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SoCalGas Comments on Joint Agency Workshop on Energy Reliability in Southern California

Please find attached Southern California Gas Company (SoCalGas) comments on the Joint Agency Workshop to address energy reliability in southern California as part of the 2018 Integrated Energy Policy Report Update proceeding. Please do not hesitate to reach out if you have any questions.

Additional submitted attachment is included below.



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California Energy Commission
Docket Office
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Subject: Joint Agency Workshop on Energy Reliability in Southern California, Docket Number 18-IEPR-03

Dear Chairman Weisenmiller, President Picker, and Commissioners of the California Energy Commission (CEC) and California Public Utilities Commission (CPUC):

Southern California Gas Company (SoCalGas) thanks the CEC and CPUC for conducting the May 8, 2018 Joint Agency Workshop (Joint Agency Workshop) to address energy reliability in southern California, as part of the *2018 Integrated Energy Policy Report Update (IEPR) proceeding* (Docket Number: 18-IEPR-03). SoCalGas appreciates the continued efforts of the Governor, Joint Agencies, and other parties to support energy reliability and minimize natural gas service interruptions during this summer and next winter.

Prior to the Joint Agency Workshop, on May 7, 2018, the CEC, CPUC, California Independent System Operator (CAISO), and Los Angeles Department of Water and Power (LADWP) (collectively, the Joint Agencies), issued the *Aliso Canyon Risk Assessment Technical Report Summer 2018 Assessment* (Joint Agency Summer Assessment). The Joint Agency Summer Assessment observed that “without sufficient storage inventory... energy reliability is hinging on the vagaries of the weather.”¹ SoCalGas shares the State’s concerns about energy reliability during this summer and, more so, next winter. SoCalGas will continue to work with the State and encourage policies that promote reliability and protect consumers against higher energy costs.

Earlier this year, as part of SoCalGas’ Second Injection Enhancement Plan,² SoCalGas prepared a Summer 2018 Technical Assessment (SoCalGas Technical Assessment), which is

¹ Joint Agency Summer Assessment at 4.

² See CPUC Advice No. 5275-A (Supplement - Expedited Advice Letter Requesting Approval of the Proposed Second Injection Enhancement Plan and Second Injection Enhancement Memorandum between the System Operator and the Gas Acquisition Department for Services to Maintain Summer

included as Attachment A. The SoCalGas Technical Assessment determined that, with current system conditions, SoCalGas will likely need to withdraw from the Aliso Canyon Natural Gas Storage Facility (Aliso Canyon) to meet the forecast peak summer demand and will need to implement measures to enhance storage injections and preserve inventory to meet winter inventory targets.³ We remain concerned that limitations placed on Aliso Canyon subjects families and businesses in Southern California to unnecessary uncertainty, price volatility, and higher energy costs.

The impacts to our system during the cold snap experienced this year in late-February/early-March demonstrates the importance of local natural gas storage in maintaining energy system reliability. It also shows how quickly changes in the weather, or unanticipated equipment outages can put both gas and electric supplies at risk. As demonstrated during this winter's cold snap, Aliso Canyon plays a critical role in providing reliable energy service to southern California. In July, it will be one year since the CPUC and the Division of Oil, Gas, and Geothermal Resources (DOGGR) formally determined that Aliso Canyon is safe to operate, that any risks of failure had been identified and addressed, and that well integrity had been verified,⁴ yet its use remains restricted by State policies.

Aliso Canyon remains the single most effective way to support system reliability. As such, SoCalGas requests expeditious action by the CPUC to update their California Public Utilities Code Section 715 Report (authorizing Aliso Canyon inventory levels) and Aliso Canyon Withdrawal Protocols.

SoCalGas also offers comments on the certain subjects addressed in the Joint Agency Summer Assessment and discussed and presented at the Joint Agency Workshop.

1. The Joint Agency Summer Assessment's Assumptions are Overly Optimistic

Although SoCalGas generally agrees with the reliability concerns identified in the Joint Agency Summer Assessment, its assumptions remain overly optimistic for prudent reliability planning purposes.

The Joint Agency Summer Assessment acknowledges that “[l]ast winter, the SoCalGas system avoided serious problems primarily because of unusually warm weather.”⁵

Reliability Pursuant to the March 13, 2018 “Injection Required for SoCalGas Summer Reliability and Storage Inventories” Letter from CPUC Executive Director Alice Stebbins).

³ See March 13, 2018 Letter from CPUC Executive Director Alice Stebbins to Bret Lane re: Injection Required for SoCalGas Summer Reliability and Storage Inventories (ordering SoCalGas to prepare an injection plan to rapidly achieve storage withdrawal capacity at the non-Aliso Canyon storage fields of 1,320 million cubic feet per day.).

⁴ See, e.g., July 19, 2017, SB 380 Findings and Concurrence Regarding the Safety of the Aliso Canyon Gas Storage Facility, available at:

http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/News_Room/News_and_Updates/OpenLettertoSoCalGasandPublic.pdf

⁵ Joint Agency Summer Assessment at 4.

