

---

**Report of the Division of Public Utilities on  
Workgroups I-II:  
Load Research and Peak-Hour Forecasting**

---

---

**Docket No. 09-035-23  
November 30, 2010**

---

**Report of the Division of Public Utilities on Workgroups I-II:  
Load Research and Peak-Hour Forecasting  
Docket No. 09-035-23  
November 30, 2010**

**Executive Summary**

The Utah Public Service Commission (Commission) directed the Division of Public Utilities to form workgroups to examine two unresolved issues from the 2009 PacifiCorp rate case. A combined workgroup examined the reliability of load sample data and the discrepancy between the sum of class and jurisdictional peak load forecasts.

The workgroup organized the issues into five topics. These topics, along with the party (in parentheses) who initially raised the issue are summarized as follows:

1. whether the Company's load research program meets the PURPA standard (DPU);
2. the variability and imprecision in the irrigation class load forecasts (the Office);
3. whether the load research sample design is out of date (UIEC);
4. the accuracy of the current adjustment for weather in load data (UIEC);
5. class vs. jurisdictional peaks and calibration issues (UIEC and UAE).

The workgroup reached consensus or partial agreement on a number of topics, including the recent improvement in load sampling data, expectations of future load sampling programs, and the problematic condition of irrigation load data. Most parties believe that calibration may be useful as an interim approach for mitigating jurisdictional and sum of class load discrepancies. There was general support in the workgroup for some sort of load weather normalization, but the group did not reach consensus on how that normalization was to be achieved.

With respect to whether the Company's load research program meets the "PURPA standard" the Division concluded that while the Company had begun to rotate in new load research samples, most of the data used in the rate case were from samples established in the early 1990s that the Division considers to be out of date. The results of the load research did not meet the "PURPA standard" as indicated in the Division's direct testimony in this Docket. The

Company updated the sample in one rate schedule in 2006 and the other three rate schedules in 2008. However, data from the 2008 samples were not included in the rate case. The Company has implemented a program to update its load research data on a 5-year rotation schedule. Under its current proposed rotation schedule, a complete set of the new rotation of load research data will not be available until 2017. The Division and other parties believe this is unacceptable and are proposing an acceleration of the new rotation, along with other changes proposed in this workgroup to the sampling design, which would provide a complete set of new load research sample data by 2014.

It is important to note that the Company representatives believe that a Commission Order to increase the Company's spending to accelerate the meter rotation program will be necessary in order to assure that the recommended accelerated meter replacement program is implemented. The Division recommends that the Commission issue such an Order, if not in this Docket then in another appropriate Docket wherein the accelerated meter rotation may begin in a timely manner, consistent with the recommended meter replacement program.

The issue of the imprecision of the irrigation load research data was not resolved. Based upon the discussion in the workgroup, the Division supports including a 5-year rolling average of irrigation load data to supplement the on-going load research in the next rate case.

With the general support of most of the parties, the Division is proposing that a program of calibration be implemented as an interim solution to the sum of class cost of service and jurisdictional load differences. This calibration program should continue at least until the new load research data are available and can be evaluated, presumably in 2014 with acceleration. The Office objects to the calibration proposal.

### **Participants.**

The meetings were well attended, with spirited discussions. Participants included representatives of PacifiCorp (Company), the Division of Public Utilities (Division), the Office of Consumer Services (OCS or the Office), the Utah Energy Users Association (UAE), the Utah

Industrial Energy Consumers (UIEC), U.S. Magnesium, Salt Lake CAP, and Utah Clean Energy. Commission staff attended the last couple of meetings as well.

## **Introduction and Background**

The Utah Public Service Commission (Commission) February 18, 2010 PacifiCorp 2009 General Rate Case Order directed the creation of two workgroups, which were to cover two unresolved issues from the 2009 rate case: 1) the reliability of load sample data; and 2) the discrepancy between the sum of class and jurisdictional peak load forecasts. The Commission Order directed the Utah Division of Public Utilities (Division) to form workgroups to examine the issues.

