

Pacific Gas and Electric Company



California Gas Transmission

OFO Report
Third Quarter 2000
(July – September)

October 30, 2000

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 second OFO Report. 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.”

This Report covers the third quarter of 2000 – July 1 through September 30. 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.

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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 detailed in Appendix B of this report for each OFO day and the prior three days.

II. OFO EVENTS DURING THE THIRD QUARTER 2000

A. OFO Event Summary

During the quarter ending September 30, 2000, PG&E called a total of twelve (12) OFO events. Seven (7) of these were system-wide OFOs and five (5) were customer-specific OFOs. During this quarter, eight (8) of the OFO events were a result of high pipeline inventory and four (4) were a result of low pipeline inventory. There were no EFO or "trimming" events during this quarter. Table 2 provides the specific parameters of each OFO event.

Table 2: OFO Event Summary

Date	Type	Cause / Comments
Wednesday July 5, 2000	<ul style="list-style-type: none"> • System-Wide • <u>High Inventory</u> • Stage 1 at \$0.25/Dth • Tolerance Band: 1% 	<ul style="list-style-type: none"> • Projected beginning inventory of 4,780 MMcf and ending inventory of 4,697 MMcf exceeded upper limit of 4,500 MMcf. • Customer-Specific OFO not called because targeted customers' forecast imbalance relief of -63,137 Dth was insufficient. • Net OFO day customer imbalance: -44,593 Dth or -2.4% of usage
Thursday July 6, 2000	<ul style="list-style-type: none"> • Customer-Specific • <u>High Inventory</u> • Stage 2 at \$1.00/Dth • Tolerance Band: 1% • Customers: 7 	<ul style="list-style-type: none"> • Projected beginning inventory of 4,549 MMcf and ending inventory of 4,518 MMcf exceeded upper limit of 4,500 MMcf. • Net OFO day customer imbalance: +91,084 Dth or 5.1% of usage

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Date	Type	Cause / Comments
Friday July 7, 2000	<ul style="list-style-type: none"> • System-Wide • <u>High Inventory</u> • Stage 2 at \$1.00/Dth • Tolerance Band: 1% 	<ul style="list-style-type: none"> • Projected beginning inventory of 4,589 MMcf and ending inventory of 4,724 MMcf exceeded upper limit of 4,500 MMcf. • Customer-Specific OFO not called because targeted customers' forecast imbalance relief of -211,192 Dth was insufficient • Net OFO day customer imbalance: -133,446 Dth or -7.6% of usage
Saturday July 8, 2000	<ul style="list-style-type: none"> • System-Wide • <u>High Inventory</u> • Stage 2 at \$1.00/Dth • Tolerance Band: 1% • 	<ul style="list-style-type: none"> • Projected beginning inventory of 4,566 MMcf and ending inventory of 4,832 MMcf exceeded upper limit of 4,500 MMcf. • Customer-Specific OFO not called because targeted customers' forecast imbalance relief of -60,099 Dth was insufficient • Net OFO day customer imbalance: -83,178 Dth or -5.5% of usage
Friday July 21, 2000	<ul style="list-style-type: none"> • System-Wide • <u>Low Inventory</u> • Stage 2 at \$1.00/Dth • Tolerance Band: 1% • 	<ul style="list-style-type: none"> • Projected beginning inventory of 3,685 MMcf and ending inventory of 3,548 MMcf was below lower limit of 4,000 MMcf. • Customer-Specific OFO not called because targeted customers' forecast imbalance relief of 311,000 Dth was insufficient • Net OFO day customer imbalance: +238,610 Dth or +9.9% of usage
Tuesday July 25, 2000	<ul style="list-style-type: none"> • System-Wide • <u>Low Inventory</u> • Stage 2 at \$1.00/Dth • Tolerance Band: 2% • 	<ul style="list-style-type: none"> • Projected beginning inventory of 3,948 MMcf and ending inventory of 3,887 MMcf was below lower limit of 4,000 MMcf. • Customer-Specific OFO not called because more than 10 entities would be targeted. • Net OFO day customer imbalance: +220,345 Dth or +8.9% of usage
Tuesday August 29, 2000	<ul style="list-style-type: none"> • Customer-Specific • <u>Low Inventory</u> • Stage 2 at \$1.00/Dth • Tolerance Band: 1% • Customers: 10 	<ul style="list-style-type: none"> • Projected beginning inventory of 3,939 MMcf and ending inventory of 3,800 MMcf was below lower limit of 4,000 MMcf • Net OFO day customer imbalance: -30,327 Dth or -1.1% of usage
Wednesday August 30, 2000	<ul style="list-style-type: none"> • System-Wide • <u>Low Inventory</u> • Stage 3 at \$5.00/Dth • Tolerance Band: 1% 	<ul style="list-style-type: none"> • Projected beginning inventory of 3,969 MMcf and ending inventory of 3,970 MMcf was below lower limit of 4,000 MMcf. • Customer-Specific OFO not called because more than 10 entities would be targeted. • Net OFO day customer imbalance: +470,495 Dth or +18.3% of usage
Sunday September 10, 2000	<ul style="list-style-type: none"> • Customer-Specific • <u>High Inventory</u> • Stage 2 at \$1.00/Dth • Tolerance Band: 3% • Customers: 7 	<ul style="list-style-type: none"> • Projected beginning inventory of 4,473 MMcf and ending inventory of 4,632 MMcf exceeded upper limit of 4,500 MMcf. • Net OFO day customer imbalance: -71,726 Dth or -3.1% of usage

