

Pacific Gas and Electric Company



California Gas Transmission

OFO Report
First Quarter 2001
(January – March)

April 30, 2001

Subject to Rule 51 of the CPUC Rules of Practice and Procedure,
Rule 601 et seq. of the FERC Rules of Practice, Rule 408 of the Federal
Rules of Evidence, and Section 1152 of the California Evidence Code

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I. BACKGROUND

A. Requirements for Report

PG&E is providing this Operational Flow Order (OFO) Report (Report) as required by its OFO Settlement Agreement (OFO Settlement or Settlement)¹ and as part of its continued commitment to keep the California natural gas market participants informed. This is the fourth OFO Report since the April 1, 2000 effective date of the OFO Settlement. These Reports are provided quarterly. The purpose of the OFO Report is to document “the number and causes of each customer-specific and system-wide OFO, EFO and ‘trimming’ occasion (‘Event’) within the prior three months.”²

This Report covers the first quarter of 2001 – January 1 through March 31. The specific requirements per Section C.1.f. of the OFO Settlement are that these quarterly OFO reports will show the sources of system imbalance for each of the three (3) days prior to an Event, as follows:

- 1) Imbalance and gas scheduled for each entity responsible for managing imbalances as specified in C.3.b.(3). For Core Procurement Groups, the supply will be compared to their Determined Usage, which is their Cumulative Imbalance (except for OFO days when the 24-hour forecast will be used). Each such entity will be identified by a new and unique numerical identifier, and not by name.
- 2) Pipeline imbalances.
- 3) Net market center imbalances for the aggregate of parking, lending and storage services.
- 4) Pipeline balancing provided by allocated storage.
- 5) Beginning, ending and change in pipeline inventory.
- 6) Any proposed changes to any OFO and balancing procedures and/or methodology addressed in this Settlement.

This report includes detailed balancing and operations data for each OFO, and the three (3) days prior. In addition, it provides information and analysis of the data to support future discussion of issues by the OFO Forum.

¹ PG&E’s OFO Settlement was approved by the CPUC in Decision 00-02-050 on February 17, 2000. The Settlement tariffs were effective April 1, 2000.

² See Section C.1.f, page 5 of the OFO Settlement.

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B. Criteria For Calling OFOs

OFOs are called when PG&E's pipeline inventory is forecast to exceed its upper or lower limits shown in Table 1. These limits were specified in Section C.2.d, page 7, of the OFO Settlement.

Table 1: Pipeline Inventory Limits, MMcf

| <u>Total Demand Forecast, MMcf</u> | <u>Lower</u> | <u>Upper</u> |
|------------------------------------|--------------|--------------|
| Low Demand: 1,500 to 2,800 | 3,900 | 4,500 |
| High Demand: 2,800 to 3,900 | 4,000 | 4,600 |

The pipeline also uses assigned firm storage rights of 50 MMcf/day for injection, 70 MMcf/day for withdrawal and 2.2 Bcf of storage inventory to help manage imbalances. These imbalances may be due to differences in customers' supply and demand, market center imbalances, differences between forecast and actual demands, pipeline-to-pipeline imbalances, over/under collection of shrinkage, and other factors. Data on these imbalances is shown in Appendix B of this report for each OFO day and the prior three days.

C. Reduced Upper Pipeline Inventory Limit Effective March 15

Effective March 15, 2001, the Upper Pipeline Inventory Limit was temporarily set at 4,500 MMcf under all Total Demand conditions due to scheduled work at PG&E's Kettleman compressor station. This resulted in a reduction in the upper limit under high demand conditions³. The work at Kettleman compressor station was completed in late April. The pipeline inventory limits were returned to those listed in Table 1 at that time.

II. OFO EVENTS DURING THE FIRST QUARTER 2001

A. OFO Event Summary

During the quarter ending March 31, 2001, PG&E called a total of seven (7) OFO events. Four (4) of these were system-wide OFOs, and three (3) were customer-specific OFOs. During this quarter, four (4) of the OFO events were a result of high pipeline inventory, and three (3) were a result of low pipeline inventory. There were no EFO events during this quarter. There was one (1) "trimming", or receipt point capacity allocation, event during this quarter. Table 2 provides a summary of each OFO event, with the shaded rows indicating customer-specific OFOs.