The reliability of sample load research data has been challenged in recent rate cases by various parties as inaccurate, particularly when compared to the other classes for which a census is conducted, i.e. those classes with demand meters. The sampled classes are residential (Schedule 1), small commercial (Schedule 23), large commercial (Schedule 6) and irrigation customers (Schedule 10). Large industrial customers (Schedules 8 and 9) are served on interval meters and therefore are 100 percent sampled, i.e. a census is taken. However, the Company and Office point out that the “census” data are not without sources of error and variability, and it is inappropriate to assign all of the error to the sampled data.

The parties disagree about the significance of the discrepancy between the sum of class loads and jurisdictional peak load forecasts. The Company uses different methods to forecast retail class and jurisdictional loads. The concern is the reasonableness of calibration or adjustment of forecasts, and whether or not the peak load forecasts are or should be weather normalized. The most recent COS loads are not weather normalized, however the JAM peak load estimates are based on weather-adjusted, trend-line regressions by hour. The JAM Utah load also includes specific customers excluded from the COS, as well as losses that may be attributable to wholesale transactions and transfers unrelated to Utah consumption. The current COS peak load estimates are developed from the 2008 estimated load shapes, scaled up or down to match forecasted class energy sales.

The first meeting of the two workgroups established a consensus that there was sufficient common ground between the load sampling and the forecasting workgroups to combine the two workgroups into one workgroup, which was renamed Workgroups I-II, “Load Research and Peak-Hour Forecasting Methods.” Thus, joint meeting dates and times were adopted. This meeting also included a broad discussion of the scope and direction of the combined workgroup, and a prioritization of the issues.

In addition to these two workgroups, the Commission also directed that the Division form a third workgroup on allocation factors. This workgroup became Workgroup III and covered “Consistency of Allocation Factors Between JAM and Class COS.”

Initially in Workgroups I-II, UIEC proposed to examine the issue of how many coincident peaks to use in the cost of service analysis. The Company and Office responded that this was beyond the scope of the tasks charged to the workgroup. After a discussion in the initial meeting most parties generally agreed that if the number of coincident peaks issue was a relevant topic, it should be examined in Workgroup III. UIEC agreed with this latter concept but reserved the right to bring it up again in Workgroups I-II if Workgroup III was unable to resolve the issue. This issue was not brought up again in Workgroups I-II, and remains unresolved.

The Division noted there was more discussion and controversy on the scope of the sum of class loads and jurisdictional loads issue than there had been on the load sampling issue. One party suggested that the scope should be narrower and that the Commission did not contemplate in its Order the opening up of issues that it had previously ruled on. Another party argued that it was up to the workgroup participants to define the scope and that it was reasonable to study related issues that may be controversial in order to provide the Commission with good feedback. The consensus was to move toward narrowing the issues rather than expansion.

### **Schedule of Meetings.**

One of the first critical items for discussion was the timing, number, and length of workgroup meetings. A schedule of monthly meetings was adopted. The meetings were

scheduled for the mornings of May 12, June 3, July 8, August 12, September 16, October 21, and November 10. Utah Workgroup III, dedicated to “Consistency of Allocation Factors Between JAM and Class COS,” was scheduled for the afternoon of the same days.

The first meeting on May 12 narrowed the issues that were going to be given priority. The second meeting on June 3 included presentations by Scott Thornton of PacifiCorp on load sampling and Peter Eelkema of PacifiCorp on load forecasting. The third meeting on July 8 wrapped up the Thornton presentation. Dr. Eelkema also provided a flow chart on the Company’s peak load forecasting model. The fourth and fifth meetings in August and September were devoted to providing the various parties an opportunity to present their issues and concerns. The fourth meeting on August 12 provided a forum for UIEC to bring forward and discuss its issues and concerns that primarily related to whether or not the Company was properly weather normalizing its load forecasting data, and the significance of the gap between the jurisdictional (i.e. Utah) forecasted loads with the sum of the forecasted class loads.

The fifth meeting on September 16 included presentations by the Division and the Office. The Division’s presentation, in particular, identified the critical issues and its draft proposal for workgroup report content. The Office presented a slideshow that addressed its issues and concerns. The Office’s concerns included possible causes of a gap between the Utah jurisdictional and sum of Utah class loads, the inadequacy of load research data, the unreliability of irrigation load research data and the variability of irrigation loads from year to year, and the lack of weather normalized retail class energy and peak forecasts. The Division emailed a report outline in preparation for the sixth meeting on October 21, which was devoted to a discussion of the report outline. At the October 21, the Division stated that it intended to prepare a draft report and circulate it before the seventh meeting on November 10. The November 10 meeting was devoted to discussing the Division’s draft report and arranging the logistics of final report review leading up to November 30 deadline for filing the report with the Commission.

