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April 17, 2020

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RE: UT Docket No. 17-035-61
Vote Solar 11th Set Data Request (1-7)

Please find enclosed Rocky Mountain Power's Responses to Vote Solar 11th Set Data Requests 11.1-11.3, 11.5, and 11.7. The remaining responses will be provided under separate cover. Also provided are Attachments Vote Solar 11-5-1 and 11-7 -(1-4).

If you have any questions, please call me at (801) 220-2823.

Sincerely,

____/s/____
Jana Saba
Manager, Regulation

Enclosures

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Vote Solar Data Request 11.1

Please refer to RMP's Response to Vote Solar 8th Set Data Request 8.4, and RMP's 1st Supplemental Response Vote Solar 8th Set Data Request 8.4, including Confidential Attachment 8.4, and Confidential Attachment 8.4 1st Supplemental.

- (1) Please provide an up to date and accurate version of Confidential Attachment 8.4.
- (2) Please provide an explanation for each of the following comparisons between Vote Solar Confidential Attachment 8.4, and Confidential Attachment 8.4 1st Supplemental:
 1. There were 31,434 unique customers in the original file, there are 31,187 unique customer numbers in the supplemental file (a decrease of 247);
 2. There were 353,999 rows in the original file but there are 377,294 observations in this supplemental file;
 3. Average deliveries and exports are similar between the previous version and the supplemental file; and
 4. Total deliveries and exports increased in the supplemental file but do not match the previous version when excluding the December observations.
- (3) Please provide an explanation for any changes between Vote Solar Confidential Attachment 8.4, Confidential Attachment 8.4 1st Supplemental, and the Confidential Attachment 8.4 produced in response to (1).

Response to Vote Solar Data Request 11.1

Please refer to the Company's 1st Supplemental response to Vote Solar Data Request 8.4, specifically Confidential Attachment Vote Solar 8.4 1st Supplemental which provides corrected data that replaces, and extends the Company's original response with monthly exports for Schedule 135 customers from January 1, 2015 through December 31, 2019.

- (1) Please refer to the Company's 1st Supplemental response to Vote Solar Data Request 8.4 which provides an up-to-date and accurate version of the Company's original response Vote Solar Data Request 8.4.
- (2) The Company interprets the request to be referencing differences between the data provided in the Company's 1st Supplemental response to Vote Solar Data Request 8.4 file "UTSCH135_2019_Monthly CONF" and the Company's original response to Vote Solar Data Request 8.4 file "UTSCH135_2019_Monthly CONF". Based on the foregoing interpretation, the Company responds as follows:

1. The Company's 1st Supplemental response to Vote Solar Data Request 8.4 included 1,443 additional recently connected customers and customers receiving aggregate credits, when compared to the Company's original response to Vote Solar Data Request 8.4. The additions to the Company's 1st Supplemental response to Vote Solar Data Request 8.4 were more than offset by 1,690 account closures and customers changing rate schedules.
 2. The Company's 1st Supplemental response to Vote Solar Data Request 8.4 has more rows of data than the Company's original response to Vote Solar Data Request 8.4, because the Company's 1st Supplemental response to Vote Solar Data Request 8.4 includes an additional month of usage for most customers.
 3. The Company's 1st Supplemental response to Vote Solar Data Request 8.4 and the Company's original response to Vote Solar 8.4 both have similar levels of total exports and deliveries and similar customer counts, which results in similar average exports and deliveries.
 4. Total exports in the Company's 1st Supplemental response to Vote Solar Data Request 8.4 will differ from the Company's original response to Vote Solar Data Request 8.4, as exports were inaccurate in that original response. Further, as described in subpart (2) 1. above, total deliveries will differ between the two submittals. The Company's 1st Supplemental response to Vote Solar Data Request 8.4 should be considered as a complete replacement of the Company's original response to Vote Solar Data Request 8.4.
- (3) Please refer to the Company's response to subpart (2) above, as well as the Company's 1st Supplemental response to Vote Solar Data Request 8.4 for an explanation of changes between Confidential Attachment Vote Solar 8.4 and Confidential Attachment Vote Solar 8.4 1st Supplemental.

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Vote Solar Data Request 11.2

Vote Solar Data Request 11.2

Regarding RMP's supplemental responses to Vote Solar Data Request 4.1, please populate the confidential spreadsheets that identify Option 1 customers with customer name and email address for all customers who have selected Option 2.

