**QUESTION 15.1:**

Please state the hours covered by each “forecasted burn for a gas day” that was addressed in the response to SCGC-14, Q.14.2. For example, does the forecast cover the hours 7:00 am to 7:00 am on the next day (*i.e.*, the NAESB Gas Day) or does the forecast cover the hours 12:00 am to 12:00 am on the next day (*i.e.*, the SoCalGas billing day)?

**RESPONSE 15.1:**

The “forecasted burn for a gas day” covers the hours 7:00 a.m. through 7:00 a.m. of the next gas day. For example, the forecast that is provided by 5:00 a.m. on Jan 1st would cover the hours 7:00 a.m. on January 1st through 7:00 a.m. on January 2nd.

**QUESTION 15.2:**

Please state the hours of metered usage that each noncore customer on the system is expected to balance its daily gas delivery against under a low OFO, high OFO, or EFO situation. For example, does the metered usage cover the hours 7:00 am to 7:00 am the next day (*i.e.*, the NAESB Gas Day) or 12:00 am to 12:00 am the next day (*i.e*., the SoCalGas billing day)?

**RESPONSE 15.2:**

The measurement day begins at 12 a.m. Pacific Standard Time. The gas day begins seven hours later (7 a.m. PST) when standard time is in effect and six hours later (7 a.m. PDT) when daylight savings time is in effect. Under a low OFO, high OFO, or EFO situation, noncore customers balance their daily gas delivery against metered usage for the SoCalGas measurement day beginning at 12 a.m. PST on the same calendar day.

**QUESTION 15.3:**

15.3. In its response to SCGC-14, Q.14.11, SoCalGas quotes Mr. Borkovich’s testimony as follows: “the delay between when a given hourly read is taken by the MTU and when it is available and usable (e.g., aggregated with all other MTU reads for the same hour) in the SoCalGas back office system cannot be less than 14 hours. The delays are: six hours for the six hourly reads that are taken and batched in the MTU, plus up to six hours for data transmission, and approximately two hours for data processing at various stages.”

**15.3.1.** Assuming for example that the six hours of data that are batched in the Meter Transmission Unit (“MTU”) are hours 1 through 6, if the batch is sent at the end of hour 6, how could this represent a six hour delay in obtaining the read of the data for any of the hours 1-6? In other words, wouldn’t the delay due to batching in the MTU be five hours for hour 1, four hours for hour 2, three hours for hour 3, two hours for hour 4, one hour for hour 5, and no hours for hour 6?

**RESPONSE 15.3.1:**

The attached pdf file provides a “System Overview,” including a graphical depiction of the AM data steps, definitions of key terms, and a description of each of the data-availability steps. For clarification, the System Overview is for Core customers only.



The following is an example of the data availability. Definitions of the key terms are in the attached System Overview.

1. The MTU will store a read at the top of each hour for “hours 1 – 6” (Step 1)
   * “Hour 1” is 12-1 a.m. and “Hour 6” is 5-6 a.m.
2. The MTU can schedule a random transmission to the DCU between **6:00:01 a.m.** and **11:59:59 a.m.** for “hours 1 – 6” (6 hour window) (Step 2)
3. The DCU can take up to 15 min to transmit the data for “hours 1 – 6” to the HeadEnd (Step 3)
4. The HeadEnd can take up to another 15 min to transmit this data to MDMS (Step 4)
5. MDMS can take up to 90 min to store the reads and consumption data (the AMI Load process), and run the VEE (Validation, Estimation, & Editing) process (Step 5). Note that the AMI Load processes are scheduled to run four times a day (for data received up to the process run point) while the VEE processes are scheduled to run twice a day (for data from the previous calendar day). This schedule is designed to promote system efficiency and is based upon core customer billing and web presentment. The AMI Load process timing supports SoCalGas monthly billing activities. The VEE data load process timing supports the core customer’s ability to view hourly interval usage via SoCalGas *Ways to Save* in *My Account*.

The earliest that **complete** hourly data can be available for hours 1 – 6 is at 2 p.m. (i.e., after 14 hrs.). As a point of clarification, the AM data that is available at this point is still in units of CCF (available in therms via SoCalGas *Ways to Save* in *My Account*). A new process would need to be created and added to the timeline to account for converting the data to MMBtu’s, which is what would be used for balancing. This requirement has not been scoped, so it is not clear at this point when MMBtu data could be available. Any adjustments to the current schedule will require SCG to analyze the functional requirements, develop a project proposal and plan and then ultimately fit the project within our current portfolio of system enhancements.

**15.3.2.** Would batching create any delay in the MTU transmitting the six hours of data to a Data Collection Unit (“DCU”) at the end of hour 6?

