other customers had anomaly or non-recurring less-than-zero Billing Determinants. In order not to treat the six more harshly than the others, BPA will provide each with Non-Recurrence Adjustments to their FY 2010 CSPs equal to the median percent, by month, of negative CSP retained by the other customers in that same month.

This approach alleviates some amount of CDQ reduction for each of the six in each month for which they receive an adjustment, and zeros out adjustments in some months for some of the six.

BPA concludes that this is the proper approach because:

> This approach responded to customer comments requesting that they not be treated more harshly than other customers who were not receiving reductions to their CDQ;
>
> Support, and no opposition, was expressed for allowing customers to retain non-recurring and some recurring 'headroom'.[10]
>
> The approach treats customers with five or more months of less-than-zero FY 2010 Demand Billing Determinants similar to customers with the most favorable Demand Billing Determinant results that did not receive CDQ reductions (i.e., most like customers with the largest percent of non-recurring 'headroom' who did not receive reductions).
>
> While the approach removes CDQ headroom for recurring load changes, it does not penalize or provide a disincentive to customers whose HLH load factors increase, which is an improvement for the customer and BPA. This lack of disincentive is consistent with the intent of the TRM, to provide price signals to minimize or reduce Demand Billing.

[10] This approach does not leave "CDQ headroom" but it does adjust the FY 2010 CSPs in a manner that removes 'headroom'.

Attachment 1
Example CDQ Load Factors

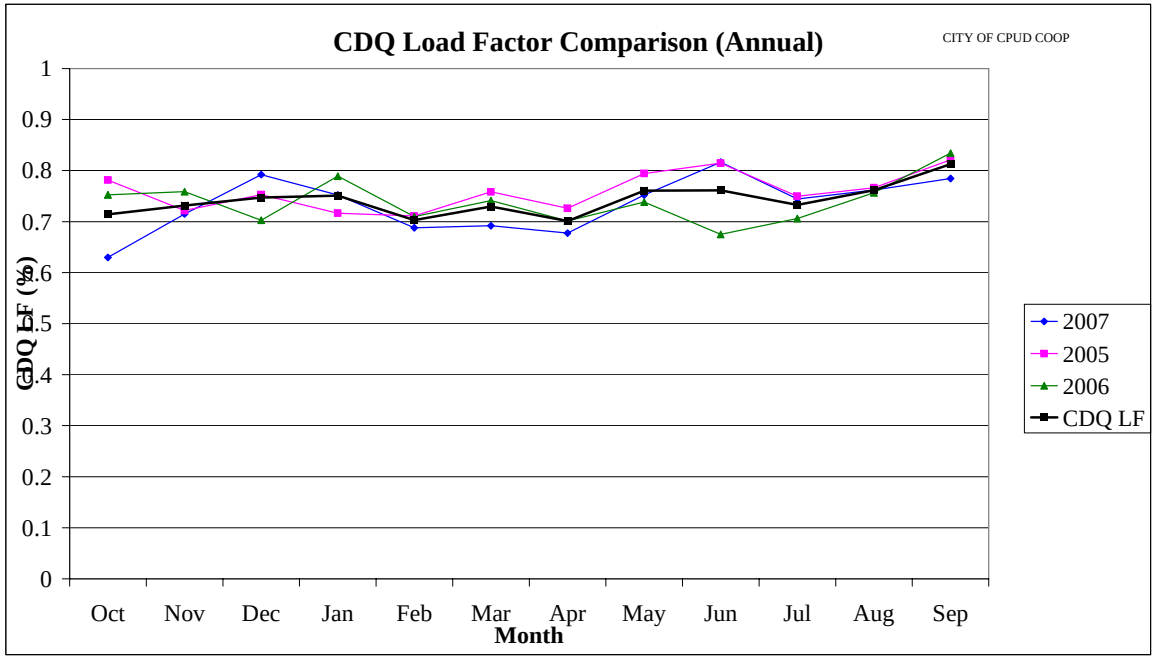
Customer Name	CITY OF CLEVELAND PUD COOP
Customer Number	90099
Source Spreadsheet:	CDQ_061109a.xls