Further, the Joint Agency Summer Assessment Presentation notes that in 2016 and 2017 “[m]anageable demands, supported largely by cooperative weather helped offset limited supply.”⁶ Finally, the Joint Agency Summer Assessment concludes that “[w]ithout sufficient storage inventory...energy reliability hing[es] on the vagaries of the weather.”⁷ For the upcoming summer and winter seasons, Californians should not have to rely on “unusual” or “cooperative” weather conditions to power their homes and businesses.

Prudent planning promotes safety and incorporates contingencies to provide sufficient system resiliency and flexibility. In our view, many of the Joint Agency Summer Assessment’s assumptions do not provide a sufficient contingency. It is possible to make overly optimistic assumptions that demonstrate the natural gas system can operate without the use of Aliso Canyon. However, prudent planning requires that we consider realistic assumptions and consequences. Only then can we establish appropriate and realistic plans and procedures for southern California.

Prudent planning should incorporate the potential for unplanned events that may impact import capabilities, customer demand, or available natural gas supply. As discussed below, the Joint Agency Summer Assessment’s reliance on 100 percent receipt point utilization, 100 percent transmission import utilization, and unrealistic minimum generation numbers places energy reliability at risk.

a. Natural Gas Receipt Point Utilization

Natural gas receipt point utilization is the amount of natural gas delivered at a SoCalGas receipt point compared to the maximum receipt point capability of that receipt point. On this item, the Joint Agency Summer Assessment indicates that “both of the new cases assume 100 percent receipt point utilization.”⁸ The assessment rationalizes full receipt point utilization by indicating that they “do not discount capacity because the authors believe it confuses the issue of behavior with true available capacity and creates the appearance of a greater need for gas from Aliso Canyon.”⁹

Supplies from the interstates come from supply basins and are scheduled the day prior to flow, with some ability to change supplies intraday. To even approach 100 percent utilization, the scheduled natural gas being delivered requires 100 percent certainty that it has some place to go the day before (customer demand or storage injections) and the entire supply chain needs to perform at 100 percent efficiency.¹⁰ Intraday changes in customer demand and supply needs further makes achieving a high utilization of the receipt points difficult.

⁶ Joint Agency Summer Assessment Presentation at Slide 8.

⁷ Joint Agency Summer Assessment at 4.

⁸ Joint Agency Summer Assessment at 16.

⁹ Joint Agency Summer Assessment at 19.

¹⁰ Actual customer deliveries are affected by various factors including supply disruptions, scheduling errors by shippers or pipeline operators, or contract mismatches. These factors, and others, factor into receipt utilization below 100 percent.

As explained in the SoCalGas Technical Assessment,¹¹ SoCalGas used 85 percent receipt point utilization instead of 100 percent because it is aligned to actual customer deliveries – scheduled deliveries from the last 5 years shows that customers used, on average, 80 percent of interstate receipt capacity. Further, 85 percent receipt capacity is consistent with a CPUC Energy Division Staff proposal in the Senate Bill 380 modeling framework that uses an assumed level of supply equal to 85 percent of the receipt capacity.

Therefore, the Joint Agency Summer Assessment’s assumption of 100 percent receipt point utilization does not provide an appropriate representation of pipeline capacity for reliability planning and should be reconsidered.

b. Electric Import Utilization

Electric import utilization is the ability of the balancing authorities to import electricity from outside Southern California to support the region’s electricity demands. The Joint Agency Summer Assessment states “[i]n summary, electric reliability can be maintained on a 1-in-10-year electric peak day without using gas from Aliso Canyon, assuming 100 percent transmission import utilization and the availability of non-gas-fired generation in Southern California. This conclusion remains true unless electricity transmission import utilization drops below 90 percent.”¹²

Relying on high levels (90 percent plus) of import utilization assumes significant electric imports. If these assumed electric imports are not realized, then energy reliability is at risk. To assume, for planning purposes, that these high levels will be reached does not allow for prudent planning: California needs to be prepared if the balancing authorities are unable to import electricity at such high levels. To that point, during last year’s peak summer day, CAISO’s import utilization (net interchange) was significantly less than the 100 percent.¹³

To consider more realistic electric import scenarios, the Joint Agency Technical Assessment should reconsider its use of 100 percent import utilization.

c. Minimum Electric Generation

Minimum electric generation is described in the Joint Agency Summer Assessment as the “minimum gas requirement for electric generation.”¹⁴ To determine this figure, the assessment identifies minimum levels of on-system generation needed to maintain electric reliability on a 1-in-10-year electric peak day without using natural gas from Aliso Canyon. It then qualifies that determination, as discussed above, by noting it is assuming 100

¹¹ SoCalGas Technical Assessment at 2-3.

¹² Joint Agency Summer Assessment at 4.

¹³ <http://www.caiso.com/Documents/2018SummerLoadsandResourcesAssessment.pdf> at page 43.