### **Relevant Issues.**

The original issues list and its modifications were prepared in late May in preparation for the June meeting. At the first meeting on May 12, the Division was charged with compiling an

initial issues list from the Commission Order. The Division's initial issues list was circulated before the second meeting on June 3 for participants to comment on. The Office and UIEC, in particular, marked up the Division's initial issue list. Rather than consolidating the three issues lists (an initial list with two separate modifications), the Division decided to proceed with the three issues lists. The three issues lists are attached as Appendix A.

The detailed issues list was rearranged into five broad issues by the Division. These topics, along with the party (in parentheses) who initially raised the issue in the general rate, are summarized as follows:

1. whether the Company's load research program meets the PURPA standard (DPU);
2. the variability and imprecision in the irrigation class load forecasts (the Office);
3. whether the load research sample design is out of date (UIEC);
4. the accuracy of the current normalization for weather in load data (UIEC);
5. class vs. jurisdictional peaks and calibration issues (UIEC and UAE).

Because the proposed solutions for the first and third issue were essentially identical, the October 21 workgroup meeting agreed to combine the two issues, leaving four broad issues each of which are discussed herein. For each issue, areas of agreement are identified, and unresolved issues and concerns are highlighted.

### **Whether the Company's Load Research Program meets the "PURPA Standard"<sup>1</sup> and is the Load Research Sample Design out of date?**

The reasonableness of the Company's load research program and the "PURPA standard" was an issue raised by a Division consultant. Whether the load research sample design is out of date was an issue raised by UIEC. These two issues were combined after a discussion at the

---

<sup>1</sup> In the course of this workgroup, the Division discovered that there is no longer an official "PURPA standard." The standard was removed from PURPA about 1992. However, the industry continues to use the former standard as a quasi-industry standard that is still referred to as the "PURPA Standard." The "PURPA Standard" refers to load research samples being designed such that the sample means are within 10 percent of the true mean 90 percent of the time. The application of the "Standard," i.e. whether it was to be applied monthly, annually, within classes, etc., was never defined in PURPA and receives various applications throughout the country.

October 21 workgroup meeting. The two broad issues can be broken into smaller issues including,

1. Does the Company's Sample Meet the "PURPA Standard"?
2. The Company's Sample Rotation Schedule.

#### Does the Company's Sample Meet the "PURPA Standard"?

The Division concludes that data that were from sample designs created prior to 2006 were out of date and were not meeting the "PURPA Standard." The 2009 rate case used data from the 2006 sample revision and from earlier (i.e. out of date) samples. This was shown, for example, in the Division's testimony in that rate case.<sup>2</sup> However, it should be noted that since there was no "official" PURPA Standard in place at the time, the "PURPA Standard" was only a voluntary internal standard or guideline of the Company. From 2006 through 2008 the Company replaced its old samples with completely new samples. This entailed selecting a new set of sample customers for load research. The basic sample design philosophy and sample sizes of these new load studies were approximately equivalent to those that were previously in effect. The Division proposes replacing these new sample designs for the various rate schedules to comply with an estimated 90/10 result at the monthly level, as discussed further below. This proposal was generally accepted by the participants.

To be more precise, the proposal is to create a new sampling design so that, statistically, the "PURPA Standard" would be met on a monthly basis. Additional changes are recommended such as continuing to use a stratified sampling design but to increase the number of strata from 3 to 4. Further, at the suggestion of the Company, the design would be refined so that the "PURPA Standard" would be met in the 6 highest peak months, and for the annual class peak. The Company's suggestion is acceptable to the Division and seems to be acceptable to the other parties.

The exact increase in sample sizes for the various classes will be determined when the new sample design is created. Currently rate Schedule 1 (residential) customers have a sample size of 170, Schedule 6 (small commercial/industrial) customers 108, Schedule 23 (small

---

<sup>2</sup> See Jonathan Nunes, Direct Testimony, Docket No. 09-035-23.



commercial) customers 75, and 130 Irrigation customers are sampled. The assumption in the workgroup was that these samples would be increased by approximately 40 percent based upon preliminary estimates by Rocky Mountain Power’s Scott Thornton. These estimates are based on input data utilized from the previous load studies. New sample designs would be based on input data retrieved from the current load studies. However, the Company cautioned that the use of these more “up-to-date” input data may result in little to no increase in the proposed new sample designs.

