SoCalGas

A Sempra Energy utility

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Mr. Stephen Berberich, President and CEO, California Independent System Operator
Mr. Michael Picker, President, California Public Utilities Commission
Mr. Robert Weisenmiller, Chair, California Energy Commission

Dear Messrs. Berberich, Picker, and Weisenmiller:

The California Independent System Operator (CAISO), California Energy Commission (CEC) and California Public Utilities Commission (CPUC) are the critical agencies charged with planning and managing California's energy reliability. Californians depend upon your agencies' expertise and authority to ensure dependable supplies of natural gas and electricity. We continue to stand ready to support your agencies' efforts. To further support you and your agencies' efforts, we want to make you aware of serious concerns we have about our ability to safely and reliably serve our customers this summer and upcoming winter, based upon the current operating status of our system.

The State was lucky this past year to have experienced a mild summer and winter. For the upcoming summer and winter seasons, Californians cannot rely on luck, and energy reliability should not depend upon unusually mild weather conditions. This is particularly true now, as the National Oceanic and Atmospheric Administration is forecasting a 60 to 70 percent chance for above normal temperatures throughout California this summer.

Recently, your agencies directed us to perform an analysis of our system's maximum capabilities using a specified set of assumptions, and we have provided your agencies with that analysis. SoCalGas is concerned, however, that the assumptions we were asked to utilize in our analysis assume perfect operating conditions and optimal market conditions. This could lead your agencies to reach conclusions that produce overly optimistic assessments that could put at risk the dependable supply of natural gas and electricity that Southern Californians will rely on to meet their energy needs this summer and upcoming winter.

Our system's physical ability to provide reliable service on peak demand days and respond to abnormal operating conditions is at risk. As you are aware, currently, the ability of our storage fields to fulfill their critical role in supporting our system is diminished. The La Goleta, Honor Rancho and Playa del Rey storage facilities have 40 percent less inventory than they did at this same time last year. The inventories in these three fields are at reduced levels due to the increased utilization of these fields last winter as a result of the restrictions on the use of Aliso Canyon.

SoCalGas is prohibited from injecting natural gas at Aliso Canyon and is limited to withdrawing gas under certain conditions. In past years, injections into and withdrawals from storage—primarily Aliso Canyon—had been sufficient to maintain system reliability when flowing supplies and customer demand were not in balance. Currently, the depleted inventory levels at La Goleta, Honor Rancho and Playa del Rey and restrictions on our use of Aliso Canyon could result in inadequate injection and withdrawal rates to respond to these imbalances during this summer and into the coming winter. The availability of storage injection capacity also reduces the risk of over pressurization of segments of our pipeline system. Operating close to a pipeline's maximum pressure is a pipeline safety and compliance concern.

Prudent planning promotes safety and incorporates contingencies to provide sufficient system resiliency and flexibility. As part of electric planning assessments, the electric industry plans for upsets under the "N minus 1" condition, which requires electric operators to plan their system to have sufficient resiliency to lose a critical component and continue operating. The gas industry does not have that planning requirement. For SoCalGas, our system was designed to use our storage assets to create system resiliency. Storage acts as "shock absorbers" when we have fluctuations during both supply and demand swings. In effect, having natural gas storage available within our system provides a similar "N minus 1" contingency. Many of the assessment's assumptions, however, do not provide for sufficient contingency in the event of imperfect operating conditions and less than optimal market conditions.

Our experience in these areas raises concerns about planning the region's energy reliability based upon assumptions that require almost perfect conditions. Our concerns with the assumptions can be summarized as follows:

<u>Assumption</u>: Full receipt point utilization.

<u>Concerns</u>: Full receipt point utilization only provides the upper bound of our system's ability to serve customer demand. This theoretical maximum is not a reasonable operational planning assumption. As you are aware, receipt point utilization is a market issue and is dependent upon the market participants—from upstream suppliers, shippers, and ultimately the core and non-core customers—to purchase, schedule, and deliver the gas. Full receipt point utilization is primarily dependent upon customer demand and does not reflect actual historical receipts.

<u>Assumption</u>: 1.470 bcf per day storage withdrawal rates.

<u>Concerns</u>: Storage withdrawal rates of 1.470 bcf per day assumes significantly higher inventory at La Goleta and Honor Rancho, and full inventory at Playa del Rey. We are concerned that the limited injection that has occurred over the last month to restore depleted storage inventories, and limitations and restrictions on the ability to replace gas withdrawn during the summer, will result in lower withdrawal rates.