¹⁴ Joint Agency Summer Assessment at 4.

percent transmission import utilization and the availability of non-gas fired generation in Southern California. The Joint Agency Summer Assessment asserts that “[t]he purpose of calculating minimum generation is not so that SoCalGas can plan to curtail the generators. Rather, it is done so that SoCalGas, the electric balancing authorities, and the regulatory agencies know how large a cut the combined electric-gas system can sustain before electric reliability is jeopardized so they can develop actions to reduce risk.”¹⁵

However, if the balancing authorities are uncomfortable or if SoCalGas is unable to plan around these minimum generation figures, then relying on these numbers for planning purposes only serves to create an optimistic plan that does not promote the reliability of the electric system. Reliance on an unrealistic minimum could prevent the creation of plans and procedures to address more realistic demand scenarios. The Joint Agency Summer Assessment should develop realistic minimum generations demand figures to guide prudent reliability planning.

2. Management of the SoCalGas Transmission System

SoCalGas’ first priority is safety.

SoCalGas undertakes numerous programs to maintain a safe and reliable pipeline system. These include the federally-mandated Transmission Integrity Management Program (TIMP) and State-mandated Pipeline Safety Enhancement Plan (PSEP). TIMP involves periodic transmission pipeline threat assessments and, as necessary, remediation of identified anomalies. PSEP, among other things, provides for pressure testing or replacing transmission pipelines that do not have documentation of a pressure test or where the pressure test does not meet certain regulatory standards. As part of these activities, in response to incidents, or as part of SoCalGas’ general obligation to safely operate the system, SoCalGas may take pipelines out-of-service or reduce pipeline operating pressures.

When undertaking these and other operations and maintenance activities, SoCalGas is mindful of the potential reliability impacts. As such, SoCalGas may defer maintenance that is not compliance or safety related when it would improve system reliability. For example, projects may be coordinated or combined with other outages to occur during “shoulder months” or when the weather is mild. However, maintenance must occur to maintain assets and reduce the risk of incidents. Deferral of maintenance can increase the risk of failure and regular maintenance activities are an integral part of maintaining the system and reducing the overall risk to reliability.

When pipeline outages or pressure reductions occur, SoCalGas works expeditiously to safely bring lines back into service or return pipelines to higher-pressure operation. Our crews work in parallel on multiple different parts of a line(s) and resources are added if needed and when it can safely be accomplished. Completion timelines are often influenced by factors that are outside of SoCalGas’ control (e.g., permitting delays or construction

¹⁵ Joint Agency Summer Assessment at 22.

delays due to unanticipated discoveries during trenching operations that expand the scope of the work).

The State can help and expedite maintenance and repair activities by supporting SoCalGas during the permitting process with municipalities, counties, and State and federal agencies (e.g. California Department of Transportation, California Department of Fish and Wildlife, United States (U.S.) Fish and Wildlife Service, U.S. Army Corps of Engineers, U.S. Bureau of Land Management, etc.). When requested, appropriate State agencies could help expedite approvals, request that SoCalGas projects receive priority treatment in the permit application process, and request that permitting agencies set aside personnel and consultant resources to expedite the review and approval of permits.

3. The Joint Agencies Should Carefully Analyze Proposed and Available Reliability and Mitigation Measures

The Joint Agency Summer Assessment proposes five new mitigation measures for the 2018 summer:¹⁶

- Get 230 MMcfd for certain at Otay Mesa using liquified natural gas (LNG).
- Fully utilize pipeline capacity by allowing SoCalGas to buy gas (i.e., expand southern system minimum procurement authority).
- Use existing rules to call high and low operation flow orders (OFOs) more frequently and together when necessary.¹⁷
- Identify and expedite pending transmission upgrades with potential to reduce minimum generation requirements.
- Monitor status of U.S. Department of Energy natural gas demand response pilot program to ensure California is considered for any pilots.

When considering any mitigation measures, the Joint Agencies need to assess the totality of the effect of the proposed mitigation measures. Two factors warrant particular analysis and consideration: (1) the impact on GHGs and (2) energy affordability. Although these factors are acknowledged by the Joint Agency Summer Assessment, their impact is not quantified or analyzed:

There are also financial and environmental impacts of operating electric generation in non-efficient and non-economic ways to address supportable supplies and constraints on the SoCalGas/SDG&E service territories without Aliso Canyon. *This assessment does not attempt to quantify those impacts.*¹⁸

¹⁶ See Aliso Canyon Impact on Reliability Summer 2018 Presentation at Slide 21.

¹⁷ SoCalGas notes that the presentation contains a different mitigation with respect to OFOs. In the Joint Agency Summer Assessment, this mitigation measure is more of a coordination activity: “Coordinate with gas customers to ensure they are prepared to respond to both High and Low operational flow orders.” (Joint Agency Summer Assessment at 51).

¹⁸ Joint Agency Summer Assessment at 22 (emphasis added).

These factors should be considered when addressing how best to support southern California's energy needs.

First, there appears to be some misconception that importing electricity reduces the use of natural gas and therefore GHGs. This is not necessarily correct. In fact, imported electricity may increase the overall use of natural gas and GHGs. This occurs when electricity is generated using less efficient gas-fired generation, coal-fired generation, and/or when the imported electricity experiences power line losses. Second, there are real economic costs to shifting electric generation loads to other sources to avoid the use of Aliso Canyon. The Joint Agency Summer Assessment acknowledges "increased energy dispatch costs," but the impact of those costs on consumers need to be considered as plans are developed and implemented.