Response to Vote Solar Data Request 11.2

Please refer to the Company's revised responses to Vote Solar Data Request 4.1, specifically Customer-Specific Confidential Attachment Vote Solar 4.1-2 1st Revised through Customer-Specific Confidential Attachment Vote Solar 4.1-2 15th Revised which provide customer names and email addresses for customers who selected Option 2.

Vote Solar Data Request 11.3

Refer to the March 7, 2019 Exhibit Accompanying Direct Testimony of Rohit P. Nair in Docket No. 16-035-36, "An Investment Appraisal for Advanced Resiliency Management System (ARMS)", pp. 3-4.

- (1) Please provide the status and expected completion date of the project to deploy an electric ERT gateway for reading existing Centron C1SR meters over the OW RIVA network ("Project").
- (2) Please confirm that, upon Project completion, RMP can remotely read Centron C1SR meters, which provide sub-hourly energy and demand data. If not, please explain why.
- (3) Please confirm that, upon Project completion, RMP could utilize an existing Centron C1SR meter for new Schedule 137 customers. If not, please explain why.

Response to Vote Solar Data Request 11.3

- (1) The project to deploy an electric ERT gateway for reading existing Centron C1SR meters is under way and expected to be completed on or about December 31, 2021.
- (2) Upon completion of the project, the Company will be able to read the Centron C1SR meters and provide demand and hourly energy data.
- (3) Upon completion of the project, the Company will not be able to utilize an existing Centron C1SR meter for new Schedule 137 customers. Delivered and export energy usages are required for Schedule 137. A Centron C1SR meter provides only delivered energy usages.

Vote Solar Data Request 11.5

Affirmative Testimony of Robert M. Meredith - Please refer to the RMP's Direct Testimonies filed on February 3, 2020, specifically the Direct Testimony of Robert M. Meredith, and associated exhibits and work papers.

- (1) Please provide all work papers for the figures included in your testimony, with all analyses included and no pasted values. If these work papers or calculations have already been provided, please specify the location of that information.
- (2) Regarding Exhibit RMP RMM-2. Please provide all underlying data used to compile the Exhibit.
 1. Please include underlying work papers in native format with formulas and links intact that demonstrate how the original data was aggregated or analyzed to arrive at the values presented in the exhibit;
 2. Please provide a narrative explanation of the method used to derive the results for exported energy volume without netting. In your response please explain whether this method relied exclusively on metered data or whether it was estimated using PVWatts or another data source;
 3. Please provide the parameters employed in the PVWatts model to generate the monthly PV performance data shown in cells N1:O16 on tab "Bill".
 4. Exhibit RMP RMM-2 lists total Exported Energy in kWh netted on a 15-minute interval basis for each schedule type in the January 1, 2019 to December 31, 2019 period for Schedule 136 customers.
 - a. Please provide this data on a 15-minute interval basis for each Schedule 135 and Schedule 136 customer. Specifically, please provide Exported Energy in kWh netted on a 15-minute basis for each 15 minute interval, for each Schedule 135 and Schedule 136 customer as shown in the tab labelled "Bill" in the Excel file "RMP Wrkprs RMM2 CompEnrgTotalExprts15MntNettedExprts 2-3-2020" in the January 1, 2019 to December 31, 2019 period.
 - b. Please include data in kWh for intervals during which Exported Energy is zero or negative, that is, during intervals that the Schedule 136 customers have net energy purchases from RMP.
 5. Exhibit RMP RMM-2 lists total Exported Energy in kWh with no netting for each schedule type in the January 1, 2019 to December 31, 2019 period for Schedule 136 customers.