³ This reduction is allowed under Section C.2.g, page 7, of the OFO Settlement. This was announced to the market on March 12, through the Pipe Ranger web site.

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Table 2: OFO Event Summary

| Date | Type | Cause / Comments |
|---|---|---|
| Thursday February 1, 2001 | ? System-Wide ? <u>Low Inventory</u> ? Stage 3 at \$5.00/Dth ? Tolerance Band: 2% | ? Projected ending inventory of 3,782 MMcf was below the lower limit of 4,000 MMcf. ? Customer-Specific OFO not called because there were more than 10 balancing entities targeted. |
| Monday February 5, 2001 | ? System-Wide ? <u>High Inventory</u> ? Stage 3 at \$5.00/Dth ? Tolerance Band: 0% | ? Projected ending inventory of 4,909 MMcf exceeded upper limit of 4,600 MMcf. ? Customer-Specific OFO not called because targeted customers' forecast imbalance relief was insufficient. |
| Wednesday February 21, 2001 | ? Customer-Specific ? <u>Low Inventory</u> ? Stage 3 at \$5.00/Dth ? Tolerance Band: 2% ? Customers: 7 | ? Projected ending inventory of 3,868 MMcf was below lower limit of 4,000 MMcf. |
| Monday February 26, 2001 | ? Customer-Specific ? <u>Low Inventory</u> ? Stage 3 at \$5.00/Dth ? Tolerance Band: 2% ? Customers: 1 | ? Projected ending inventory of 3,890 MMcf was below lower limit of 4,000 MMcf. |
| Tuesday March 20, 2001 | ? Customer-Specific ? <u>High Inventory</u> ? Stage 3 at \$5.00/Dth ? Tolerance Band: 1% ? Customers: 2 | ? Projected ending inventory of 4,652 MMcf exceeded upper limit of 4,500 MMcf. ? Receipt point capacity allocation, or "trimming", event was also required during the gas day to bring pipeline inventory under control. |
| Wednesday March 21, 2001 | ? System-Wide ? <u>High Inventory</u> ? Stage 3 at \$5.00/Dth ? Tolerance Band: 1% | ? Projected ending inventory of 4,923 MMcf exceeded upper limit of 4,500 MMcf. ? Customer-Specific OFO not called because targeted customers' forecast imbalance relief was insufficient. |
| Thursday March 22, 2001 | ? System-Wide ? <u>High Inventory</u> ? Stage 3 at \$5.00/Dth ? Tolerance Band: 3% | ? Projected ending inventory of 4,954 MMcf exceeded upper limit of 4,500 MMcf. ? Customer-Specific OFO not called because targeted customers' forecast imbalance relief was insufficient |

B. Receipt Point Capacity Allocation Event

On March 20, 2001, PG&E was required to implement a receipt point capacity allocation, or "trimming", event to manage the extremely high system pipeline inventory. PG&E issued a customer-specific OFO for March 20, and a system-wide OFO for

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March 21. Despite these measures, system inventory was forecast to exceed an operationally safe level during the gas day on March 20. Therefore, a receipt point capacity allocation was implemented at all upstream pipeline interconnects during the Intraday1 nomination cycle⁴ to reduce the incoming gas supply, and thereby reduce the pipeline inventory levels.

During this receipt point capacity allocation, all as-available Baja and Redwood path transmission service was reduced to zero. All firm Baja and Redwood path transmission service was reduced by approximately 10%, to 90% of the original scheduled receipt quantities. This resulted in an on-system supply reduction of approximately 350 MMcf for the day.

C. System-Wide OFO Reduction

One objective of the OFO Settlement Agreement was to “significantly reduce the number of system-wide OFOs on the PG&E system.”⁵ The specific goal was to reduce, during the first six months of the Settlement, the number of system-wide OFOs by at least twenty-five (25) percent compared to the same six months in the prior year.⁶ This was accomplished, as documented in the previous OFO Report and illustrated in Table 3, below.

As shown in the following table, the number of system-wide OFOs for the reported quarter declined by 60% compared to the same quarter in the prior year. During the first year under the OFO Settlement, the number of system-wide OFOs has declined by 63%.