With that noted, SoCalGas offers comments on the first three proposed mitigation measures. SoCalGas takes no position on the last two mitigation measures as they apply to the electric operators; however, SoCalGas is following legislation (Energy Infrastructure Demand Response Act of 2018) and is supportive of expanding natural gas demand response efforts through any potential future pilots established through passage of this pending legislation.

a. LNG Procurement at Otay Mesa May Increase Costs Without Significantly Improving System Reliability

If SoCalGas purchases re-gasified LNG delivered at Otay Mesa, we may compete with other shippers and customers trying to schedule their gas volumes into SoCalGas' service territory, particularly on low demand days. Natural gas procured for system reliability has a higher scheduling priority. For days with low demand on the southern system, natural gas from Otay Mesa will take up capacity and may result in cuts to receipts from the El Paso Ehrenberg and North Baja Blythe receipt points. This can happen system wide as well, with LNG receipts at Otay Mesa displacing other receipts across the system. The net effect in these cases would be that no additional supplies are received because one or more receipt sources are replaced by another. As such, this proposed mitigation measure potentially impacts shippers' and customers' ability to schedule gas volumes and does so with a potentially limited benefit to system reliability and at a higher cost to customers.

The Joint Agency Summer Assessment also indicates that "LNG no longer costs multiples over the cost of supply otherwise delivered to California, as demonstrated at an Energy Commission workshop in April 2017."¹⁹ This appears incorrect. SoCalGas has done initial research into costs and believes that LNG deliveries to Otay Mesa would still cost multiples over the recent SoCal Citygate prices. Using indicative prices, it is estimated that the average cost of LNG gas delivered at Otay Mesa to SoCal Citygate for this summer (July, August, and September) is \$9.61 MMbtu and the market price of gas at the SoCal Citygate is \$3.97 MMbtu. Two hundred and thirty thousand MMbtus of LNG supply would cost an

¹⁹ Joint Agency Summer Assessment at 46.

estimated \$1.3 million more per day than supply at SoCal Citygate, or an estimated \$119 million over the July, August, and September months. However, the best way to determine a clearer picture of the cost differential is through a formal request for proposals (RFP) from the marketplace. Unless there is firm commitment to buy the gas, however, SoCalGas expects prices received through an RFP could be somewhat unreliable.

b. SoCalGas Natural Gas Purchases

The second proposed mitigation measure aims to fully utilize pipeline capacity by allowing SoCalGas to buy gas to fill receipt points, however this measure may have unintended consequences and would be complex to implement.

If SoCalGas becomes an active customer in the natural gas market to fill receipt points, it may displace other customers and impact prices because marketers will know that gas must be purchased to fill receipt points. Furthermore, when considering implementation of the second proposed mitigation there is not a pool of gas at the border that SoCalGas can purchase at any given moment. SoCalGas needs to know what receipt point to schedule the day before,²⁰ when (which cycle) to purchase the gas (assuming it is available on that cycle), and where it is going on SoCalGas' system (e.g., customer burn or storage injections). SoCalGas' current southern system memorandum account authorizes SoCalGas to buy and sell the natural gas on the same day for reliability only and not to achieve 100 percent utilization at those receipt points. This new mitigation measure could result in SoCalGas replacing customers in the market that are buying their own supplies. In so doing, the proposed mitigation measure would not increase supplies coming into the system, and would raise the same customer and market impact concerns as the proposal for SoCalGas to buy LNG to be delivered through Otay Mesa.

c. More Frequent High and Low OFOs

The third mitigation measure is not new. SoCalGas already calls high and low OFOs on the same day when needed. As such, this proposed measure is more of a notification that SoCalGas' system will likely see more frequent OFOs this summer.

4. Gill Ranch Proposal is Not Feasible and Would Be of Limited Reliability Benefit

SoCalGas appreciates the support and consideration offered by Gill Ranch Storage Field (Gill Ranch), but the proposal would not improve the reliability of the SoCalGas system.

Creating a new interconnection between Pacific Gas and Electric (PG&E) and Kern/Mojave to allow the SoCalGas system access to stored natural gas from Gill Ranch is not a replacement for SoCalGas underground natural gas storage. Storage supply from Gill Ranch

²⁰ SoCalGas does not know that a receipt point is underutilized until the cycle is finally scheduled during the allocations process. There are many times, where SoCalGas confirms receipts to the entire receipt capacity only to have the supplies cut by upstream pipelines during the allocation process.

would need to be transported over both of these pipelines to our system. At that point, the natural gas supply looks and performs like any other additional pipeline supply – it will not get to the Los Angeles Basin quickly enough to provide real-time support and its rate cannot be varied outside of the North American Energy Standards Board (NAESB) cycles to meet intraday changes in customer demand. It cannot be stressed enough that there is a tremendous reliability benefit by having a natural gas source (e.g., from Aliso Canyon) already in the Los Angeles area, and not hundreds of miles away, vulnerable to weather, pipeline constraints, and operator upsets.