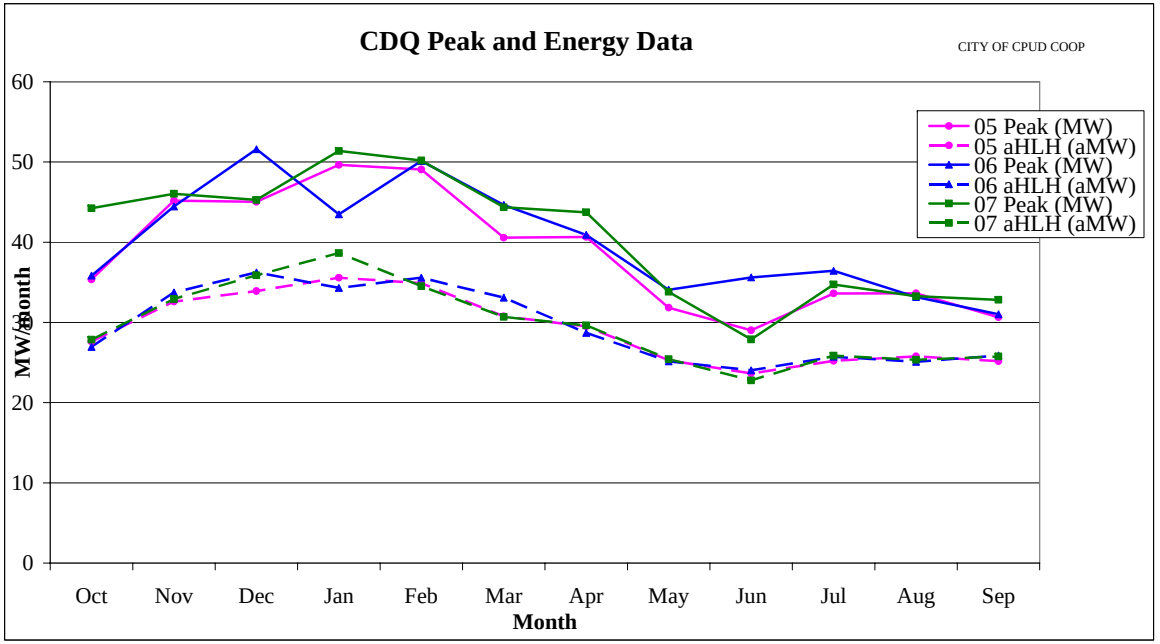
	Fiscal Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Peak (MW)	2005	35.350	45.176	45.043	49.642	49.064	40.557	40.650	31.834	29.023	33.627	33.635	30.645
aHLH (aMW)	2005	27.619	32.607	33.908	35.565	34.882	30.761	29.512	25.283	23.644	25.206	25.777	25.162
CDQ %	2005	78.13%	72.18%	75.28%	71.64%	71.09%	75.85%	72.60%	79.42%	81.47%	74.96%	76.64%	82.11%
Peak	2006	35.834	44.462	51.589	43.469	50.128	44.641	40.921	34.067	35.611	36.427	33.165	31.010
HLH	2006	26.958	33.734	36.242	34.300	35.576	33.083	28.699	25.154	24.034	25.716	25.085	25.874
CDQ %	2006	75.23%	75.87%	70.25%	78.91%	70.97%	74.11%	70.13%	73.84%	67.49%	70.59%	75.64%	83.44%
Peak	2007	44.234	46.043	45.277	51.384	50.179	44.358	43.728	33.810	27.879	34.729	33.265	32.823
HLH	2007	27.852	32.916	35.869	38.645	34.514	30.693	29.620	25.433	22.760	25.849	25.351	25.749
CDQ %	2007	62.97%	71.49%	79.22%	75.21%	68.78%	69.19%	67.74%	75.22%	81.64%	74.43%	76.21%	78.45%

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
CDQ %	**Min**	62.97%	71.49%	70.25%	71.64%	68.78%	69.19%	67.74%	73.84%	67.49%	70.59%	75.64%	78.45%
CDQ %	**Max**	78.13%	75.87%	79.22%	78.91%	71.09%	75.85%	72.60%	79.42%	81.64%	74.96%	76.64%	83.44%
CDQ %	**Avg of 3 %s**	72.11%	73.18%	74.92%	75.25%	70.28%	73.05%	70.16%	76.16%	76.87%	73.33%	76.16%	81.33%
CDQ %	**Range**	15.16%	4.38%	8.97%	7.27%	2.31%	6.65%	4.86%	5.58%	14.15%	4.36%	1.00%	4.99%