The Company’s Sample Rotation Schedule.

The Company indicates that it had a sample rotation schedule already in place. After reviewing the schedule, the Division proposed an accelerated schedule that was generally supported by all of the participants except the Company. The Company objected that accelerating the schedule had two drawbacks: 1) it may upset the rotation schedule in other jurisdictions; and 2) it would disrupt the Company’s 10-year budget forecast. (The Company stated, however, that an accelerated sample begun in 2011 would generate 2012 data that could be available in 2013.)

The Company’s current rotation schedule is shown in the table below.

	Residential	Schedule 6	Schedule 23	Irrigation
2011				
2012				X
2013	X			
2014			X	
2015		X		
2016				
2017				
2018	X			X
2019			X	
2020		X		

As can be seen, under the Company’s current rotation schedule, complete data with the new samples will not be collected until about 2016 and would not be available until about 2017. The Division and the other parties (excluding the Company) believe this is an unacceptable delay. The Division initially proposed the following accelerated schedule for the next round of load sampling meter deployment.

	Residential	Schedule 6	Schedule 23	Irrigation
2011	X		X	
2012		X		X
2013				
2014				
2015				
2016	X		X	
2017		X		
2018				X
2019				

The Division’s proposal would ensure a complete set of new data is available by 2014. The workgroup discussed the rotation issue and concluded that the following revision to the Division’s proposal would be the most appropriate for the next rotation (the Company does not endorse this proposal). This schedule would also make a complete set of load research data using the expanded sample sizes available by 2014.

	Residential	Schedule 6	Schedule 23	Irrigation
2011	X	X		
2012			X	X
2013				
2014				
2015				
2016	X		X	
2017		X		
2018				X

The Company supported creating a sample design that focused primarily on the peak summer and winter months in order to meet the so-called “PURPA standard.” In particular, the Company was concerned with designing the sample to meet PURPA accuracy levels for that month in the historical period that contains the most variance or designing samples to ensure that three summer and three winter months meet design criteria. The Company favors the latter approach of examining the summer/winter peaks and the class peak for the year. The Division supports this suggestion by the Company. Any new sample should be designed to achieve “PURPA standard” accuracy levels for whichever of these seven peaks is identified as having the greatest variance.

UIEC suggested that the stratified sample strata should be adjusted to more exact Dalenius-Hodges break points and additional strata be considered. The Company has indicated that it is considering going from three to four strata. Upon reviewing the data, the Division believes that the sampling would likely give improved results if four strata were used especially when used in conjunction with the potential increase in sample sizes. The Division is somewhat indifferent to the issue of precise break points, as long as they are reasonably supported by the data. Using the precise breakpoints may only give a slight improvement in the within strata variance, and may be difficult to justify to non-statisticians.

There was agreement among the various parties, with one exception, that the short-term calibration solution (explained below) of loads provides acceptable load estimates, at least until such time that these load samples can be replaced in their accelerated rotation schedule.

For the accelerated meter rotation schedule, the Division provided \$100,000 as a rough estimate of the cost of additional meters. The Company revised this estimate and suggested \$150,000 in the first year followed by \$125,000 in the second year. None of the parties expressed concern about spending the money to do the larger sample sizes on an accelerated basis.

During 2006 to 2008 the Company formalized a sample rotation schedule to ensure that its load research studies were rotated in a timely manner in each jurisdiction. The Company had three goals: 1) each of its load research studies were to be replaced every 5 years; 2) no more than four load research studies would be replaced in any given year; and 3) no more than one load research study would be replaced in any given jurisdiction in a given year. If the three goals were satisfied, the full effect of the program would not be achieved until 2015. Planning, budget consistency, and not overloading any specific jurisdiction were the reasons behind the Company's goals.

After discussion, most of the workgroup agreed that the load research studies are no longer out of date. In 2008 in Utah the residential, Schedule 6, and Schedule 23 load research studies were replaced. At the current time, no Utah load research study is more than four years old. However, parties were still concerned about the accuracy and reliability of the load research data, which resulted in the discussion and recommendation for new sampling designs and an accelerated meter rotation schedule.