The OFO Settlement was designed to use more customer-specific OFOs. This has occurred with the total customer-specific OFOs increasing from 2 to 23. However, the total number of OFOs since the implementation of the OFO Settlement has decreased by almost 20% (41 compared to 51).

⁴ The Intraday1 nomination cycle is the third nomination cycle for the gas day.

⁵ See page 1 of OFO Settlement.

⁶ See Section B.2, page 2 of the OFO Settlement.

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Table 3: Comparison of OFOs to Same Quarter in Prior Year

| Quarter | Prior Year April 1999 – March 2000 | | | Current Year April 2000 – March 2001 | | | System- Wide OFO Reduction |
|--------------|---------------------------------------|----------------------|-------|---|----------------------|-------|-------------------------------------|
| | System Wide | Customer Specific | Total | System Wide | Customer Specific | Total | |
| April – June | 12 | 2 | 14 | 4 | 7 | 11 | 67% |
| July – Sept | 18 | 0 | 18 | 7 | 5 | 12 | 61% |
| Oct. – Dec. | 9 | 0 | 9 | 3 | 8 | 11 | 67% |
| Jan. – March | 10 | 0 | 10 | 4 | 3 | 7 | 60% |
| Total | 49 | 2 | 51 | 18 | 23 | 41 | 63% |

C. Distribution of OFOs

Table 4 shows the distribution of OFO events by month during the quarter.

Table 4: Distribution of OFOs by Month

| | System-Wide | | | Customer-Specific | | | Total |
|----------|-------------|-----|-------|-------------------|-----|-------|-------|
| | High | Low | Total | High | Low | Total | |
| January | 0 | 0 | 0 | | 0 | 0 | 0 |
| February | 1 | 1 | 2 | 0 | 2 | 2 | 4 |
| March | 2 | 0 | 2 | 1 | 0 | 1 | 3 |
| Total | 3 | 1 | 4 | 1 | 2 | 3 | 7 |

Table 5 below shows the breakdown of OFO events by the day of the week. The Low Inventory events occurred during the weekdays, when customer demand typically is higher. In the past, we have seen majority of the High Inventory events occur on weekends and holidays, or the Friday leading into the weekend, when demand typically drops. This was not the case during the previous quarter, as all the High Inventory OFO events (February 5th and March 21st, 22nd and 23rd) occurred on weekdays. However, these events were associated with rapidly changing and unseasonably warm temperatures, and a related reduction in total demand, on the days immediately prior to the events.

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Table 5: Distribution of OFOs by Day-of-Week

| | Jan-Mar, 2001 Quarter | | | Total Since April 1998 | | |
|-----------|-----------------------|---------|-------|------------------------|---------|-------|
| | High OFO | Low OFO | Total | High OFO | Low OFO | Total |
| Monday | 0 | 1 | 1 | 12 | 5 | 17 |
| Tuesday | 1 | 0 | 1 | 4 | 12 | 16 |
| Wednesday | 1 | 1 | 2 | 7 | 12 | 19 |
| Thursday | 1 | 1 | 2 | 13 | 6 | 19 |
| Friday | 1 | 0 | 1 | 15 | 3 | 18 |
| Saturday | 0 | 0 | 0 | 25 | 2 | 27 |
| Sunday | 0 | 0 | 0 | 28 | 1 | 29 |
| Total | 4 | 3 | 7 | 104 | 41 | 145 |

III. DETAILED IMBALANCE DATA

Appendix A shows the imbalance detail for each balancing entity for each OFO day and the three days prior to the OFO.⁷ This includes the daily supply, usage and imbalance quantities based on billing data.⁸ The three types of balancing entities and the data elements shown in the tables are also described.

Appendix A also shows which entities were targeted for customer-specific OFOs and which entities met the following four criteria for significant contributors to each OFO event:

- Total imbalance on 3-prior days exceeds 10 percent and 5,000 Dth. (This definition of significant contributor is specified in Section B.3.b of the OFO Settlement.⁹)
- Total imbalance on 3-prior days exceeds 5,000 Dth.
- Total imbalance on 3-prior days exceeds 10 percent of usage.
- During a Customer-Specific OFO, both the imbalance and the supply increase during a high inventory OFO (or decrease during a low inventory OFO) by over 5,000 Dth on the OFO day.