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
CDQ %	**CDQ LF**	**71.42%**	**73.16%**	**74.71%**	**75.10%**	**70.28%**	**72.97%**	**70.10%**	**76.09%**	**76.14%**	**73.27%**	**76.16%**	**81.27%**
Resources Assumed (aMW)		2.58	2.94	3.80	3.14	2.48	1.87	1.21	2.59	3.71	3.00	3.25	2.29
	Mo No	10	11	12	1	2	3	4	5	6	7	8	9
	Index05	3	4	5	6	7	8	9	10	11	12	13	14
	Index06	15	16	17	18	19	20	21	22	23	24	25	26
	Index07	27	28	29	30	31	32	33	34	35	36	37	38

	Fiscal Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
HLH Hours	2005	416	416	432	416	384	432	416	416	416	416	432	416
HLH Hours	2006	416	416	432	416	384	432	400	432	416	416	432	416
HLH Hours	2007	416	400	400	416	384	432	400	416	416	400	432	384
kWh	2005	11489304	13564464	14648354	14794927	13394501	13288545	12276979	10517608	9836018	10485562	11135492	10467314
kWh	2006	11214669	14033492	15656331	14268933	13661122	14292047	11479711	10866349	9998210	10697670	10836821	10763442
kWh	2007	11586586	13166492	14347493	16076214	13253185	13259296	11847991	10580281	9468137	10339777	10951781	9887701


CDQ Load Factor Comparison (Annual)
CITY OF CPUD COOP
CDQ LF (%)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Month
2007
2005
2006
CDQ LF


CDQ Peak and Energy Data
CITY OF CPUD COOP
MW/Month
60
50
40
30
20
10
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Month
05 Peak (MW)
05 aHLH (aMW)
06 Peak (MW)
06 aHLH (aMW)
07 Peak (MW)
07 aHLH (aMW)