### **Variability of the Irrigation Class Loads.**

Variability of the irrigation class loads was an issue initially raised by the Office. Load research estimates for the irrigation customer class differ considerably from actual billing data. The Company's irrigation customer sample, unlike the residential and small commercial classes, is selected from actively irrigating customers, rather than from all irrigation customers. (The

Company has approximately 2,500 irrigation class customers.) An important reason for this is that a fairly sizable portion of irrigation customers -- over 10 percent -- are listed as active but will register zero electricity usage during an irrigation season. When the load research estimates are expanded by the total irrigation population, these initial base estimates will always be overstated, since this type of expansion assumes usage for the entire irrigation customer class. The Company's treatment for this is to adjust this initial load estimate down to the actual billed or forecast energy levels. Since there is a large difference between the initial load shape and the actual billing data, there is no good way to ascertain the accuracy of the resulting monthly load shapes or validate the estimated irrigation class peak.

All participants agreed that load research in this class is problematic. No clear solution was proposed. The Company argued for the need to continue load research (perhaps at current levels). A critical problem with the variability in the irrigation class is the comparison of the sample data to actual billing data.

While no workgroup consensus was found for the load sampling research data from the irrigation customer class, various parties maintained that the irrigation customer class should receive the system average price increase in the next rate case. While one suggestion was to discontinue irrigation load research, the Company still needs to estimate the contribution of the irrigation class to peaks. The Company has a clear objective on this issue and points out that it estimates that the irrigation cost of service, based upon 2008 data, is about 30 percent higher than collections under current rates. Therefore, on the basis of cost of service the Company objects to the proposal to just give irrigation customers average rate increases in the future and maintains that the current practice is the best available option. The Office claims that the problems with the irrigation load data makes the COS results for this customer class unreliable and the Company has no credible support for its claim that the irrigation class is contributing substantially less than the Company's average rate of return. The Office proposed exploring an alternative approach using an average (at least five years) of historical irrigation load data to make forecasts in future rate cases. The Division generally supports use of a 5-year moving average, on a trial basis, to supplement the forecasting of irrigation class loads

## **Weather Normalization of Peak Load Data.**

Weather adjustment for “peak-making” weather was an issue initially raised by UIEC. The workgroup was unable to arrive at a consensus on this issue.

While the Company weather normalizes loads at the jurisdictional level, it does not weather normalize loads at the class level. This issue may account for some of the gap between jurisdictional and class loads. The Company indicated that its current software does not support weather normalization of loads at the class level, but suggested that in about two years a software fix may be in place. The workgroup discussed the Company’s claim that its software did not support weather normalization. The Company claimed that it was working on acquiring additional software that would “fix” the weather normalization problem. However, the Company indicated that it would take two years to acquire, implement and test the required software.

Even assuming that the Company acquires new software that fixes the weather normalization problem in the next couple of years,, there would still need to be an interim method to address the issue. The workgroup discussed a proposal to normalize the load shapes using historical ratios of class coincident peak contribution to class monthly sales. The Division suggested that load shapes could be averaged over a 3- to 5-year time period. The Office indicated that weather normalization typically uses data for a longer time period (20 years). All parties recognized that time normalization over long periods using averages would not accurately capture trends in class load factors, to the extent that those have been changing. Interim solutions such as 3- or 5-year moving averages of load shape data met with lukewarm support by the workgroup. The Office supported using a period longer than five years and other parties (UIEC and UAE) concluded that calibration (see below) of a single year of class COS load data to JAM load data was a better interim solution.

As discussed below, calibration is proposed as an interim solution to the differences between the allocated Utah jurisdictional load and the sum of the class loads. Calibration alone may or may not be a satisfactory temporary solution. However the Division recommends the 5-year moving average as an interim solution for the weather normalization that, perhaps, would receive additional support from the calibration proposed below.

