SAN DIEGO GAS & ELECTRIC COMPANY
SOUTHERN CALIFORNIA GAS COMPANY

APPLICATION REGARDING FEASIBILITY OF INCORPORATING ADVANCED METER DATA INTO THE CORE BALANCING PROCESS (A.17-10-002)

(3RD DATA REQUEST FROM SOUTHERN CALIFORNIA GENERATION COALITION AND INDICATED SHIPPERS)

QUESTION 3.1:

Please provide a copy of the report that SoCalGas has filed with the CPUC Energy Division in compliance with Paragraph 13 of the Second Daily Balancing Settlement in A.15-06-020 for the months of January 2018, February 2018, March 2018, and April 2018.

RESPONSE 3.1:


SCGC 3.1.zip

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QUESTION 3.2:

Please provide, for the period, January 1, 2018 through May 21, 2018, the percentage difference for each day between the core's recorded daily usage and the core's scheduled daily nominations as of Intraday Cycle 2. The percentage difference should be indicated as positive for nominations greater than recorded usage and negative for nominations less than recorded usage. The core's daily usage should be defined as stated in the footnotes to the report that SoCalGas has filed with the CPUC Energy Division in compliance with Paragraph 13 of the Second Daily Balancing Settlement in A.15-06-020.

RESPONSE 3.2:

SoCalGas and SDG&E object to this question to the extent it seeks confidential, customer-specific information. Notwithstanding this objection, and subject thereto, SoCalGas responds as follows.

As agreed to with SCGC, attached is a summary of the daily percentage difference between retail core's final daily volumes scheduled to its burn account and the retail core's estimated recorded daily (midnight to midnight) usage (there is no "recorded" core daily usage) for January 1, 2016- April 30, 2018, separated by winter (November-March) and summer (April-October) months. The daily percentage difference indicates as positive for scheduled volumes greater than estimated usage and negative for scheduled volumes less than estimated usage.

The estimated recorded daily usage includes company-use fuel and lost & unaccounted for (LUAF) gas, and is derived from the residual load on the SoCalGas & SDG&E systems by subtracting noncore and estimated core transport agent (CAT) load from the total gas sendout. Changes in system linepack have also not been taken into account. The CAT demand is estimated based on the historical CAT usage per meter with its meter growth assumption. Total system sendout is measured in physical volume and for comparison purposes has been converted to Dth using a 1.0273 Dth/Mcf heat rate. The estimated recorded daily usage has not been adjusted to correct for monthly total differences between MCS and customer billing data.


SCGC 3.2.xlsx

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QUESTION 3.3:

With respect to the testimony of David Mercer at pages 3-4 and the Applicants' response to SCGC-SEU Data Request 2, Q.2.2.4 that was submitted in A.17-10-007:

3.3.1. Are the MTUs randomly assigned to one of the six data transmittal schedules described in the response to Q.2.2.4?

3.3.2. If the answer to the previous question is "no," please state the basis upon which the modules are assigned to one of the six data transmittal schedules.

3.3.3. Where does SoCalGas maintain its record of which data transmittal schedule each MTU has been assigned to?

RESPONSE 3.3:

3.3.1. The assigned data transmittal schedule is based on the time that the MTU is provisioned (e.g. installed and activated). An MTU can be provisioned at any time installation activities occur. For example, an MTU provisioned at 8:03am would receive confirmation of network connectivity within minutes of installation and the module's transmission time would be assigned to 9:00 AM. For network operation purposes, the assignment of the data transmittal schedule is considered random.

3.3.2. See response 3.3.1.

3.3.3. Each individual MTU maintains a record of its data transmittal schedule. The assigned transmittal schedule for each MTU is not stored in any central database or system (such as the Head End or MDMS) as a unique data element. However, the assigned transmittal schedule can be inferred from analyzing MTU transmission records in the Head End.

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QUESTION 3.4:

With respect to the statement in the testimony of David Mercer at page 5: "The AMI Load processes all data, including the current day's data, that has been received up to the process run point."

3.4.1. Does the statement "all data" in the quoted material refer to data for each day that the MTU has been connected to the AMI system?

3.4.2. If the answer to the previous question is "no," please define the period to which the statement "all data" corresponds.

RESPONSE 3.4:

3.4.1. The term "all data" is referring to the gas interval usage data. The AMI Load Process consumes all new data after the previously run AMI Load process. This may, for example, include any missing data that may have become available after the last AMI load.

3.4.2. See response 3.4.1.

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QUESTION 3.5:

With respect to the statement in the testimony of David Mercer at page 4: "The data warehouse load process starts at 5:00 PM and stores data from the previous calendar day" and the Applicants' response to SCGC-SEU Data Request 2, Q.2.5.4, in A.17-10-007 that states: "Daily, the Data Warehouse initiates several load processes that transfers hourly reads and usage data (in cubic feet, not therms) to the Data Warehouse. This process is complete by 5:00 PM."