Attachment 2
Example CDQ Calculations

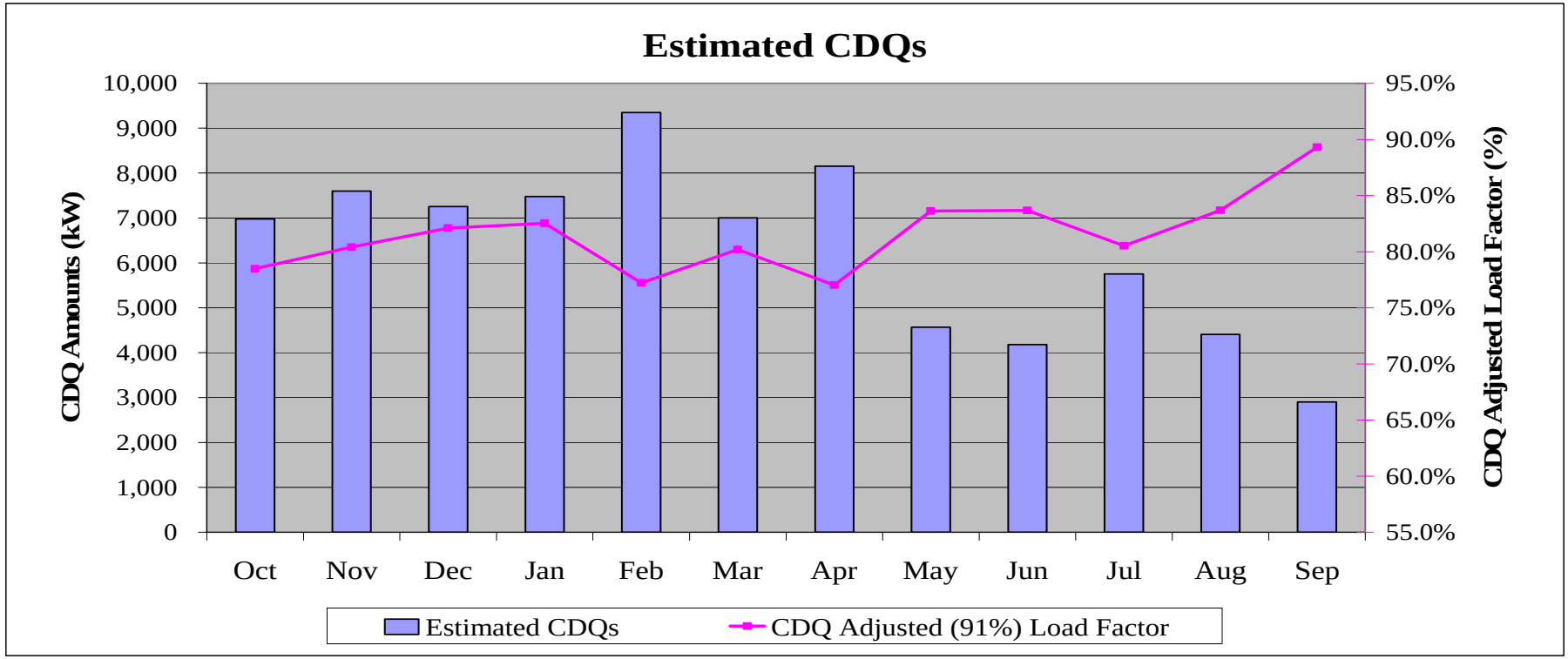
Estimated CDQ Calculation

Customer Name CITY OF CLEVELAND PUD COOP
BES Number 90099

Line:			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1.	**adj HLH (kWh)**	FY10	12,103,209	13,099,024	15,428,194	15,389,031	13,126,305	13,052,880	11,881,162	10,368,467	10,454,579	11,146,011	10,754,175	10,614,106
2.	**"Existing Resources" (akW)**	FY12	2,577	2,935	3,800	3,140	2,475	1,868	1,213	2,594	3,714	3,000	3,245	2,292
3.	**adj net aHLH (akW)**		25,440	31,177	33,287	35,333	31,708	28,347	27,348	23,327	21,417	23,793	22,606	24,244
4.	**CDQ LF**		71.42%	73.16%	74.71%	75.10%	70.28%	72.97%	70.10%	76.09%	76.14%	73.27%	76.16%	81.27%
5.	**CDQ adj LF**		78.48%	80.40%	82.10%	82.53%	77.23%	80.19%	77.03%	83.62%	83.67%	80.52%	83.69%	89.31%
6.	**CDQ amounts (kW)**		**6,976**	**7,600**	**7,257**	**7,479**	**9,349**	**7,003**	**8,155**	**4,570**	**4,180**	**5,756**	**4,406**	**2,902**
	FY10 HLH hours		432	384	416	400	384	432	416	400	416	416	416	400

Line Notes:

1. Actual FY2010 HLH weather-normalized energy (also includes adjustments for irrigation normalization) = kWh loads for Hours Ending 0700 - 2200, Mon -Sat, except NERC Holidays
2. "Existing Resources" = customer's TRM Attachment C Resources, Exhibit A HLH amounts for FY2012 (in akW)
3. $aHLH_{2010}$ = average HLH weather-adjusted Measured FY2010 loads less Resources (in akW)
4. LoadFactor = (average of FY05 - FY07 HLH load factors)
5. adjLoadFac = (average of FY05 - FY07 HLH load factors) divided by 0.91, (adjLoadFac will be limited so that it does not exceed 100%)
6. CDQ = ($aHLH_{2010}$ divided by adjLoadFac) minus $aHLH_{2010}$ (CDQ will be limited so that it does not fall below 0)



Attachment 3
CDQ Tests

The two tests for CDQs are the following:

Before the CDQs are finalized, BPA will determine whether the Demand Charge Billing Determinant for any Customer for each month of FY 2010, using the actual CSP for each such month and the monthly CDQ calculated in accordance with this section 5.3.5.2, is equal to zero or will exceed two times the average of all customers' Demand Charge Billing Determinants as a percentage of their CSP for such month. If so, BPA will determine whether 1) there was a discrete event beyond the control of the customer that increased the Demand Charge Billing Determinant; 2) the size of the Billing Determinant is likely to recur in the future; and 3) the recalculation of the adjusted HLH load factor and CDQ will not materially frustrate BPA's policy objective of having all customers with HLH load factors that are less than 100 percent face the marginal cost of capacity.