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Date	Type	Cause / Comments
Friday September 22, 2000	<ul style="list-style-type: none"> • Customer-Specific • <u>High Inventory</u> • Stage 2 at \$1.00/Dth • Tolerance Band: 4% • Customers: 6 	<ul style="list-style-type: none"> • Projected e beginning inventory of 4,570 MMcf and ending inventory of 4,650 MMcf exceeded upper limit of 4,600 MMcf. • Net OFO day customer imbalance: -175,027 Dth or -6.8% of usage
Saturday September 23, 2000	<ul style="list-style-type: none"> • System-Wide • <u>High Inventory</u> • Stage 3 at \$5.00/Dth • Tolerance Band: 2% 	<ul style="list-style-type: none"> • Projected beginning inventory of 4,524 MMcf and ending inventory of 4,747 MMcf exceeded upper limit of 4,500 MMcf. • Customer-Specific OFO not called because targeted customers' forecast imbalance relief of -255,236 Dth was insufficient. • Net OFO day customer imbalance: -189,711 Dth or -8.1% of usage
Friday September 29, 2000	<ul style="list-style-type: none"> • Customer-Specific • <u>High Inventory</u> • Stage 2 at \$1.00/Dth • Tolerance Band: 10% • Customers: 10 	<ul style="list-style-type: none"> • Projected beginning inventory of 4,427 MMcf and ending inventory of 4,639 MMcf exceeded upper limit of 4,600 MMcf. • Net OFO day customer imbalance: -65,475 Dth or -2.6% of usage

B. System-Wide OFO Reduction Objective

One objective of the OFO Settlement Agreement was to “significantly reduce the number of system-wide OFOs on the PG&E system.”² 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.³ As shown in the following table, the number of system-wide OFOs has declined by 61% for the previous quarter compared to the same quarter in the prior year. The total number of OFOs also declined from 18 to 12. During the first six months under the OFO Settlement, the number of system-wide OFOs was reduced 63%. The OFO Settlement was designed to use more customer-specific OFOs, which is happening. Even so, the total number of OFOs has decreased under the OFO Settlement by almost 30%.

² See page 1 of OFO Settlement.

³ 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	---	---	---	
Jan. – March	10	0	10	---	---	---	
Total	49	2	51	---	---	---	

C. Distribution of OFOs

OFO events continue to occur over a series of two or more consecutive days. A series of four High Inventory OFOs occurred right after the July 4th holiday period. At the end of both July and August there were two-day OFO events. Then in September, there were four High Inventory OFOs, with two of these occurring back-to-back. 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	
July	3	2	5	1	0	1	6
August	0	1	1	0	1	1	2
September	1	0	1	3	0	3	4
Total	4	3	7	4	1	5	12
Total Since April 1998	81	29	109	14	3	17	127

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. The majority of the High Inventory events occurred on the weekend, or the Friday leading into the weekend. During the previous quarter, the additional two weekday High Inventory OFO events were associated with the July 4th holiday. The July 4th holiday period is historically among the lowest demand periods on the CGT system.