Currently, the combined inventory at La Goleta, Honor Rancho and Playa del Rey is approximately 40 percent lower than it was at this time last year. The inventories in these three fields are at reduced levels due to the

increased utilization of these fields last winter as a result of the restrictions on the use of Aliso Canyon. If depleted storage inventories are not restored, we will be unable to achieve or maintain withdrawal rates of 1.470 bcf per day.

Restrictions on the use of injection at Aliso Canyon have a direct impact on the SoCalGas system operator's ability to optimize storage injection at our other fields, reliably meet the variability of demand this summer, and prepare for this upcoming winter. The daily injection capacity provided by Aliso Canyon adds 2 to 2 ½ times the total available injection capacity for our system, allows the market to have more certainty and flexibility when scheduling gas into our system, and allows the SoCalGas system operator to maximize injection at the other storage fields. It also provides the SoCalGas system operator the ability to better manage the pipeline system from a pressure perspective. Our system has been designed and operated with the injection, withdrawal and storage capacity of all the storage fields as integral parts of the overall system.

Assumption: Aliso Canyon is assumed to not be used this summer, but held in reserve as a planning contingency.

Concerns: It may be reasonable to assume conservatively that Aliso Canyon is unavailable for withdrawal to provide a planning contingency within a modeling exercise. But, given the State's current restrictions on injection, it is not prudent to depend on Aliso Canyon as an operational backstop throughout the summer and winter to fill potential gaps during system upsets or when the perfect assumptions do not materialize. With Aliso Canyon's currently depleted inventory level, new operating configuration of the wells, and the current temporary moratorium on injection, once any withdrawals are made from Aliso Canyon, its withdrawal capacity is anticipated to decline at what could be a dramatic rate.

Assumption: Daily average capacity accurately reflects the system's ability to meet customer demand.

Concerns: Assuming daily average capacities can be used to forecast the system's ability to meet customer demand results in system planning that does not address the critical importance of hourly customer demand fluctuations, especially in supporting natural gas fired electric generation, in assessing system reliability. The availability of natural gas supply from our storage fields provides critical flexibility in managing the differences between relatively uniform flow of supply from our receipt points and the hourly fluctuating demand of our customers.

We continue to review historical data to assess in greater detail how these assumptions match up with our experience. As described in previous reports, disruptions from planned or unplanned outages on our system and interconnecting pipeline systems can result in natural gas supply interruptions. In addition, we highlight two recent examples of how disruptions outside of our system demonstrate the critical role our storage facilities play in supporting gas and electric system

reliability and resiliency. Under current operating conditions, these events could result in significant energy shortages, including electric generator curtailment.

> Weather: In late July 2015, Southern California experienced three consecutive days of intense humidity and monsoonal storms. The heat and humidity drove an increased need for electric generation, and the cloud cover limited solar generation, resulting in fluctuating electric generation and attendant natural gas demand. During the event, use of natural gas fired electric generation increased significantly, with a total demand over a three-day period ranging between 11 and 25 percent above plan. Storage withdrawals were instrumental in managing the variable needs of the electric system and maintaining electric reliability.
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> Electric Demand: In August 2016, the Blue Cut fire in the Cajon Pass of Southern California, impacted major transmission lines operated by Los Angeles Department of Water and Power and CAISO. Those lines were taken out of service during the fire, which required local natural gas fired electric generation to make up for the loss of electric transmission capacity. Significant storage withdrawals were used to respond to this unexpected 21 percent increase in natural gas demand from electric generation over a five-day period.

These examples demonstrate the importance of assessing our system's capabilities to meet customer demand under multiple scenarios, including scenarios that account for unexpected changes to natural gas supply and customer demand. Experience has shown that failure to address our system's need for resiliency and flexibility risks energy shortages and the attendant safety issues.

We hope that this information is helpful as your agencies perform their critical roles in planning and managing California's energy reliability and resiliency. We continue to stand ready to support you and your agencies' efforts and recognize the importance of continuing to work together as you reach conclusions critical to the State's ability to ensure a reliable supply of energy to fuel California's residents, businesses, and economy.

Sincerely,

Bret Lane
President and Chief Operating Officer

cc: Kevin De León, President pro Tempore, California State Senate
Anthony Rendon, Speaker of the Assembly, California State Assembly
Nancy McFadden, Executive Secretary to California Governor Edmund G. Brown, Jr.
Edward Randolph, Energy Division Director, CPUC
Mark Roethleder, Vice President, Market Quality and Renewable Integration, CAISO