If BPA concludes that the calculated Demand Charge Billing Determinant is not an anomaly and is likely to recur, then BPA will adjust the CDQ for such month as follows. If the initially calculated CDQ produced a calculated Demand Charge Billing Determinant that exceeds two times the average of all customers' Demand Charge Billing Determinants as a percentage of their CSPs for such month, then BPA will establish the CDQ for such month for such Customer so that the calculated Demand Charge Billing Determinant equals two times the average of all customers' Demand Charge Billing Determinants as a percentage of their CSPs for such month. If the initially calculated CDQ produced a calculated Demand Charge Billing Determinant equal to zero percent of the Customer's CSP for such month, BPA will establish the CDQ for such month at the highest number that will produce a calculated Demand Charge Billing Determinant of zero. That is, BPA will remove excess CDQ headroom only, without establishing the CDQ so as to expose the Customer to a Demand Charge in such month.

TRM, A-03, September 2009
Section 5.3.5.2., page 71

Attachment 4
Comments Received:

Langer/Northern Wasco PUD.
To whom it may concern: Thank you for the opportunity to comment on the proposed CDQ Reduction. 1. In identifying customers for proposed CDQ reductions, a Billing Determinant of zero percent had to occur greater than 4 times based on FY2010 actuals for monthly billing. A customer that had a Billing Determinant of zero percent occur 4 times or less based on FY2010 actuals for monthly billing, is not subject to any CDQ reductions. The customers that have proposed CDQ reductions may end up with less “headroom” than other customers based on the threshold number. 2. All proposed CDQ reductions fall on the majority of two utilities at 88%. If Salmon is able to keep their CDQ amount, 83% will fall on one, Northern Wasco. 3. It was mentioned twice in the March 17th meeting about not reducing any CDQ amounts since it was a small amount. There were no opposition voiced to these comments. 4. There is no guarantee that the load factor and operating characteristics for any customer will stay the same for the remainder of the contract, 17 years. Proposed CDQ reductions based off of one year of test data is extreme, since there is no adjustment allowed for the final CDQ numbers. 5. Please refer to Salmon River Electric Coop, Inc comment, CHWM110003, for other comments on CDQ In taking all matters in account, I propose that you do not reduce any customers CDQ. Paul Titus, PE Director of Engineering Northern Wasco County PUD 541-298-3313

Dizes/Salmon River Electric Cooperative
I appreciate BPA's diligence in trying to follow the TRM especially as it relates to section 5.3.5.2 Calculating CDQs. I have two concerns with the process however. The first concern is the language in the TRM section 5.3.5.2 which states "That is, BPA will remove excess CDQ headroom only, without establishing the CDQ so as to expose the Customer to a Demand Charge in such month." I interpret that to mean that there won't be a demand charge but head room will be removed. It seems that sentence could be interpreted to mean that the CDQ would be adjusted to expose the Customer to a Demand Charge. This needs to be clarified. My next concern is that through the filtering process some utilities might have had headroom removed and be worse off than utilities that didn't have to go through the adjustment process. Said another way we have less headroom than a utility that was not adjusted. My final comment is that if BPA is going to go forward with the filtering process I favor the annual filter. Thank you for the opportunity to comment.

Brawley/PNGC Power
PNGC has reviewed the summary information provided by BPA on the CDQs and the proposed "CDQ filter" approach. The information provided by BPA seems like a reasonable approach for meeting the requirement of Section 5.3.5.2 of the TRM. We have not tried to devise alternative methods to accomplish the requirements of this section of the TRM. BPA's analysis is through and complex. However, we believe the application of the annual test proposed by BPA seems less harsh in practice and we favor that approach. Under BPA's approach neither PNGC Power and nor its members under our the regional dialogue contract are affected by the CDQ tests proposed by BPA. One of our currrent members, Salmon River Electric is affected and is also submitting comments. Finally, in BPA's analysis it is unclear why Pend Oreille PUD was exempt from the analysis.

Rozanski/McMinnville Water and Light; view attachment

McMinnville Water & Light ("McMinnville") appreciates the opportunity to comment on BPA's proposed methodology and calculation of preliminary monthly Contract Demand Quantity ("CDQ") values pursuant to Section 5.3.5.2 of the Tiered Rate Methodology ("TRM").