- a. Please provide this data on a 15-minute interval basis for each Schedule 135 and Schedule 136 customer. Specifically, please provide Total Exported Energy in kWh for each 15-minute interval, for each Schedule 135 and Schedule 136 customer as shown in the tab labelled "Bill" in the Excel file "RMP Wrkprs RMM2 CompEnrgTotalExprts15MntNettedExprts 2-3-2020" in the January 1, 2019 to December 31, 2019 period.
 - b. Separately, please provide total energy purchases in kWh from RMP for each 15 minute interval, for each Schedule 135 and Schedule 136 customer as shown in the tab labelled "Bill" in the Excel file "RMP Wrkprs RMM2 CompEnrgTotalExprts15MntNettedExprts 2-3-2020" in the January 1, 2019 to December 31, 2019 period.
- (3) The following statement is made by in Mr. Meredith at lines 75-77 of his testimony, "[d]ifferentiating the price of exported energy better reflects the costs and benefits of distributed energy resources and encourages customers to build and operate their systems in ways that are the most beneficial to the power grid." Please explain how differentiated prices for energy exports encourages a customer with rooftop solar to operate its system in a way that is most beneficial to the power grid.
- (4) Regarding the following statements in Mr. Meredith's testimony at lines 149-152, "[w]ith 15 minute interval netting, the Company estimates that exported energy was about 50.5 percent of overall customer generation. Without netting, the Company estimates that exported energy would be 52.3 percent of overall customer generation," RMP Exhibit RMP RMM-2, and RMP Wrkprs RMM2 CompEnrgTotalExprts15MntNettedExprts 2-3-2020.
 1. Please specify the person or persons at RMP who calculated or assisted in the calculation of the estimates referenced above and shown in Exhibit RMP RMM-2.
- (5) Please refer to RMP Workpaper RMM 2 Comparison of Energy for Total Exports and 15 Minute Netted Exports, file name RMP Wrkprs RMM2 CompEnrgTotalExprts15MntNettedExprts 2-3-2020. Please provide all underlying data used to compile the Exhibit.
 1. Please provide a definition for each variable listed in cells D1:N1 on the tab labelled "Bill" in the Excel file "RMP Wrkprs RMM2 CompEnrgTotalExprts15MntNettedExprts 2-3-2020."
 2. Please explain how that amounts in columns D, E, F, and G labelled NMV, NMR, KWH-U-T, and KWH-DEDUCT-T found on the tab labelled "Bill" in the Excel file "RMP Wrkprs RMM2 CompEnrgTotalExprts15MntNettedExprts 2-3-2020" were derived.

3. Please explain why the formulas underlying the values in columns J and K on the tab labelled “Bill” in the Excel file “RMP Wrkprs RMM2 CompEnrgTotalExprts15MntNettedExprts 2-3-2020” were used to determine the Total (No Netting) amount for each customer in each month of 2019.
 4. The analysis in “RMP Wrkprs RMM2 CompEnrgTotalExprts15MntNettedExprts 2-3-2020” and the results reported in RMP Exhibit RMP RMM-2 are based on Schedule 136 customers. Please provide:
 - a. The same data for Schedule 135 customers (as provided for Schedule 136 customers).
 - b. The same analysis for Schedule 135 customers (as done for Schedule 136 customers).
- (6) RMP proposes to charge each CG customer “a onetime non-refundable \$150 application fee,” (line 204 of Mr. Meredith’s testimony). Please specify all application fees charged to customers by RMP in the State of Utah under the following electric service schedules:
1. Schedule 1.
 2. Schedule 2.
 3. Schedule 2E.
 4. Schedule 3
 5. Schedule 6.
 6. Schedule 6A.
 7. Schedule 6B.
 8. Schedule 8.
 9. Schedule 23.
 10. Schedule 135.
 11. Schedule 136.
- (7) Please refer to RMP Workpaper RMM 3 – Proposed Customer Generator Application Fee Calculation, file name “RMP Wrkprs RMM3 PrpsdCstmrGnrtrApplFee Calc2-3-2020”:
1. In reference to the tab labelled, “Administrative Costs”:
 - a. Please define the term “Total Applications” in cell A3.
 - b. If “Total Applications” includes applications outside the State of Utah, please specify Total Applications by state.