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

	July-Sept, 2000 Quarter			Total Since April 1998		
	High OFO	Low OFO	Total	High OFO	Low OFO	Total
Monday	0	0	0	12	3	15
Tuesday	0	2	2	3	10	13
Wednesday	1	1	2	6	8	14
Thursday	1	0	1	11	5	16
Friday	3	1	4	13	3	16
Saturday	2	0	2	23	2	25
Sunday	1	0	1	27	1	28
Total	8	4	12	95	32	127

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.⁴ This includes the daily supply, usage and imbalance quantities based on billing data.⁵ The three types of balancing entities and the data elements shown in the tables are also described. There was a significant increase in the number of balancing entities during the last half of September (the last three OFOs during the quarter). This was due to one NBAA dissolving its balancing agreement, and approximately 35 NGSAs accounts then being required to balance individually. These customers have subsequently joined other NBAA balancing entities.

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.⁶)
- Total imbalance on 3-prior days exceeds 5,000 Dth.
- Total imbalance on 3-prior days exceeds 10 percent of usage.
- 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.

⁴ See Section C.1.f.(1), page 5, of the OFO Settlement.

⁵ The billing data for CPGs is based on their “Determined Usage”, which is the forecast on the morning of flow day.

⁶ This is one of the issues listed in the OFO Settlement to be explored by the OFO Forum.

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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 pipeline inventory levels based on operating data.⁷ 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 initial comments and observations of the data presented, and also offers PG&E’s recommendations for possible change.⁸

A. Drivers of OFO Events

Reviewing the data in Appendix B reveals two conditions that seem most prominent as factors during the three days leading to an OFO. These two factors are:

- At least one day had a large total customer imbalance, greater than 100 MMcf⁹, during the three days.
- The pipeline inventory leading into the days prior to an OFO was already at or near the pipeline inventory limit.

These are the same two observations from the previous Quarterly Report.

In every OFO event or series of OFO events during the quarter, there was at least one day leading into the OFO Day where the total customer imbalance was greater than 100 MMcf. Typically, there were multiple occurrences of these large daily imbalances.

In three of the four Low Inventory OFOs and five of the eight High Inventory OFOs, the pipeline inventory three (3) days before the OFO Day was already at or near the stated pipeline inventory limits. This is indicative of another trend that is supported by this operational data. That is, once the inventory moves toward the upper or lower limit, it tends to stay close to the limit. This occurs sometimes even after an OFO is called, especially customer-specific OFOs. Customers often do not provide enough relief to move the pipeline inventory back into the acceptable range, which can lead to a series of OFO events. As noted in Section II.C above, rolling OFOs continue to be a problem, and are often led by a customer-specific OFO followed by a system-wide OFO.

⁷ This data is required by Sections C.1.f.(2), (3), (4), and (5) of the OFO Settlement.

⁸ 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.

⁹ 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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A last observation is that holiday periods continue to have the most significant rolling OFO events. A similar pattern was also observed prior to the OFO Settlement.

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. PG&E will attempt to develop options to prevent “rolling” OFOs, which can be very disruptive to PG&E operations and the market. These would be presented for consideration at a future OFO Forum.

B. Market Center Imbalances

As shown in Appendix B, the Market Center imbalances did not contribute to OFOs during the quarter. 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. 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. For each OFO and the three prior days, the Market Center imbalance was zero, which is typical. This data is shown in Appendix B.

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

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

PG&E continued to experience a more effective overall net customer imbalance contribution from system-wide OFOs, when compared to customer-specific OFOs. As discussed in Section IV.A, above, PG&E’s pipeline inventory is frequently at or beyond the operating limits by the time an OFO is implemented. Therefore, PG&E’s objective is frequently not only to stop creating additional imbalances, but also to move the pipeline inventory away from the operating limit. When the aggregate customer response to the OFO is weak, the pipeline inventory remains at or near the limit, usually leading to a series of OFO events.

Table 6 shows the aggregate OFO Day imbalances for all balancing entities, using the data in Appendix A. This table reveals a better response to system-wide OFOs compared to customer-specific OFOs. This result is expected to some degree since system-wide OFOs affect all customers. The data for this report does show a general improvement since the prior quarter in the response to customer-specific OFOs.