Background

Section 5.3.5.2 of theTRM requires BPA, before the CDQs are finalized, to determine whether the Demand Charge Billing Determinant for any customer for each month of 2010 is equal to zero or will exceed two times the average of all customers' Demand Charge Billing Determinants as a percentage of their Customer's System Peak ("CSP") for such month. In the event either of these conditions is identified, then the TRM requires BPA to adjust the CDQ for such month if BPA determines (1) there was a discrete event beyond the control of the customer that increased the Demand Charge Billing Determinant; (2) the result is likely to recur in the future; and (3) adjustment of the CDQ would not materially frustrate the BPA policy objective of having customers face the marginal cost of capacity.

BPA is requesting comments on the filtering tests developed to make these determinations and the resulting proposed CDQ adjustments.

Comments

McMinnville generally supports the proposed approach taken by BPA to implement this important provision of the TRM. McMinnville has a particular interest in the TRM's adjustment of excessive Demand Charge Billing Determinants. McMinnville's large industrial customer has experienced a significant reduction in load during the recent economic recession. The resulting increase in Demand Charge Billing Determinants, in addition to the estimated 8.5% increase in BPA power costs, would have a severe impact on the local economy[1].

McMinnville acknowledges the difficulty in developing a filtering test to fairly identify customers exposed to excessive Demand Charge Billing Determinants. The proposed tests developed by BPA and the resulting proposed CDQ adjustments, while not perfect, appear to McMinnville to be reasonable and appropriate.

For customers such as McMinnville with a calculated Demand Charge Billing Determinant that exceeds two times the average of all customers' Demand Charge Billing Determinants as a percentage of their CSPs in a month, the TRM requires BPA to adjust the CDQ for such customer so that the calculated Demand Charge Billing Determinant equals two times the average of all customers' Demand Charge Billing Determinants as a percentage of their CSPs for such month. This methodology provides only partial relief to customers that are exposed to excessive marginal demand costs resulting from a change in load profile. McMinnville will still be exposed to marginal demand charges that are double the average for all customers in the affected months which will pose an extreme hardship. While strong arguments could be made to further reduce the marginal demand charges to equal the average of all customers, McMinnville

[1] McMinnville has been granted a Provisional CHWM for this loss of load. Retention of the Provisional CHWM is, however, not assured. Therefore, appropriate adjustment of the Demand Charge Billing Determinant is even more important.

believes it is important for BPA to adhere to the directives and language of the TRM in implementing its provisions.

Conclusion

BPA's proposed filtering tests and resulting proposed CDQ adjustments are reasonable and consistent with the provisions of the TRM. McMinnville appreciates BPA's efforts in this regard. The proposed adjustments will provide a measure of rate relief to McMinnville's industrial customers that are experiencing an extremely challenging operating environment

Related Comments From the CHWM Comment Site:

Dizes/Salmon River Electric Cooperative, Inc.

To Whom It May Concern: I appreciate the opportunity to comment on the published CHWM and CDQ's. My comment relates more directly to the CDQ with some spill over into the CHWM. I am concerned with the filtering process that has been described to me for addressing section 5.3.5.2 of the TRM. Our utility is not receiving an adequate CHWM and will be subject to power costs at Tier 2 rates because of the methodology adopted for establishing the CHWM. This has been difficult to accept considering we are a slow to non-growing utilty and that historic load will be served at Tier 2 rates early in the contract. Our one large industrial load (2/3 of our total load) is an anomally in and of itself and the some procedural items in the Tiered Rates Methodology did not fit how our industrial company operates. I understand that a single methodology does not probably exist that would accomodate every utility. I don't have a solution as to how to levelize the amounts of demand on the margin each utility is subject to but in light of the small amount of load that is represented by those utilities that would have their CDQ reduced, I would propose that you not reduce any customers CDQ. To have somewhat of a positive out come on the CDQ would help me to accept serving historic load under Tier 2 rates. Thank you for your consideration.

Leach/City of Centralia

I have finally gotten a moment to take a look at the 2_WN_Centralia.xls file.

Please take a look at the formulas in K1763..AI1854 on the METERED DATA. These figures represent the TRL hourly metered data for July 1, 2009-Sept. 30, 2009. These are the first three months that the Yelm meter was being read by BPA. We had discussed the errors that these months contained during my review in January 2011.

I can see that you made an attempt to correct the errors, however, now there are two sets of Yelm numbers included in the hourly totals. There are 2 things that need to be done to fix this and make the hourly data for these three months comparable to that beginning with Oct. 1, 2009.