- c. Please explain how the amount for “Total Customer Generation Administrative Costs” of \$765,783 was determined.
 2. In reference to the tab labeled, “Engineering Review”:
 - a. Please explain how the “Engineering review time per application (minutes)” was determined.
 - b. Please explain, in detail, the engineering review that is done for each application.
 - c. Please explain the relevance of “Number of 2017 applications in California” found in cell A5, for engineering review costs in Utah.
 3. In reference to the tab labeled, “Customer Service Expense”:
 - a. Please provide a table showing every type of work order in Utah handled by a call center agent, the number of work orders for each type, and the average handle time for each type.
 - b. Please explain how the costs for each type of work order are allocated to RMP customers.
 - c. Please explain the relevance of “Total Cost for Handing California Customer Generator Work Orders” found in cell B7, for work order costs in Utah.
 - d. Please define “Customer Generation Phone Calls”.
 - e. How is a phone call determined to be a Customer Generation Phone Call?
 - f. Are all Customer Generation Phone Calls related to Utah Schedule 136 applications?
 - g. Are all customer phone calls classified by type?
 - h. If customer phone calls are classified by type, please provide a table showing the types of customer phone calls, the number of phone calls for each type, and the average handle time (seconds).
 - i. Please explain how the costs for each type of phone call are allocated to RMP customers.

- (8) Please describe RMP's long term plan for replacement of customer meters. Please attach any documents you relied on in formulating your answer.

- (9) Please refer to lines 235-250 of Mr. Meredith's testimony:
 1. Mr. Meredith states at lines 235-236 of his testimony, "The Company proposes a \$160 customer generation metering fee for new Schedule 137 participants." Is the proposed customer generation metering fee a one-time fee? If no, please explain.
 2. Mr. Meredith states at lines 238-240 of his testimony, "The Company is planning a partial deployment of advanced metering infrastructure ("AMI") in Utah in 2020 and 2021". Please provide a detailed explanation of this plan including the number of meters to be installed, the location, the total cost, and how the costs of the deployment will be recovered. Please describe any additional plans for deployment of AMI from 2022 onwards.
 3. Please clarify if RMP is proposing to charge new Schedule 137 customers who have an existing AMI meter a fee of \$160 or a fee of only \$20 to re-program the meter. Please provide the rationale for this proposal.
 4. Please clarify when RMP is proposing to collect the metering fee (e.g., at time of application, after meter replacement, etc.).

- (10) Mr. Meredith states at lines 242-243 of his testimony, "[t]he Company estimates that it will expend about \$20 to re-program the meter for a new customer-generator with AMI".
 1. Does Mr. Meredith propose to collect a \$160 Customer Generation Meter Fee from new CG customers that already have AMI?
 2. If the answer to (a) is "no", what Customer Generation Meter Fee is proposed for new CG customers that already have AMI?
 3. Does RMP charge customers to reprogram meters under any of RMP's electric service schedules in Utah? If so, please explain.
 4. Does RMP charge customers for meter repair or upgrade services under any of RMP's electric service schedules in Utah? If so, please explain.

- (11) Mr. Meredith states at lines 243-246 of his testimony, "New customers generators who do not have AMI will be equipped with an AMI meter that will be programmed to measure delivered and exported energy, which the Company estimates will cost \$193.26 to install." What fees are charged to customers by RMP

to install meters in the State of Utah under the following electric service schedules:

1. Schedule 1.
2. Schedule 2.
3. Schedule 2E.
4. Schedule 3.
5. Schedule 6.
6. Schedule 6A.
7. Schedule 6B.
8. Schedule 8.
9. Schedule 23.
10. Schedule 135.
11. Schedule 136.

(12) Please refer to RMP Workpaper RMM 4 – Proposed Schedule 137 Customer Generation Meter Fee, file name 311972RMPWrkprsRMM4PrpsdSchd137CstmrGnrtnMtrFee2-3-2020.xlsx, cell C15.

1. Please provide all data, analysis, reports, and spreadsheets with formulas intact supporting the value of 190,000 AMI meters at the end of 2021.
2. The March 7, 2019 Exhibit states on p. 3, "To maximize the effectiveness of the AMI system, it will be necessary to replace an additional 138,000 meters with RIVA meters to cohesively bind the mesh network." Please confirm that these 138,000 meter replacements to "bind the mesh network" are included in the 190,000 in cell C15. If not, please explain.

Response to Vote Solar Data Request 11.5

(1) Please refer to Attachment Vote Solar 11.5-1.

(2) Please refer to the company's responses to subparts 1 through 5 below:

1. Please refer to Mr. Meredith's work paper file "Exhibit RMP__(RMM-2) - Workpaper.xlsx" as well as the Company's response to OCS Data Request 4.6.
2. Please refer to the Company's response to OCS Data Request 4.6.
3. The parameters used in PVWatts® were the default parameters on the website. The direct current kilowatt (kW) size was set at a value of one. The module type was set as "Standard". The array type was set as "Fixed (open rack)". System losses were set at 14.08 percent. The tilt was set at 20 degrees. The azimuth was set at 180 degrees.