Further, natural gas from Gill Ranch would displace other flowing pipeline supply, which further limits any potential reliability benefit. Gill Ranch does not increase supplies into the system, but rather provides an alternate to existing pipeline supplies. New supplies need to be incremental to replace local storage and provide the same reliability within the basin. As such, to avoid constraining our ability to receive existing supplies, a significant investment in new pipeline and compressor infrastructure would be required on the SoCalGas system.

5. The California Council for Science and Technology Provides Important Insight and Guidance

SoCalGas thanks the California Council for Science and Technology (CCST) for their continued, unbiased engagement assessing the long-term viability of underground natural gas storage in California. The concluding remarks of CCST merit additional emphasis:²¹

- With appropriate regulation and oversight, the risks associated with underground gas storage can be managed and mitigated.
- California’s energy system currently needs natural gas and gas storage to run reliably.

SoCalGas strongly agrees with these conclusions. Looking beyond near-term energy reliability, CCST notes that “[t]here are widely varying ideas about energy systems that might meet the [State’s] 2050 climate goals” and “California needs a plan for energy that accounts for both capacity and reliability at all time scales.”²² SoCalGas underscores that CCST’s presentation shows some pathways to decarbonization have the same total usage of gas (fossil natural gas, renewable natural gas, and hydrogen) in 2050 as today; indeed, at least one pathway would have an increased usage of gas in 2050 versus usage today.²³ As such, it is essential for the State to both appropriately utilize, and make prudent investments in gas infrastructure to promote long-term energy reliability, even as the State works to decarbonize its energy systems.

²¹ Long Term Viability of Underground Natural Gas Storage in California at Slide 12.

²² Long Term Viability of Underground Natural Gas Storage in California at Slides 10, 11.

²³ Long Term Viability of Underground Natural Gas Storage in California at Slide 9.

Closing Comments

SoCalGas appreciates the opportunity to participate in the May 8, 2018 Joint Agency Workshop, and we appreciate the continuing efforts of the Joint Agencies to minimize the possibility of natural gas service interruptions this summer. SoCalGas will continue to work diligently to provide safe, reliable, and affordable natural gas service to our 21 million customers across our service territory and is ready to support the State's efforts to ensure a reliable supply of energy to fuel California's residents, businesses, and economy.

Sincerely,

/s/ Rodger R. Schwecke

Rodger R. Schwecke
Senior Vice President
Gas Transmission, Storage and Engineering

ATTACHMENT A: SoCalGas Summer 2018 Technical Assessment



SOUTHERN CALIFORNIA GAS COMPANY SUMMER 2018 TECHNICAL ASSESSMENT

March 30, 2018

Executive Summary

This technical assessment provides a forecasted outlook of system reliability during the coming summer months, and partially this upcoming winter, and analyzes the associated risks to energy reliability during these periods. For this analysis, SoCalGas analyzed the following: pipeline capacity available to bring gas into the system, the forecasted summer demand, available system capacity given the forecasted summer demand, and the forecasted winter storage inventory.

In assessing system reliability risks for the upcoming summer months, SoCalGas calculated the maximum system-wide capacity range available to serve end-use customers this summer to be 3.8 – 3.9 billion cubic feet per day (BCFD), *with Aliso Canyon Storage Field*¹ which is currently restricted to specific requirements for withdrawal by the California Public Utility Commission (CPUC). This analysis takes into consideration the various existing and potential outages and the operating restrictions on gas transmission and storage assets. *Without the use of Aliso Canyon*, this range is reduced to 3.3 – 3.4 BCFD. SoCalGas also projects this summer's peak demand forecast to be 3.5 BCFD, which is above the estimated maximum system-wide capacity without the use of Aliso Canyon. This analysis demonstrates that with current system conditions, it is likely that SoCalGas will need to withdraw from Aliso Canyon to meet the peak summer demand forecast, in addition to withdrawals from the other storage fields to meet non-peak demands.

To prepare for the 2018-19 winter season, SoCalGas also performed a preliminary analysis of projected storage injection and inventory through the summer. Using demand forecast data prepared for the 2016 California Gas Report (CGR), the projected SoCalGas capacity to receive pipeline supplies, and an estimate of storage field inventory levels on April 1, SoCalGas finds that the maximum system storage inventory that can be reached by November 1 is "worst case" 13 billion cubic feet (BCF) and "best case" 68 BCF. To reach the Commission's requirement of 1,320 million cubic feet per day (MMcfd) of withdrawal capacity² from the non-Aliso Canyon storage fields, SoCalGas would need a winter storage

¹ SoCalGas is currently operating Aliso Canyon pursuant to the CPUC's "Aliso Canyon Withdrawal Protocol" dated November 11, 2017, which specifies that withdrawal from the facility may only occur to prevent EG curtailment that may place the reliability of the electric grid at risk, or to prevent the curtailment of core or noncore non-EG customers.

² See March 13, 2018, Letter from Executive Director Alice Stebbins to Bret Lane, President and Chief Operating Officer of SoCalGas, under the Subject "Injection Required for SoCalGas Summer Reliability and Storage Inventories."

inventory of 43 BCF in those storage fields. As a result, SoCalGas will need to implement measures to enhance storage injections and preserve inventory to meet winter inventory targets.