The last three measures are added to provide more information for evaluating which entities may be contributing to an OFO event.

Appendix B contains detailed data for each OFO event for pipeline imbalances, net market center imbalances, pipeline balancing provided by allocated “balancing” storage, and

⁷ See Section C.1.f.(1), page 5, of the OFO Settlement.

⁸ The billing data for CPGs is based on their “Determined Usage”, which is the forecast on the morning of flow day.

⁹ This is one of the issues listed in the OFO Settlement to be explored by the OFO Forum.

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pipeline inventory levels based on operating data.¹⁰ Also included is a full description of each data element shown in the tables.

IV. DISCUSSION AND RECOMMENDATIONS

This section of the OFO Report provides PG&E's comments and observations of the data presented, and also offers PG&E's recommendations for possible change.¹¹

A. Drivers of OFO Events

The operational data for the quarter, contained in Appendix B, reveals several trends that have been previously identified in the prior three quarterly reports. While each OFO event has unique operational circumstances that led to the pipeline inventory being forecast outside the operating limits, the data shows several conditions that have been common factors leading to OFOs. The conditions that most frequently have been identified as prominent factors leading to an OFO over the past year include:

- A large total customer imbalance, greater than 100 MMcf^{d2}, created on at least one day during the three days prior to an OFO.
- The pipeline inventory leading into the days prior to an OFO already at or near the pipeline inventory limit.

Additionally, especially during the past two quarters, pipeline imbalances that were largely attributed to Core Load forecast error appeared to contribute to a number of OFO events. This forecast error has been associated with sudden, dramatic weather and temperature changes.

Recommendation: PG&E will maintain the existing procedures and provisions agreed to in the OFO Settlement. PG&E will continue to monitor and review future data.

B. Market Center Imbalances

As shown in Appendix B, the Market Center had minor imbalances prior to two OFOs during the quarter. However, these were not significant factors in either of these OFO events. In the first case the imbalance actually helped lower the inventory prior to the February 5th High Inventory OFO. In the second case the imbalance occurred three days prior to the February 21st OFO, when the inventory was still in the middle of the pipeline limits.

Market Center activity is managed on a daily basis utilizing available storage assets, and does not rely on either pipeline inventory or storage allocated to pipeline balancing. A Market Center imbalance occurs when the net contractual Market Center activity exceeds the net physical storage capacity available to perform Market Center activity.

¹⁰ This data is required by Sections C.1.f.(2), (3), (4), and (5) of the OFO Settlement.

¹¹ The OFO Settlement Agreement specified that the quarterly OFO report would contain "any proposed changes to any OFO and balancing procedures and/or methodology addressed in this Settlement." See Section C.1.f.6, page 5.

¹² The 100 Mdth is simply an assumption to provide a perspective. It does not represent any specific operating parameter or imbalance threshold.

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The Market Center contractual net position is the sum of the Parks and Repays minus the sum of the Lend and Unparks. To calculate the imbalance, this net position is compared to the storage assets available for Market Center activity each day. The small imbalances created this quarter were a result of nonperformance of expected nominations during the gas supply scheduling process.

Recommendation: Continue to monitor Market Center imbalances as required by the OFO settlement.

C. Effectiveness of Customer-Specific versus System-Wide OFOs

Table 6 shows the aggregate OFO Day imbalances for all balancing entities, using the data in Appendix A. There were only seven OFOs and three customer-specific OFOs during the quarter. This limited data does not enable conclusive trends to be identified. However, this table does reveal a better response to system-wide OFOs compared to customer-specific OFOs for Low Inventory OFOs. This result is expected to some degree since system-wide OFOs affect all customers.

Additionally, the response to the one high inventory customer-specific OFO was greatly influenced by the receipt point capacity allocation event that occurred on the same day. As discussed earlier in this report, the receipt point capacity allocation reduced the overall supply receipts by about 350 MMcf. This “trimming” was the primary driver in reducing the pipeline inventory during this customer-specific OFO.