3.5.1. Please state what times during each day the "Data Warehouse initiates several load processes that transfers hourly reads and usage data (in cubic feet, not therms) to the Data Warehouse."

3.5.2. Each time the Data Warehouse initiates the load processes, is all of the AMI data that is present in the MDMS system for the previous Gas Measurement Day is uploaded to the Data Warehouse or only some portion of the data?

3.5.3. If only some portion of the data is uploaded as described in the previous question, please specify how that portion of the data is determined.

3.5.4. How long does it take to upload the data from the MDMS system to the Data Warehouse?

3.5.5. How long would it take to upload the data from the MDMS system to the Data Warehouse if that data were limited to the hourly reads and usage data for only the previous Measurement Day?

RESPONSE 3.5:

3.5.1. There are currently two scheduled processes that transfer interval gas usage from the MDMS to the Data Warehouse. Both scheduled processes will complete by approximately 5:00 PM.

- The first scheduled Data Warehouse Load process that transfers working interval usage data (in cubic feet) begins at 1:00 PM.

- The second scheduled Data Warehouse Load process begins at 2:30 PM and transfers hourly interval data in cubic feet that has been through the VEE process. The VEE process runs at noon on newly available data within the MDMS.

3.5.2. At the 1:00 PM Data Warehouse Load process, approximately 90% of the previous day's data is available in the MDMS. The 1:00 PM Data Warehouse Load process will capture this data and load it into the Data Warehouse. This includes data available via the AMI Load job run at 11:00 AM.

At the 2:30 PM Data Warehouse Load process, which includes data available via the VEE job that was run at noon, again approximately 90% of the previous day's data is available in the MDMS. The 2:30 PM Data Warehouse Load process will capture this data and load it into the Data Warehouse.

3.5.3. See response 3.5.2.

3.5.4. See response 3.5.1.

3.5.5. The Data Warehouse Load process is limited to the hourly reads and usage data for the previous and all prior Measurement Days that were received during the previous day. Limiting the upload process to only the previous Measurement Day would have little impact to process run times because the amount of new data not associated with the Previous Measurement Day is minimal. See also response to 3.5.1.

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QUESTION 3.6:

With respect to Figure II-2 in the testimony of David Mercer at page 3:

3.6.1. Please confirm that that during each Measurement Day a data packet (consisting of an anchor read and 11 index counts) from a random number of MTUs is transmitted approximately every 15 minutes via the DCUs to the Head End.

3.6.2. Please confirm that the data described in the previous question would then be transmitted, after approximately 15 minutes, from the Head End, with the index counts converted to cubic feet, to the staging tables until it is time to upload the data to the MDMS.

3.6.3. Does the data from the MTUs include an identification of the date as well as the hour number for each of the 12 hours for which volume in cubic feet is recorded?

3.6.4. Would it be possible to upload partial day data for the current Measurement Day at noon or sometime shortly thereafter from the staging tables directly to the Data Warehouse assuming the appropriate programs were developed?

3.6.5. If the answer to the previous question is “no,” would it be possible to send partial day data for the current Measurement Day to the MDMS at noon or sometime shortly thereafter and then upload that data from the MDMS to the Data Warehouse?

RESPONSE 3.6:

3.6.1. The system is designed such that every 15 minutes the Head End should receive data for approximately 250,000 MTU’s. Therefore, during each Measurement Day, a data packet (consisting of an anchor read and 11 index counts) from a random selection of approximately 250,000 MTUs is transmitted approximately every 15 minutes via the DCU’s to the Head End.

3.6.2. SoCalGas considers the staging tables to be part of the AMI Load Process. While the staging tables may be populated every 15 minutes, other aspects necessary to complete the load process (such as cubic feet conversion and meter to MTU validations) are not run until the times indicated in Figure II-2.

3.6.3. The time information for date and hour is interpreted from the MTU's transmission time. However, the MTU does not record data in cubic feet. The data transmitted from the MTU to the Head End is "interval gas usage data" and algorithms (typically within the AMI Load Process) have not yet been run to convert the raw meter read to cubic feet.

3.6.4. When considering a Head End to Data Warehouse interface, it is important to remember that the AMI Load Process (the process that transfers data from Head End to MDMS) includes two additional, important functions: 1) the conversion of meter read data to cubic feet and 2) the verification of the proper MTU to meter asset relationship. These functions are examples of processes and procedures that would need to be replicated in any new Head End to Data Warehouse interface. The Advanced Meter system and interface timings were designed for optimal billing efficiency. Any changes implemented to the current system design would impact other processes and procedures.

3.6.5. The Advanced Meter system and interface timings were designed for optimal billing efficiency. Any changes implemented to the current system design would impact other processes and procedures.