System Reliability Assessment of Summer Months

The CPUC has not mandated a summer design standard for the SoCalGas system. This is partly because the SoCalGas system is a winter peaking system, and service to the core customers is not at risk in the summer season. Although noncore customers are fully interruptible pursuant to the Commission-approved SoCalGas Tariff Rule No. 23, the Commission and SoCalGas have recognized supply and operating constraints placed upon the electric grid balancing authorities in SoCalGas' service territory (California Independent System Operator [CAISO], Los Angeles Department of Water and Power [LADWP], and Imperial Irrigation District [IID]) and understand the importance of uninterrupted service to local electric generating (EG) plants in southern California. This is further confirmed by the CPUC in its March 13th letter that in which it stated: "Adequate natural gas inventory levels are necessary to maintain reliable delivery to both core and noncore customers during a 1-in-10-year peak demand periods."³

In assessing reliability in the upcoming summer months, SoCalGas analyzed the supply outlook for the system and the peak demand forecast. These are addressed in turn, below.

Supply Outlook

Available Flowing Pipeline Supplies and Storage Withdrawal Capacities

SoCalGas determined ranges of flowing pipeline supplies and storage withdrawal capacities by analyzing "best" and "worst" case scenarios. Under a "best case" scenario, only Line 235-2 between the Newberry and Adelanto compressor stations and Line 3000 between the Colorado River and Newberry compressor station would remain out of service during the summer.⁴ Line 4000 would continue to experience a temporary pressure reduction and the current associated capacity reduction during these months.

Under a "worst case" scenario, in addition to the "best case" pipeline outages, Line 4000 between Newberry compressor station and the Cajon Pass would be removed from service for remediation, and segments of transmission Line 5000 would be potentially removed from service between Whitewater and Moreno Stations. Line 2000's rights-of-way (ROW) on the Morongo Band of Mission Indians previously expired, however the expiration occurred after initiation of this assessment and the minor capacity reduction of 30 MMcf/d in the Blythe subzone is not included in this assessment.

In addition to the outages and restrictions discussed above, SoCalGas factored in that customers do not typically fully balance their supply with their demand even given SoCalGas' balancing rules. A review of

³ See March 13, 2018, Letter from Executive Director Alice Stebbins to Bret Lane, President and Chief Operating Officer of SoCalGas, under the Subject "Injection Required for SoCalGas Summer Reliability and Storage Inventories."

⁴ Line 2000 on the Southern System has been operating at reduced pressure since 2011, thereby reducing the receipt capacity at Blythe to 1,010 million cubic feet per day (MMcf/d). While Line 3000 may return to service during the summer operating season, the outage of Line 235-2 and pressure limitations on Line 4000 will still restrict volumes from either North Needles or Topock to 270 MMcf/d.

scheduled deliveries from the last 5 years shows that customers have used on average 80% of interstate receipt capacity. This reduced receipt capacity is consistent with a CPUC Energy Division Staff proposal in the SB 380 modeling framework that uses an assumed level of supply equal to 85% of the receipt capacity. Given these considerations, SoCalGas has adopted the assumption of 85% in the capacity calculations in this report for all supplies except for local California production which is assumed at current production rate.

Using the scenario information outlined above, the resulting “best” and “worst” case receipt capacities are detailed below in Tables 1 and 2.

Table 1
“Best Case” Available Flowing Pipeline Supplies

Receipt Point	Capacity/Supply (MMcfd)	Details
North Needles	270	Reduced receipt capacity due to Line 235 outage and Line 4000 temporary pressure reduction.
Topock	0	No receipt capacity due to Line 3000 outage.
Kramer Junction	600	Increased capacity due to reduced receipt capacity at North Needles.
Blythe	1,010	
Otay Mesa	200	Otay Mesa has a firm receipt capacity of 400 MMcfd, but is limited by the total 1,210 MMcfd receipt capacity of the Southern System. 200 MMcfd represents the remaining capacity to receive firm supply. Historically, little supply has been delivered at Otay Mesa.
Wheeler Ridge/Kern River Station	765	
California production	60	SoCalGas’ firm receipt capacity is reduced from 310 MMcfd to 210 MMcfd following the derating of pipeline in the Line 85 Zone. However, local California producers are currently utilizing only approximately 60 MMcfd of that capacity.
Total	2,905	
Assume 85% pipeline utilization	2,478	

Table 2
“Worst Case” Available Flowing Pipeline Supplies

Receipt Point	Capacity/Supply (MMcfd)	Details
North Needles	0	No receipt capacity due to Line 235 and Line 4000 outage.
Topock	0	No receipt capacity due to Line 3000 outage.
Kramer Junction	700	Increased capacity due to lost receipt capacity at North Needles
Blythe	800	Reduced receipt capacity due to the potential for pipeline outages on the southern system.