Table 6: Net OFO Day Total Customer Imbalances

| High Inventory OFO Events | | | | | |
|----------------------------------|-------------|--------------------------|-------------------------------|-------------|--------------------------|
| System-Wide OFOs | | | Customer-Specific OFOs | | |
| Date | Toler. Band | Total Net Imbalance, Dth | Date | Toler. Band | Total Net Imbalance, Dth |
| Feb 5 | 0% | +130,606 | Mar 20 | 1% | -193,784 |
| Mar 21 | 1% | -28,017 | | | |
| Mar 22 | 3% | +35,908 | | | |
| Average | | +46,165 | Average | | -193,784 |
| Low Inventory OFO Events | | | | | |
| System-Wide OFOs | | | Customer-Specific OFOs | | |
| Date | Toler. Band | Total Net Imbalance, Dth | Date | Toler. Band | Total Net Imbalance, Dth |
| Feb 1 | 2% | +212,288 | Feb 21 | 2% | +42,676 |
| | | | Feb 26 | 2% | -175,456 |
| Average | | +212,288 | Average | | -66,390 |

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Recommendation: Given the general improvement trend in the response to customer-specific OFOs, PG&E recommends continuing to keep the basic approach for calling customer-specific OFOs intact for now.

D. Significant Contributors Leading Up To OFO Days

Within the total aggregate customer imbalance, certain entities are contributing more to packing (or drafting) the pipeline inventory than others. The OFO Settlement identified “significant contributors” as an issue for discussion in the OFO Forum. The purpose of defining significant contributors is to identify if there is any systematic behavior and to focus on possible corrective measures. Appendix A provides data to help this discussion.

The summary table in Appendix A indicates that the significant contributors per the Settlement definition¹³ are largely NBAAs. Additionally, several of the CPG balancing entities (CTARGAS) and a few of the larger NGSAs were also identified as significant contributors. During the quarter, 19 of the 23 NBAA balancing entities and 4 of the 16 CTARGAS balancing entities met the significant contributor criteria at least one time.

The correlation between balancing entities identified as significant contributors and those targeted by customer-specific OFOs during this quarter continued to show improvement when compared to the initial quarterly report period. However, it is worth noting again that the criteria and data to identify a significant contributor versus a targeted entity are different. Significant contributor, as defined in the Settlement, is based on actual supply and demand billing data for the three days prior to an OFO event. The criteria for targeting entities for a customer-specific OFO is based on a forecast of supply and demand, made the day prior to the OFO day.

Recommendation: PG&E recommends continuing to monitor the relationship between significant contributor and targeted entities over the next several quarters.

E. Significant Contributors On OFO Days

In the previous Quarterly Reports, PG&E identified an issue where some non-targeted balancing entities during a Customer-Specific OFO would create additional imbalances that further exacerbated the operational conditions. While this continues to be a concern, the magnitude of the problem was much less during the most recent quarter. There were only three customer-specific OFOs. Additionally, only one entity was targeted for one event and two entities for another. This greatly limited the opportunity for this type of activity.

Recommendation: This issue was discussed at the August 29, 2000 OFO Forum meeting. The participants at the Forum meeting generally preferred the following two approaches among the alternatives discussed:

¹³ There are balancing entities with total imbalances over the three days prior to the OFO which exceed 5,000 Dth and 10% of usage.

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- Add those entities who act adversely to an announced customer-specific OFO (or those with multiple occurrences) to the “targeted” entity list for future customer-specific OFOs, and/or
- Call a customer-specific OFO during the gas day on those entities who are acting adverse to the OFO

PG&E agreed to further monitor the issue and present a more refined proposal at a future OFO Forum meeting, if necessary. This continues to be the current plan of action.

F. California Production Imbalances

California gas production is currently providing about 200 MDth per day of gas supply to the PG&E system. Imbalances between the scheduled nominations and actual gas production from California gas wells delivering into the PG&E pipeline system are managed through California Production Balancing Agreements (CPBAs). The CPBA provides a monthly balancing mechanism at the gas well meter. While there are numerous differences, the CPBA generally works in much the same manner as an NBAA providing monthly balancing at an end-use customer meter. A significant difference is that CPBAs are not subject to OFO noncompliance charges.