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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
Jul 5	1%	-44,593	Jul 6	1%	+91,084
Jul 7	1%	-133,446	Sep 10	3%	-71,726
Jul 8	1%	-83,178	Sep 22	4%	-175,027
Sep 23	2%	-189,711	Sep 29	10%	-65,475
Average		-112,732	Average		-55,286
Low Inventory OFO Events					
System-Wide OFOs			Customer-Specific OFOs		
Date	Toler. Band	Total Net Imbalance, Dth	Date	Toler. Band	Total Net Imbalance, Dth
Jul 21	1%	+238,610	Aug 29	1%	-30,327
Jul 25	2%	+220,345			
Aug 30	1%	+470,495			
Average		+309,817	Average		-30,327

Recommendation: Given the improvement in the response to customer-specific OFOs, PG&E recommends continuing to keep the basic approach for calling customer-specific OFOs intact for now. PG&E will continue to monitor and report on this issue in future Reports.

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. These are balancing entities that are creating adverse imbalances on the system. 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 definition¹⁰ 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, 21 of the 25 NBAA

¹⁰ 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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balancing entities and 6 of the 17 CTARGAS balancing entities met the significant contributor criteria at least one time. The number of CTARGAS entities being identified as a significant contributor has increased significantly since the last report. In the previous quarter, not a single CTARGAS entity met this significant contributor criteria.

The following table identifies balancing entities whose total imbalance on the three days prior to the OFO exceeded the 5,000 Dth and 10% of usage criteria for six (6) or more of the twelve OFOs called during this quarter. This illustrates there are a number of balancing entities that consistently create adverse imbalances.

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Table 7: Significant Contributors per OFO Settlement Definition

Balancing Entity ID	Entity Type	Number of OFO Events Meeting Criteria
2771	CTARGAS	6
1281	NBAA	7
1864	NBAA	8
1922	NBAA	6
2771	NBAA	6
4760	NBAA	6
0051	NGSA	8

There was an improved correlation between balancing entities identified as significant contributors and those targeted during customer-specific OFOs during this quarter as compared to the previous quarter. 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. Additional data may identify trends or issues that can be discussed in the OFO Forum.

E. Significant Contributors On OFO Days

In the previous Quarterly Report, 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. This continues to be an issue during the most recent quarter.

To attempt to quantify this issue, PG&E calculated which non-targeted balancing entities increased (decreased) both their imbalance and their supply by more than 5,000 Dth on the high (low) inventory OFO day compared to the prior day.¹¹ Then the total amount of the supply increase (decrease) was calculated. The

¹¹ All OFOs during the quarter were called prior to 8:00 a.m. on the day prior to the OFO day. Therefore, all balancing entities know what the pipeline situation and their own supply situation are on that prior day.

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presumption is that these non-targeted balancing entities are purchasing (selling) supplies from (to) the targeted balancing entities. The following table summarizes these results.

Table 8: Non-Targeted Entities Increasing OFO-Day Imbalances

Customer-Specific OFO Date	OFO Type	Number of Non-Targeted Entities	Increased Supply (Decreased) [Dth]
July 6	High	5	270,918
August 29	Low	4	(-181,528)
September 10	High	0	0
September 22	High	5	169,319
September 29	High	5	73,032

This activity undermines the effectiveness of customer-specific OFOs. In fact, a system-wide OFO was called on the day after three (3) of the five (5) customer-specific OFOs during the quarter. A system-wide OFO was not called after the September 10 and September 29 OFOs. Not surprisingly, these two OFO days had the lowest adverse imbalance response by non-targeted balancing entities.

Additionally, there are some customers that have both an NBAA and a CPG (CTARGAS) balancing account. These can be identified through the common *Balancing Entity ID #* in the Appendix A data. Under the existing customer-specific OFO procedures, one balancing entity can be targeted and the other not. In this circumstance, the customer can simply shift an imbalance from its targeted balancing entity to its non-targeted entity. This has occurred on numerous occasions. However, this analysis shows only a small number of balancing entities are acting contrary to the pipeline’s announced needs to reduce or increase supplies for the OFO day.