**RESPONSE 15.3.2:**

There are no additional delays other than as described in Response 15.3.1 and the attached System Overview.

**15.3.3.** If batching would create a delay, how long would be the delay?

**RESPONSE 15.3.3:**

N/A

**15.3.4.** The response characterizes the transmission of the data as taking “up to six hours.” Is the response referring to the transmission of data from the MTU to a DCU, from a DCU to SoCalGas’ back office systems, or from the MTU through a DCU to SoCalGas’ back office systems?

**RESPONSE 15.3.4:**

Please see Response 15.3.1 and the attached System Overview. On the 6th hour, the data is batched for transmission and can be transmitted anytime between 6:00:01 and 11:59:59. From a total system perspective, the first 1/6th of the AM data arrives in the 6:00 hour and the last 1/6th of the AM data arrives in the 11:00 hour.

**15.3.5.** What is the average amount of time required for data transmission, and what is the least amount of time?

**RESPONSE 15.3.5:**

The MTU’s transmit their data in a 70 ms burst.

**15.3.6.** Please explain in detail each of the steps that the data takes during its transmission from an MTU to a DCU and then to SoCalGas’ back office systems, describing in detail the processes that the data undergoes at each step.

**RESPONSE 15.3.6:**

Please see Response 15.3.1 and the attached System Overview.

**15.3.7.** Are there steps along the data transmission path from the MTU through the DCU to SoCalGas’ back office systems where the data sits, waiting for transmission?

**RESPONSE 15.3.7:**

Yes. Please see Response 15.3.1 and the attached System Overview.

**15.3.8.** If the answer to the previous question is “yes,” please describe in detail the points along the data transmission path where the data sits and estimate the likely amount of time that data spends sitting at each of the points awaiting transmission.

**RESPONSE 15.3.8:**

Please see Response 15.3.1 and the attached System Overview.

As described in the System Overview:

1a. 6 hour in the MTU

1b. Up to an additional 6 hours in the MTU

2. Up to 15 minutes in the DCU

3. Up to 15 Minutes in the HeadEnd (in this instance, some of the time is more accurately described as data processing.)

4. Up to 90 minutes in MDMS (in this instance, the time is more accurately described as data processing.)

**15.3.9.** Does the data transmission involve any manual steps?

**RESPONSE 15.3.9:**

No.

**15.3.10.** If the answer to the previous question is “yes,” please describe in detail each of the manual steps that are included in transmitting the data.

**RESPONSE 15.3.10:**

N/A.

**15.3.11.** How many individuals, either SoCalGas personnel or contractors, are involved in performing the manual tasks described in the response to the previous question?

**RESPONSE 15.3.11:**

N/A.

**15.3.12.** Can any of these manual tasks be automated?

**RESPONSE 15.3.12:**

N/A.

**15.3.13.** Please describe each of the “various stages” during which the “data processing” occurs.

**RESPONSE 15.3.13:**

Please see Response 15.3.1 and the attached System Overview.

**15.3.14.** Please explain why the “various stages” of “data processing” take six hours.

**RESPONSE 15.3.14:**

Please see Response 15.3.1 and the attached System Overview.

**15.3.15.** Does the “data processing” occur after delivery of data from the DCU to SoCalGas’ back office systems?

**RESPONSE 15.3.15:**

Yes. As described in Response 15.3.1 and the attached System Overview, data processing of some sort occurs at every stage after the DCU transmission.

**15.3.16.** If the answer to the previous question is “yes,” please explain why the data processing takes two hours, and please describe in detail the data processing that occurs after the data is delivered to SoCalGas’ back office system. If the answer to the previous question is “no,” please explain the point(s) at which the data processing occurs and explain why the data processing takes two hours.

**RESPONSE 15.3.16:**

Please see Response 15.3.1 and the attached System Overview. Most of the data processing occurs in the HeadEnd to MDMS data transfer and within the MDMS itself.

**15.3.17.** How is the compiled data delivered to SoCalGas’ back office personnel?

**RESPONSE 15.3.17:**

Typically the data is delivered through Data Warehouse and CIS (Customer Information System), although other systems do collect usage data for other purposes.

**15.3.18.** Does the “data processing” in the SoCalGas back office involve any manual steps, or is it fully automated?

**RESPONSE 15.3.18:**

It is fully automated.

**15.3.19.** Is the data processed immediately upon receipt at the SoCalGas back office? If there is a delay, please quantify the delay and explain why there is a delay.

**RESPONSE 15.3.19:**

Please see Response 15.3.1 and the attached System Overview. In general, data is immediately processed whenever possible, subject to the current AMI Load and VEE process schedules.