4. Please refer to the Company's response to Utah Parties LRS 1 through 12, and the Company's 1st Supplemental response to Vote Solar 8.4 which includes gross 15-minute exported and delivered energy for Schedule 136 customers and the available 15-minute interval data for Schedule 135 customers. Netting of the data can be accomplished by subtracting exports from deliveries, or deliveries from exports, depending on which is greater in each respective 15-minute interval. Note: 15-minute interval data are not available for each Schedule 135 customer.
 5. Please refer to the Company's response to subpart (2) 4 above.
- (3) Please refer to lines 79 through 95 of Mr. Meredith's phase II testimony for a discussion of the price signals that the proposed Net Billing program would create including examples of how customers could respond to those price signals.
- (4) An employee working under Mr. Meredith's direction developed the referenced calculations in his testimony. Mr. Meredith reviewed these calculations, and is the Company witness who will sponsor any testimony relating to them.
- (5) Please refer to the Company's response to OCS Data Request 4.6.
1. Please refer to the Company's response to OCS Data Request 4.6.
 2. Please refer to the Company's response to OCS Data Request 4.6.
 3. Please refer to the Company's response to OCS Data Request 4.6.
 4. The Company cannot perform the requested analysis, because the data are not available for Schedule 135 customers whose billing is not based upon 15 minute interval profiles.

(6) Please refer to Special Condition 1 of the Company's Electric Service Schedule No. 136 for application fees charged to customers requesting to interconnect to customer generation to the Company's system. Schedule 135 is closed to new applications. For all other schedules please refer to the following table:

1. Schedule 1.	\$10.00
2. Schedule 2.	\$0.00
3. Schedule 2E.	\$0.00
4. Schedule 3	\$10.00
5. Schedule 6.	\$0.00
6. Schedule 6A.	\$0.00
7. Schedule 6B.	\$0.00
8. Schedule 8.	\$0.00
9. Schedule 23.	\$0.00
10. Schedule 135.	\$0.00
11. Schedule 136. Level 1	\$60.00
Level 2	\$75.00 plus \$1.50 per kWh of capacity
Level 3	\$150 plus \$3.00 per KWh of capacity

(7) Please refer to the subparts for this question below.

1. Referring to the table labeled "Administrative Costs"

a. Total applications refers to all applications to interconnect customer generation systems in the Company's six state service territory.

b. 4,727 were from Utah, 629 were from Oregon, 537 were from Idaho, 246 were from Washington, 125 were from California, and 37 were from Wyoming.

c. Customer generation administrative cost is the cost of the Company's Customer Generation department which is dedicated to administering the Company's customer generation programs.

2. In reference to the tab labeled, "Engineering Review", refer to the subparts below:

a. The time spent by an engineering was based upon the Company's experience.

b. For Level 1 Reviews:

- Identify the location and transformer associated with the application.
- Input the transformer identification number, size, voltage, and meter form into PowerClerk.

- Determine if the mapping is correct by comparing transformer location with customer address.
- Identify the distribution circuit associated with the application. If the particular circuit has a high penetration of distributed generation, then the peak and daytime minimum load for the circuit is gathered. If thresholds are exceeded the application requires a level 3 system impact study.
- Determine if an AC disconnect switch is needed based on respective state requirements. If required the customer-provided one line is inspected to ensure the requirements are met. If an AC disconnect is required, but not included in the customer's one line, the customer is contacted to provide justification which is then provided to the local meter personnel to determine if an exception will be granted.
- Analyze the risk of transient overvoltage based on loading and generation levels to verify if transient overvoltage mitigation is needed. If it is, the inverter(s) for the project are checked to see if the inverter(s) meet the requirements for mitigation.
- Request any additional information or corrected information needed from the customer before approving the application.
- Determine if an infrastructure accommodation is required for the project and develop the scope of the accommodation if applicable.