1.) The hourly data included in the BPA bills for Yelm needs to be filled in at DT1763..EQ1854. The monthly totals of this data needs to balance to what BPA used in the load variance part of our power bills for each of these three months, which means that the numbers for Yelm need to stated NET of the billing LOSS FACTORS. These CANNOT just be what BPA metered for Yelm.

2.) The formulas in K1763..AIJ1854 need to include a subtraction of the corresponding hourly amount in DT1763..EQ1854 and replace this with the customer provided totals which are already included in the formulas. That gets rid of the doubling of the Yelm figures.

I would appreciate it if you could redo the weather normalization that includes these months and update these figures for CHWM and CDQ purposes with the BPA departments involved.

Thank you for all the hard work you have done with this for us.

Randi

Attachment 4 (Cont.)

Public Utility District #1

Of Jefferson County

March 25, 2011

Bonneville Power Agency
P.O. Box 14428
Portland, OR 97293-4428

SUBJECT: CHWM

Jefferson County PUD appreciates this opportunity to comment on the determination of its CHWM. The process that resulted in that determination was thorough and appears to have resulted in a fair estimation of our customer's demand once we start providing electric service to the citizens of Jefferson County. JPUD's CDQ was determined during the same time pursuant to Section 5.3.5.3, Calculating New Public's CDQs, of the TRM. We feel that that process also resulted in a fair estimation of JPUD's CDQ.

We appreciate the inclusion of the load for Port Townsend Paper's Old Corrugated Container facility in JPUD's CHWM. Port Townsend Paper is an important member of the Jefferson County community and we are pleased to be able to serve them. It is our hope that some way can be found for JPUD to be able to serve Port Townsend Paper's entire load in a similar manner.

James G. Parker, PE
Manager

Titus/City of Ellensburg

During the time frame when the CHWM was calculated, the City of Ellensburg was wheeling power to customers of Kittitas County PUD. Thus the load associated with these customers was credited to the City. In discussions with the PUD and BPA, informal agreement was reached as to the KWH & KW of wheeled load and CHWM calculations were run for both utilities with and without the wheeled load. It was the City's understanding that BPA would require a formal agreement between the two utilities before a final transfer of CHWM would occur. However, to date, an agreement has not been reached that the CHWM & CDQ associated with the wheeled customers would be transferred to the utility actually providing service to the customers during the life of the TRM contracts. The TRM contract provides for this in cases where annexations occur. Absent this agreement, the City of Ellensburg formally objects to adjusting the CHWM & CDQ of the City of Ellensburg to remove load that was served by the City during the time period used to establish the CHWM & CDQ.

CHWM110017 - Workshop comments and notes
Notes and comments from the CHWM Workshop on March 17, 2011.

Questions about CDQ

Everyone wanted more information and additional time to take it all in and then have another workshop.

Salmon River – expressed concerns with the CDQ filtering process for its industrial customer since with the CHWM calculations the outcome was not favorable to it. Concerned the demand charge will also penalize them.

Jeff Davis, Wasco – Wasco rightly deserves a CDQ adjustment to account for the changes from all of the wind development on its system. In two years Wasco's load factor went from 70% to 60%. Wasco now has 1100amw of wind at 28% load factor.

Lewis – why are we penalizing the customers that are in the "green?" These are small customers with small amounts and perhaps we should just leave them.

Geoff Carr – wanted to know where the TRM stopped and the filtering implementation began.

Wallace Roghair – we could adjust everyone but that is probably not the intent of the TRM.

Daniel Fisher – tests are not developed to frustrate the intent of the TRM. Customers should still face the marginal costs of demand.

Northern Wasco – Requested to see more of the analysis. Wanted to know what customers trigger which months.

Lewis – Wanted to know why the filter points are where they are.

Doug Brawley, PNGC – requested more analysis and a follow-up workshop after he had time to digest everything. Asked whether this CDQ discussion was part of rate case and was told no.

Anna Miles, Snohomish – Wanted to know how this all interacted with provisional CHWMs.

Daniel – it might, but that is in the future and this needs to be addressed now as per the TRM

Anna – this is possibly an "unintended consequence"

Pend Oreille – wanted to make a formal comment that they had CHWM issues with their loads in April.