Otay Mesa	150	Historically, little supply has been delivered at Otay Mesa, and only 150 MMcfd of capacity is available on the upstream pipelines supplying the receipt point in the summer operating season.
Wheeler Ridge/Kern River Station	765	
California production	60	SoCalGas' firm receipt capacity is reduced from 310 MMcfd to 210 MMcfd following the derating of pipeline in the Line 85 Zone. However, local California producers are currently utilizing only approximately 60 MMcfd of that capacity.
Total	2,475	
Assume 85% pipeline utilization	2,113	

SoCalGas has labeled the capacities shown in Table 2 as “worst case,” based upon current known potential projects which may impact receipt capacity. However, unexpected outages on the transmission system, such as those resulting from third-party damage and safety related conditions, may still occur throughout the summer season, further reducing receipt capacity beyond the level projected in Table 2.

For this assessment, based on current storage field withdrawal capacities, SoCalGas assumed that 2.12 BCFD of withdrawal capacity would be available during the peak summer season with the use of Aliso Canyon. Without Aliso Canyon, withdrawal capacity is reduced to 1.32 BCFD. These withdrawal capabilities are dependent on having sufficient inventory already in storage to sustain these withdrawal capacities; however, it is likely that it will be difficult to maintain and/or build adequate storage inventory during the summer which may place the winter gas reliability at risk.

Peak Summer Demand Forecast and System Capacity Calculation

For the upcoming summer season, the forecast level of total system demand is 3.5 BCFD as itemized by customer type as shown below Table 3:

Table 3
Forecast Customer Demand, Summer 2018

Customer Type	Summer Demand (BCFD)
Core	0.770
Noncore, Non-Electric Generation (EG)	0.770
Noncore Electric Generation (EG) ¹	1.971
Total	3.511

¹ Derived from 2017 peak summer demand incorporating planned retirements and additions of electric generation resources. The 2017 peak EG demand event correlated to a 1-in-10 year electric temperature condition.

SoCalGas also completed the following analysis to determine how much SoCalGas' system can sustain of the above calculated demand using hydraulic simulations of its gas transmission and storage system

under both the “best” and “worst” case pipeline supply scenarios described in Tables 1 and 2. These capacities are also segregated by customer type in Table 4 below.

Table 4
Summer 2018 System Capacity

Customer Type	“Best Case” Pipeline Supplies		“Worst Case” Pipeline Supplies	
	With Aliso Canyon Supply	Without Aliso Canyon Supply	With Aliso Canyon Supply	Without Aliso Canyon Supply
Core	0.770	0.770	0.770	0.770
Noncore, Non-EG	0.770	0.770	0.770	0.770
Noncore EG	2.369	1.860	2.283	1.731
Total	3.909	3.400	3.823	3.271

Based on the forecast summer 2018 demand and system capacity, SoCalGas able to meet forecast peak day demand under a “best case” and “worst case” scenario with the use of Aliso Canyon. Without Aliso Canyon, SoCalGas is unable to meet forecast peak day demand under either a “best case” or “worst case” scenario.

Note that in all scenarios, the system capacity is always less than the sum of the available pipeline and storage supplies. This is a result of the system hydraulics. Customer demand is not constant over the course of the day, particularly with the electric generation customer type, and gas supplies from interstate pipelines travel slowly across the pipeline network. Those supplies simply cannot meet the changing customer demand in time before minimum operating pressures are reached, and are also scheduled on a ratable basis based on daily expected demand rather than hourly peaks. SoCalGas’ storage fields are closer to the customer demand center in the Los Angeles Basin than the interstate pipeline receipt points, and are the “flex supply” available to meet imbalances between the scheduled pipeline supplies and intraday customer demand.

Likewise, when customer demand drops off, gas supplies must also be reduced to avoid overpressuring the pipeline system. Once again, storage supplies serve the “flex supply” purpose, and are reduced by SoCalGas’ Gas Control department to keep the pipeline supplies flowing. In theory, SoCalGas can also begin injecting gas supply into its storage fields if the pipeline supplies far exceed the customer demand even with all withdrawal reduced to zero. However, as system-wide injection capacity is diminished, it may become increasingly difficult to achieve high levels of pipeline utilization consistently through the summer season.

System Reliability Assessment for 2018-2019 Winter

While the summer season is known as a peak electric generation demand period, the summer season also is when SoCalGas prepares for the upcoming winter season by injecting gas supply into storage for

use during the winter season.⁵ This is even more critical base on the CPUC’s statement in its March 13th letter to maintain inventory to provide reliable delivery to both core and non-core in a 1-in-10-year condition. To do so over the winter period would require significant additional inventory in Aliso Canyon be achieved to maintain system withdrawal capacities needed to meet the 1-in-10 year scenario. SoCalGas has not addressed what that inventory level requirement is and will look to supplement this report soon.

Using public demand forecast data published in the 2016 CGR workpapers for the summer season (April through October 2018, average temperature with base hydro condition), a projection of expected storage inventory levels on April 1 (47.5 BCF), and estimates for injection capacity at each field, SoCalGas performed a mass balance examining the ability to fill storage under both the “best” and “worst” case pipeline capacity scenarios. This mass balance is presented below in Table 5.