For Level 2 Reviews:

- Perform all tasks associated with the level 1 review.
- Determine if there is any other generation already installed on the transformer serving the application's project, as well as the transformer configuration type if it is a three phase transformer bank.
- Identify the circuit's line to line voltage, power factor, primary configuration at the point of interconnect, and the feeder type.
- Determine the peak and minimum daytime circuit loading if not already completed from the level 1 tasks.
- Model and calculate the fault current at the point of interconnect both with and without the new generation.
- Input the aggregate generation on the circuit as well as the interrupting rating of the smallest protective device into PowerClerk.
- Determine if there are known transient stability limits for generation.
- Determine if a site inspection is required.
- Ensure the generation is balanced on all three phases for three phase projects.
- Determine if an infrastructure accommodation is required for the project and develop the scope of the accommodation if applicable.

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 Vote Solar Data Request 11.5

Call Type	Total Agent Calls Answered	Average Call Handle Time (Seconds)
AMI	37,372	376
Billing	510,267	371
Blue Sky	1,761	349
Business	130,343	402
Collections	575,311	332
Customer Generation	16,880	527
Energy Assistance	55,581	193
Evening Weekends	114,706	327
Home Energy	2,116	359
Irrigation	8,462	422
New Construction	85,259	385
Outage	278,612	261
Solar	270	585
Spanish	104,386	361
Spanish Outage	5,123	275
Web Billing	69,664	388
Web Tech Support	686	452
Work Request	508,798	394
Grand Total	2,505,597	376

i. Please refer to Company's response to subpart (b) above.

- (8) RMP's long term plan is to replace meters as they fail or are damaged.
- (9) In reference to lines 235-250 of Mr. Meredith's testimony, please refer to the subparts below:
1. Yes.
 2. PacifiCorp plans to install approximately 170,000 AMI meters throughout its Utah service territory. The exact location of each meter will be determined during the deployment phase to maximize operational efficiency of the network. The projected cost of Utah AMI project implementation is \$82 million. Costs will be recovered through the standard rate filings and processes. All new connects and meter replacements that occur after project completion will be done with AMI meters. There are no mass installation projects planned past the end of the current project at this time.
 3. The Company is proposing to charge all new Schedule 137 customers a \$160 customer generation metering fee, whether they have an AMI meter or not. As discussed on lines 235 through 250, \$160 represents the current weighted cost of upgrading or reprogramming meters for all customers.

4. The Company plans to collect this fee at the time of application like it does currently for the Schedule 136 program.
- (10) In reference to “Mr. Meredith states at lines 242-243 of his testimony, “[t]he Company estimates that it will expend about \$20 to re-program the meter for a new customer-generator with AMI”.”, please refer to the subparts below:
1. Yes.
 2. Not applicable.
 3. No.
 4. No.
- (11) There are no fees for the first ten schedules listed above and a \$200 fee for schedule 136.
- (12) In reference to RMP Workpaper RMM 4 – Proposed Schedule 137 Customer Generation Meter Fee, file name 311972RMPWrkprsRMM4PrpsdSchd137CstmrGnrtnMtrFee2-3-2020.xlsx, cell C15., please refer to the subparts below:
1. The estimated value of 190,000 AMI meters is \$21.5M (The average cost per meter times 190,000).
 2. The 138,000 meter replacements to “bind the mesh network” are included in the original count.

Vote Solar Data Request 11.7

Please refer to RMP's Direct and Rebuttal Testimonies filed on February 15, 2018, and April 10-11, 2018 specifically the Testimony of Kenneth Lee Elder, Jr., and associated exhibits and work papers. Please provide the following:

- (1) Documented sampling plan– Original 36;
- (2) Documented sampling plan– Schedule 135;
- (3) Sampling frame and sample selection computer code – Original 36; and
- (4) Sampling frame and sample selection computer code – Schedule 135.

Response to Vote Solar Data Request 11.7

- (1) Please refer to Attachment Vote Solar 11.7-1 which provides the documented sampling plan for the Load Research Study (LRS) conducted as part of Docket 14-035-114.
- (2) Please refer to Attachment Vote Solar 11.7-2 which provides the documented sampling plan for the LRS conducted as part of Docket 17-035-61.
- (3) Please refer to Attachment Vote Solar 11.7-3 which provides the sample frame and selection information for the LRS conducted as part of Docket 14-035-114.
- (4) Please refer to Attachment Vote Solar 11.7-4 which provides the sample frame and selection code for the LRS conducted as part of Docket 17-035-61.