## **Class vs. Jurisdictional Peak and Calibration Issues.**

This issue arises from the fact that when class loads are summed, they do not add to the loads calculated from allocated jurisdictional totals. It is often assumed that because jurisdictional totals are metered that forecasts based on those data are necessarily accurate, and that the class loads that are the subject of sampling are the source of all of the error between the jurisdictional load and the sum of the class loads. The Company disputes this assessment. The Company indicates that while it is true that the sampled classes (see discussion above) are sources of error, the metered classes and the jurisdictional measurements are also not error free. (For example, meters are not always functioning properly, the data sets may not be as complete as assumed, and allocations of interstate transmission transactions may not be completely accurate.)

The sum of class loads vs. jurisdictional totals at the time of the coincident Company system peak was an issue initially raised by both UAE and UIEC. The Division proposed a calibration scheme in conjunction with updated sample designs as an interim fix. The calibration scheme proposed by the Division was intended as an interim fix, rather than as a long-term solution or an end in itself. The Division proposed a 2, 5, 10 percent calibration scheme; the Company responded with a 10, 5, 2 percent scheme. After a discussion most parties, including the Division, accepted the Company's improvement on the Division's initial proposal.

The calibration solution agreed to by most parties compares the sum of the base year class loads with test year jurisdictional totals. If the comparison between class and jurisdiction loads exceeds 10 percent on a monthly basis, the Company will investigate, determine the cause, and correct. (October 2009 is a recent example of a wide deviation.) If the monthly difference is between 5-10 percent, sampled classes will be adjusted such that the total of the class loads do not exceed a 5 percent difference with the jurisdictional loads. Finally, if the annual difference is in excess of 2 percent, the threshold for the monthly adjustments will be lowered to 4.5 percent, or, if necessary, to 4.0 percent. This process would only remain in place until the next round of meter samples is rotated in by 2017 under the Company's rotation scheme, and 2014 under the Division's proposed schedule. UAE supported the Division calibration scheme as an interim measure, but suggests tightening of monthly tolerances from 5 percent to 4 percent. The

Company's modification would support this, but make monthly tolerances flexible to meet overall 2 percent tolerance goal.

UIEC suggests that calibration should be done by examining each month and then treating each month the same. UIEC favors continuing calibration until actual load data are available for all classes. The Office objects to calibration between JAM and Class COS. The Office submits that other "fixes" suggested in the first four issues will narrow the differences. The Office believes that problems with the allocated jurisdictional loads, such as the possibility that wholesale sales are not accurately accounted for, needs correction before any calibration be considered.

The Office wants the Company to routinely provide additional data on Utah loads included in the JAM, but not in the Class COS study, and loss estimates related to wholesale transactions and interstate power transfers.

The Division supports the Company's modification of its proposal, which would seem to be supported by UAE. Exhibit 1 demonstrates, as an example, of the monthly variability and applies the proposed calibration methodology (as modified by the Company). In the First Step, the months that exceed 10 percent absolute difference (i.e. July and October) would be flagged for investigation. After the investigation, corrections would be made to bring those months more in line. For example, October's peak was significantly different than anticipated due to an unusually warm fall. (October peaked early due to "summer" cooling, rather than toward the end of the month due to "winter" heating). This resulted in a 38 percent variation. The procedure would be to investigate this month and correct the calculation to reflect better the situation (e.g. take the peak in the latter part of the month). Similarly, July would also be investigated and corrected. Then Step Two would be applied which would, through a calibrating adjustment, bring the months greater than 5 percent to 5 percent. After Step Two the overall annual difference would be calculated and if the difference were 2 percent or less, which it is in Exhibit 1, the process would be stopped.<sup>3</sup>

---

<sup>3</sup> In the event the annual difference were still greater than 2.0 percent, then a Step Three would be performed calibrating the monthly differences to no more than 4.5 percent and the annual difference re-determined. Successive steps at 4.0 percent, 3.5 percent, etc., monthly precision would be performed until the 2.0 percent annual precision level was achieved.



Exhibit 2, which is a page of the UIEC slide show (also attached) sets forth the same information as in Exhibit 1, but shows a value for the “Summation of Absolute Values of Differences” which is calculated to be about 7 percent off of the Utah Jurisdictional Allocation. UIEC recommends that the “Summation of Absolute Values of Differences” be used to base the calibration of the annual total to the 2.0 percent precision level. That is the monthly calibrations would be reduced until the sum of the months’ absolute deviations amounts to a 2.0 percent annual deviation or less. The Division does not support this recommendation. This would essentially require calibrating each month to nearly two percent. Such a high apparent precision for monthly deviations was not supported by any other party. Furthermore, this appears to assume that the Utah Jurisdictional Allocation has an innately higher level of accuracy than may be warranted given the Company’s discussion of possible errors in those data.