Table 5
Monthly Storage Injection Assessment (CGR Average Temperature with Base Hydro) (MMCF)

	April-18	May-18	June-18	July-18	August-18	September-18	October-18
“BEST CASE” SCENARIO							
CGR Demand	74550	68169	65580	74276	75020	77340	74555
Pipeline Supply, 85%	74348	76826	74348	76826	76826	74348	76826
Storage Injection ¹	-203	8526	8768	2550	1806	-2993	2231
Month-End Storage Inventory (BCF) ²	47.30	55.82	64.59	67.14	68.95	65.95	68.18
“WORST CASE” SCENARIO							
CGR Demand	74550	68169	65580	74276	75020	77340	74555
Pipeline Supply, 85%	67973	70238	67973	70238	70238	63383	65495
Storage Injection ¹	-6578	2069	2393	-4038	-4782	-13958	-9060
Month-End Storage Inventory (BCF) ²	40.92	42.99	45.38	41.35	36.56	22.61	13.55

¹ Storage injection is the lesser of the available supply or the available injection capacity (negative numbers represent withdrawal).

² Combined potential capacity is 73 BCF.

SoCalGas experienced heavy use of the Honor Rancho, La Goleta, and Playa del Rey storage fields during the latter part of the winter 2017-18 season as documented in the March 2, 2018 letter to the Energy Division.⁶ With reduced injection capacity following the implementation of tubing-only operations at the storage fields and the loss of pipeline receipt capacity, under either of the two pipeline scenarios,

⁵ SoCalGas Operations does not currently purchase and store any gas supply for the use of any customer. SoCalGas’ Gas Acquisition department purchases supplies for storage only for the SoCalGas retail core and the SDG&E wholesale core market segment, excluding those core customers served by Core Transport Agents as part of a Core Aggregation Transportation program (CAT) and other wholesale providers.

⁶ Available at:

http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Safety/Letter%20to%20Edward%20Randolph_CPUC%20from%20Rodger%20Schwecke_SoCalGas-March%202.pdf

SoCalGas expects that the inventory capacity will not be fully utilized before the start of the winter heating season on November 1. Under the “best case” pipeline capacity scenario, this results in a maximum withdrawal capacity for the winter season of approximately 2.3 BCFD with Aliso Canyon, assuming no injections after November 1. This amount is reduced to approximately 1.4 BCFD without the use of Aliso Canyon. This is approximately equal to the withdrawal capacities necessary to provide the system capacities identified in Table 4. However, peak withdrawal capacities diminish as actual inventory levels diminish and should not be considered available over an entire summer or winter period.

Under the “worst case” pipeline capacity scenario, there is not enough flowing supply capacity available throughout the summer season to meet customer demand and inject additional gas into storage at the rates necessary to meet the winter season storage withdrawal rates as directed by the CPUC. SoCalGas projects that under this “worst case” scenario, inventory will reach only 13.6 BCF by the end of the summer season (pre-November 1). Without curtailments and/or greater utilization of Aliso Canyon to meet demand and maximize system storage inventory, under this scenario, fields other than Aliso Canyon will be fully depleted, and Aliso Canyon will be only at approximately 50% of its current CPUC-authorized inventory capacity (24.6 BCF). If this occurs, the withdrawal capacity available will be limited to what only Aliso Canyon can provide which is estimated at approximately 574 MMcf given the low inventory level and other storage field operating conditions.

With such a severe reduction in receipt capacity under the “worst case” scenario, SoCalGas would explore measures to increase receipt point utilization and, as a result, that pipeline utilization may be higher than the 85% assumed. Assuming SoCalGas could maintain 95% of the receipt point utilization, which corresponds to a 5% daily balancing requirement and maximizing storage injection capability, the season-ending inventory would be increased to approximately 63 BCF. While this is still less than full inventory, it provides a greater level of reliability for the winter season, resulting in a maximum withdrawal capacity for the winter season of approximately 2.1 BCFD with withdrawals from Aliso Canyon. This amount is reduced to approximately 1.3 BCFD without the use of Aliso Canyon. Using supply from Aliso Canyon to meet summer demand and allowing utilization of pipeline receipt capacity to build or retain inventory at the other fields will drive the greatest amount of injection capacity being available and increase reliability.

Conclusion

This technical assessment provides preliminary forecasts of the upcoming summer and winter season and indicates that there is a need to enact measures to support system reliability. For the upcoming summer season, SoCalGas forecasts that it will be able to meet peak day demand under a “best case” or “worst case” scenario, so long as Aliso Canyon is available. Without Aliso Canyon, SoCalGas’ system appears unable to meet peak day demand under either scenario.

For the 2018-19 winter season, to reach the Commission’s requirement of 1,320 million cubic feet per day (MMcfd) of withdrawal capacity⁷ from the non-Aliso Canyon storage fields, SoCalGas would need a winter storage inventory of 43 BCF in those storage fields. SoCalGas projects that it can reach 68 BCF total inventory under the “best case” scenario, but forecasts that a “worst case” scenario may result in inventories of 13 BCF.

⁷ See March 13, 2018, Letter from Executive Director Alice Stebbins to Bret Lane, President and Chief Operating Officer of SoCalGas, under the Subject “Injection Required for SoCalGas Summer Reliability and Storage Inventories.”