Recommendation: PG&E will continue to monitor this issue and develop potential resolutions for discussion at a future OFO Forum meeting. This issue was discussed at the August 29th OFO Forum meeting. The participants at the Forum meeting generally preferred the following two approaches among the alternatives discussed:

- 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.

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F. California Production Imbalances

California gas production currently provides about 160 MDth per day of gas supply on 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 a California Production Balancing Agreement (CPBA). The CPBA provides a monthly balancing mechanism at the gas well meter. While there are numerous differences, the CPBA 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 non-compliance 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 9 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 9: California Production Imbalances on OFO Days

OFO Date	OFO Type	OFO Tolerance Band	CA Production Imbalance	Percent Production Imbalance
July 5	High	1%	54,786	34.8%
July 6	High	1%	28,679	18.5%
July 7	High	1%	26,037	16.0%
July 8	High	1%	42,991	27.1%
July 21	Low	-1%	(10,677)	-6.9%
July 25	Low	-2%	(17,306)	-11.4%
August 29	Low	-1%	1,337	0.8%
August 30	Low	-1%	(17,385)	-10.4%
September 10	High	3%	778	0.5%
September 22	High	4%	3,261	1.9%
September 23	High	2%	20,571	11.5%
September 29	High	10%	(14,877)	-8.4%

A positive imbalance means more gas was delivered into the pipeline system than was scheduled through the nomination process. A positive imbalance occurred during all but one of the high inventory OFOs. A negative imbalance means less gas was delivered into the pipeline system than was scheduled. This occurred on three of the four low inventory OFO days. On the vast majority of the OFO days, the net California gas production imbalance further contributed to the operational problems that the OFO was trying to resolve. The eight highlighted rows in Table 9 indicate days when the California gas production imbalance exceeded the allowable tolerance band under the OFO.

Recommendation: Several potential changes were discussed at the August 29th OFO Forum. The parties expressed a preference for a potential change to the

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nomination rules that would not allow nomination changes for California production after an OFO was called. 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

As shown in this Report, there has been a reduction in the total number of OFOs and in the number of system-wide OFOs since the implementation of the OFO Settlement. From the detailed balancing entity and operational data provided and discussed in this report, the following conclusions are drawn:

- ❖ There are a number of factors that lead to the operational conditions which resulted in an OFO being called. Customer imbalances from many NBAAAs and a few NGSAs and Core Procurement Groups were identified as significant contributors on numerous occasions.
- ❖ For this quarter, there was no significant imbalance contribution from PG&E's Market Center.
- ❖ High inventory OFOs tend to occur more frequently on the weekend, as declines in demand are not matched by reduced supplies. Low inventory OFOs tend to occur more frequently during weekdays, when demand tends to be higher.
- ❖ System-wide OFOs continue to be more effective than customer-specific OFOs in bringing pipeline inventory back into acceptable levels, although the response from customer-specific OFOs has improved.
- ❖ The data shows non-targeted balancing entities actually adversely increasing 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 have adversely impacted the pipeline operations on OFO days. However, this situation appears to have improved since the issue was raised at the August 29th OFO Forum.

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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	17	480
NBAA Groups	22	1,610
Individual NGSAs	30 - 70	190
Total	75	2,280

During the quarter there was a large swing in the number of individual end-use customers (NGSAs) balancing on the system. This was largely due to one of the NBAA's exiting the balancing service business during the quarter. This left approximately 35 end-use customers to provide balancing services on their own for a portion of this period. These end-use customers have since chosen another NBAA.

Of the total remaining NGSAs, only about ten (10) had significant balancing activity during this quarter. Some of these are seasonal accounts with little or no usage, and others were simply inactive during the quarter. The majority of end-use customers have their imbalance activity managed through an NBAA.

2. Balancing Entity Imbalance Data Elements

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Appendix A – Detailed OFO Imbalance Report by Balancing Entity

The data in this Appendix is organized by each of the twelve 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.

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

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Appendix A – Detailed OFO Imbalance Report by Balancing Entity

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.¹² The second significant contributor column identifies those balancing entities which increased both their supply and imbalance by more than 5,000 Dth on the OFO day.

¹² OFO Settlement, Section B.3.b, page 3.

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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.

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

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Appendix B – Detailed OFO Imbalance Report For Pipeline

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.