PG&E has observed that daily imbalances under CPBAs on OFO days have tended to adversely contribute to operational imbalances and raised this issue at the August 29th OFO Forum. Table 7 shows the net aggregate imbalance from the California gas production wells delivering supply into the PG&E pipeline system for each of the OFO days during this report period.

Table 7: California Production Imbalances on OFO Days

| OFO Date | OFO Type | OFO Tolerance Band | CA Production Imbalance | Percent Production Imbalance | Exceeds OFO Tolerance Band |
|-------------|----------|--------------------|-------------------------|------------------------------|----------------------------|
| February 1 | Low | 2% | -5,258 | -2.5% | X |
| February 5 | High | 0% | 5,291 | 2.7% | X |
| February 21 | Low | 2% | -5,123 | -2.6% | X |
| February 26 | Low | 2% | 1,170 | 0.6% | |
| March 20 | High | 1% | -11,421 | -6.8% | |
| March 21 | High | 1% | -1,155 | -0.7% | |
| March 22 | High | 3% | 3,557 | 2.0% | |

A positive imbalance means more gas was delivered into the pipeline system than was scheduled through the nomination process. A positive imbalance adversely impacts the system during a high inventory OFO. A negative imbalance means less gas was delivered into the pipeline system than was scheduled and has adverse impacts under low inventory OFOs.

On about half of the OFO days, the net California gas production imbalance exceeded

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the OFO tolerance band and further contributed to the operational problems that the OFO was trying to resolve.

Recommendation: Several potential changes were discussed at the August 29th OFO Forum. However, the recommendation is to continue to monitor this issue and talk to affected parties about potential options to minimize the impact on pipeline operations during an OFO event.

V. CONCLUSIONS

A. Quarter Summary

The detailed balancing entity and operational data provided and discussed in this report support the following conclusions.

- ❖ There are a number of factors that led to the operational conditions that resulted in an OFO being called. Customer (CTARGAS, NBAA and NGS) imbalances in the days prior to an OFO were identified as a significant contributor on numerous occasions. Additionally, a pipeline imbalance due to core load forecast error can also be a contributing factor.
- ❖ PG&E's Market Center has not been a significant contributor to OFOs.
- ❖ System-wide OFOs continue to be more effective than customer-specific OFOs in bringing pipeline inventory back into acceptable levels. However, the response from customer-specific OFOs has improved.
- ❖ Concerns continue that some non-targeted balancing entities will adversely increase their imbalances during announced customer-specific OFOs. This reduces the effectiveness of customer-specific OFOs and can lead to subsequent system-wide OFOs.
- ❖ The California gas production daily imbalances can adversely impacted the pipeline operations on OFO days. However, this situation appears to have improved since the issue was raised at the August 29, 2000 OFO Forum.

These conclusions are consistent with the findings from the previous quarterly reports.

B. Year Summary

This quarterly report concludes the first year of operation under the OFO Settlement. Since the April 1, 2000 implementation of the OFO Settlement, the frequency and impact of OFOs has been greatly reduced. The success of the OFO Settlement can be highlighted by the following statistics when compared to the year prior to implementation:

- The number of System-Wide OFOs declined by 63% (18 compared to 49).
- The total number of OFOs declined by 20% (41 compared to 51).

This significantly exceeds the goal, established in the OFO Settlement, of reducing System-Wide OFOs by 25%.

These Quarterly Reports have served a valuable function in providing data and analysis as to the factors that lead up to OFO events. These reports, and the daily operating data

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provided on the Pipe Ranger web site, have greatly improved the predictability and general understanding of the OFO process.

However, the data in each of the four quarterly reports over the past year has led to essentially the same conclusions as listed in the section above. Therefore, future quarterly reports will focus on simply providing the imbalance and operational data required. They will not contain repetitive analysis and discussion. This will significantly shorten the report, making it easier to review. All the detail data contained in the report appendixes will continue to be provided, as specified in the OFO Settlement.

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Appendix A: Detailed OFO Imbalance Report by Balancing Entity

1. Definition of Balancing Entity Types

There are three types of Balancing Entities on the PG&E system. The first type is a Core Procurement Group (CPG), which includes PG&E’s Core Procurement Department and all Core Transport Agents (CTAs) – also called Gas Energy Service Providers. These are indicated as ‘CTARGAS’.