Exhibit 3, which is a slide from the OCS slideshow, presents the same information as Exhibit 2 but includes the omitted loads from the cost of service studies. The purpose of Exhibit 3 is to show that the addition of omitted loads changes the outcome of the Jurisdictional-Class gap analysis. Specifically, the overall annual difference changes from about -1 percent to +2 percent. The fact of changing the inputs naturally would change the results somewhat. What Exhibit 3 does not do is explain the gap which remains apparent from examining the monthly data.

The Division needs additional information regarding the Office’s concern that calibration might lead to unintended consequences. Mr. Chernick, representing the Office, argued that under the calibration method, months that were within 2 percent and close to “zero,” could be calibrated further away from “zero.” After discussion the Division concludes that given the uncertainties surrounding the whole process, such small movements away from “zero” are not material.

## Conclusions

There seems to be areas of agreement and at least partial consensus on other areas, i.e. a narrowing of the differences.

The Division concludes that much of the load research data used in the 2009 general rate case were from samples put in place prior to 2006, and were out of date. The Company has since implemented a plan to rotate the samples making the new sampling current. There is general agreement that the sample design needs to be modified to support monthly attainment of the “PURPA Standard.” We expect that this may result in increased sample sizes. The Company proposes implementing these new sample designs for the various classes during their next scheduled rotation. However, the Company rotation plan extends to 2015 (for Schedule 6) making the earliest that improved data would be available would be 2016 or 2017. This time period is unacceptable to the Division and the other parties. The Division proposes a one-time acceleration of the rotation schedule that would complete the next rotation in 2011. The Division supports giving the Company additional money to complete this rotation on an accelerated basis, which would approximate \$150,000 in 2011 and \$125,000 in 2012. None of the parties appear to oppose spending this money.

It is important to note that the Company representatives believe that a Commission Order to increase the Company’s spending to accelerate the meter rotation program will be necessary in order to assure that the accelerated program gets implemented. The Division recommends that the Commission issue such an Order, if not in this Docket then in another appropriate Docket wherein the accelerated meter rotation may timely begin.

In order to meet the “PURPA Standard” under the new sample design scenario, the Division supports increasing the number of strata from three to four, and it supports the Company’s proposal to create the sample design to target the peak winter and summer months plus the annual class peak.

There seems to be agreement that the irrigation class is problematic, but there is little agreement on a solution. The Division agrees with the Company that if irrigation rates are significantly below cost of service, then it would be inappropriate to just blindly put any future rate increases on “automatic pilot” indefinitely. However, the relative size of the irrigation class

suggests that resources should be limited to arrive at a “fix.” In this regard the Division would support a 5-year average irrigation load, perhaps adjusted for any discernable trends, for rate case use.

The Company believes that it will have a software fix for the weather normalization issue in about two years. Despite its flaws, and lack of consensus, the Division supports as an interim solution a 5-year average load shape.

As an interim solution before new load study data are available (under the Division’s proposed accelerated schedule, this should be complete no later than 2012), the Division supports calibrating the differences between the sum of Class COS and the JAM. The Division supports and recommends the Company’s modification to its original proposal for calibrating monthly differences to meet an overall annual tolerance of 2 percent.

## **Appendixes (not included in this document)**

Appendix A: Comments from UIEC

Appendix B: Comments from Rocky Mountain Power

Appendix C

Division Initial Issues List

OCS modification to issues list

UIEC modification to issues list

Appendix D

June 3, 2010 PowerPoint slideshows

“Load Research Status,” Scott Thornton, RMP

“Coincident Peak Load Forecasting Methodology,” Peter Eelkema, PacifiCorp

July 8, 2010 Handout

“Development of Utah Coincident Peak,” Peter Eelkema, PacifiCorp

August 12, 2010 PowerPoint slideshows

“Load Research and Peak-Hour Forecasting,” UIEC

September 16, 2010 PowerPoint slideshows

“DPU Issues and Concerns, Report Content,” DPU

“OCS Presentation for Working Groups I&II,” OCS