The second type is an agent or gas marketer managing a Noncore Balancing Aggregation Agreement (NBAA). These are indicated as “NBAA.” An NBAA aggregates a group of noncore end-use customers into one entity for balancing purposes. An NBAA group can range from several customers up to over one hundred individual end-use customers. The NBAA agent is financially responsible for all imbalance charges, including OFO noncompliance charges.

The third type is an individual noncore end-use customer. These individual customers maintain an imbalance account under their Natural Gas Service Agreement, indicated as “NGSA.” Sometimes the balancing for these NGSAs is managed by the end-use customer, and sometimes by an agent or marketer; however, each is required to balance individually during an OFO event.

The number of Balancing Entities varies from month to month, with an average of about seventy-five during the quarter. Table A-1 shows the approximate number of each balancing entity type and their average OFO day volume for the quarter.

Table A-1: Balancing Entity Types

| Balancing Entity Type | Number of Entities | Average OFO Day Volume, (Mdt) |
|-------------------------|--------------------|-------------------------------|
| Core Procurement Groups | 14-16 | 1065 |
| NBAA Groups | 21-23 | 1365 |
| Individual NGSAs | 13-25 | 82 |
| Total | ~50 | 2512 |

Note that the average volume in Table A-1 is based only upon the demand on the OFO days during the quarter.

2. Balancing Entity Imbalance Data Elements

The data in this Appendix is organized by each of the eleven OFO events during the quarter. This includes the daily supply, usage and imbalance quantities for the OFO Day and 3-days-prior for each balancing entity. Also, targeted entities during customer-specific OFOs and various calculations of significant contributor are included, along with a summary of these by balancing entity for all OFOs combined.

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Appendix A – Detailed OFO Imbalance Report by Balancing Entity

The following describes the data elements in the Appendix A tables:

Balancing Entity ID #: Each balancing entity is identified by a numerical identifier and the type of balancing entity, and not by name. If a customer operates two separate balancing entity accounts (e.g. an NBAA and a CPG (or CTARGAS)), the same numerical identifier is used for each entity.

Balancing Entity Type: (See discussion above.)

Supply Scheduled Volume: The quantity of gas supply, in decatherms (Dths), received into the PG&E system for delivery to the end-use customer(s) for that balancing entity. This quantity is the result of the gas supply nomination process. This process is the same for all types of balancing entities.

Usage: The quantity of gas, in decatherms (Dths), that is delivered off the PG&E system to the end-use customer(s) for that balancing entity. This is the demand deemed to be used, in order to determine the daily imbalance. For noncore customers (i.e., NBAA or NGS), the usage is equal to the actual daily meter reading quantities. For core customers (i.e. CTARGAS) the usage is equal to the Determined Usage for all non-OFO days and is equal to the 24-Hour Forecast for all OFO Days. It is important to note that both the Determined Usage and the 24-Hour Forecast are forecasts that are made 24-hours and 48-hours prior to the end of the gas day, respectively.

Daily Imbalance: This is simply the *Supply Scheduled Volume* minus the *Usage*. A positive number indicates an over-delivery of supply (more supply than demand) and a negative number indicates an under-delivery of supply (less supply than demand).

3-Day Prior Net Imbalance: The sum of the *Daily Imbalances* for the three days prior to the OFO Day.

3-Day Prior Percentage Imbalance: The *3-Day Prior Net Imbalance* divided by the total *Usage* for the three days prior to the OFO Day. This represents the average percentage imbalance for these three days.

Targeted under Customer-Specific OFO: This column indicates those balancing entities that were targeted under each customer-specific OFO.

Significant Contributor: Two significant contributor columns are shown. The first indicates those balancing entities with total imbalances greater than 5,000 Dth and 10 percent of its usage in the three days leading up to each system-wide or customer-specific OFO, as defined in the OFO Settlement.¹⁴ The second significant contributor

¹⁴ OFO Settlement, Section B.3.b, page 3.

Subject to Rule 51 of the CPUC Rules of Practice and Procedure, Rule 601 et seq. of the FERC Rules of Practice, Rule 408 of the Federal Rules of Evidence, and Section 1152 of the California Evidence Code

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Appendix A – Detailed OFO Imbalance Report by Balancing Entity

column identifies those balancing entities which increased both their supply and imbalance by more than 5,000 Dth on the OFO day, during a customer-specific OFO.

Subject to Rule 51 of the CPUC Rules of Practice and Procedure,
Rule 601 et seq. of the FERC Rules of Practice, Rule 408 of the Federal
Rules of Evidence, and Section 1152 of the California Evidence Code

Appendix B: Detailed OFO Imbalance Report for Pipeline

1. Data Background:

All data in this Appendix related to gas volumes are expressed in thousands of decatherms (Mdth) and are for the gas day, which begins at 7:00 AM on the date and ends at 7:00 AM on the following day. This is operating data that is compiled approximately 4 hours after the end of the gas day and represents the best information about flows, volumes, and inventories available at that time.

The ending inventory on the OFO day will often not exceed the criteria for an OFO. OFOs are called using the forecast of the ending inventory on the OFO day, and for this reason, the actual ending inventory will be lower than the forecast ending inventory if the OFO has been effective.

The following sign convention has been employed in the spreadsheet. Any activity that decreases the pipeline system inventory such as a negative customer imbalance or a storage injection is shown with a (-) sign. Activities that increase the pipeline system inventory are positive and are shown without a sign.

2. Data Elements

Beginning Inventory: The calculated volume of gas in the PG&E pipeline system at the beginning of the gas day.

Ending Inventory: The calculated volume of gas in the PG&E pipeline system at the end of the gas day. This forecast of ending inventory is used to determine whether an OFO is called, and is forecast and reported on the Pipe Ranger 5 times each day.

Pipeline Storage Balancing: The PG&E storage that was used to reduce the affect of imbalances on changes in the pipeline system inventory. This value is calculated by subtracting the scheduled storage activity including core, noncore, and GGMC Park/Lend activity from the net PG&E storage activity. There is 50 MMcf of daily storage injection and 70 MMcf of daily storage withdrawal assigned to the pipeline storage balancing activity.

Total Customer Imbalance: The total customer imbalance is the total supply scheduled for on-system customers minus the total on-system customer usage. The usage for noncore customers is based on operational meters. The usage for core customers is based on the Determined Usage. The Core Determined Usage is derived from the core load forecast prepared at approximately 7:30 AM at the beginning of the gas day.

Pipeline Imbalance Detail: This calculation is provided to show the contribution of core load forecast error on the day of gas flow to the total pipeline imbalance.

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Appendix B – Detailed OFO Imbalance Report For Pipeline

Due to Core Forecast Differences: This is the difference between the Core Determined Usage which is forecast at the beginning of the gas day and the Core calculated usage. The Core usage is calculated approximately four hours after the end of the gas day using daily data on interconnect and storage volumes, noncore daily usage volumes from the Automatic Meter Reading (AMR) system, and the change in the pipeline system inventory.

All Other Causes: This represents the sum of all the other contributors to pipeline imbalances including imbalances with interconnecting pipelines and storage facilities (other than PG&E), imbalance in California Gas Well production, shrinkage over or under collection.

GGMC Net Scheduled Pack Draft: This value is the net sum of the scheduled nominations for PG&E storage activity for scheduled GGMC Parks, Repays, Lends, and Unparks for the gas day. When the value is a negative (-) it means that storage injection is required to offset a net Pack (Park or Repay) position.

GGMC Net Pack Allocated: This is the PG&E storage injection capacity available to GGMC to facilitate their daily parking (Parks and Repays) activity. The amount of daily parking is limited to this quantity so that this activity does not adversely increase the pipeline system inventory and represents one of the measures to determine whether there was an imbalance created by the GGMC on any given day.

GGMC Net Draft Allocated: This is the PG&E storage withdrawal capacity available to GGMC to facilitate their daily lending activity. The amount of daily lending is limited to this quantity so that this activity does not adversely decrease the pipeline system inventory and represents one of the measures to determine whether there was an imbalance created by the GGMC on any given day.

GGMC Imbalance: This is determined by calculating the amount the *GGMC Scheduled Pack Draft* is outside the *Allocated Pack-Draft* range. These values represent the impact of the GGMC on the pipeline system inventory on any given day.