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Aliso Canyon Risk Assessment Technical Report Summer 2018

Prepared by the staff of the California Public Utilities Commission, the California Energy Commission, the California Independent System Operator, and the Los Angeles Department of Water and Power

May 7, 2018



EXECUTIVE SUMMARY

The Southern California Gas (SoCalGas) system continues to operate at less than full capacity due to a significant number of pipeline outages and continuing restrictions on use of the Aliso Canyon natural gas storage facility. This reduction in capacity creates a moderate threat to electric reliability this summer. The more serious threat lies ahead. With so many pipeline outages, it will be difficult for SoCalGas to fill storage to a level sufficient to ensure energy reliability throughout the coming winter.

This assessment is the fifth in a series launched because of the 2015 Aliso Canyon gas leak. It addresses the electric reliability impact of the extensive pipeline outages and of operating Aliso Canyon at less than full capacity. The report was developed by the Aliso Canyon Technical Assessment Group, which is composed of technical experts and staff from the California Public Utilities Commission (CPUC), the California Energy Commission (Energy Commission), the California Independent System Operator (California ISO), and the Los Angeles Department of Water and Power (LADWP). The assessment group has conferred with SoCalGas and relies on hydraulic modeling results prepared by the utility, but this report includes other analysis prepared independently of SoCalGas.

These reports are intended to provide short-term analysis and recommendations regarding SoCalGas system reliability. Long-term analysis and recommendations will be handled in other forums. The state Legislature has directed the CPUC to consider the feasibility of minimizing or eliminating the use of the Aliso Canyon storage facility while maintaining energy reliability. Governor Edmund G. Brown Jr. has asked for a plan to phase out use of the facility within 10 years.

The challenges this summer stem primarily from continuing outages on four key natural gas pipelines. Current available pipeline capacity of 2,655 million cubic feet per day (MMcfd) is significantly lower than the 3,185 MMcfd available last summer. As a result, the total system capacity, which is a combination of pipeline capacity and non-Aliso Canyon storage capacity, is some 200 MMcfd lower than last year. Under the assessment group’s assumptions, the hydraulic model results in total system capacity for this coming summer of 3,555 MMcfd under base case assumptions and 3,425 MMcfd under sensitivity assumptions, compared to 3,638 MMcfd in summer 2017. The base case assumes current operating conditions and the sensitivity case assumes additional pipeline outages and mitigations.

Table ES-1: Comparison of System Capacity Results in Summers 2017 and 2018

	SUMMER 2017	SUMMER 2018	
	Base Case	Base Case	Sensitivity Case
	MMcfd	MMcfd	MMcfd
Pipeline	3,185	2,655	2,525
Storage	468	900	900
Total System	3,638	3,555	3,425

The summer 1-in-10-year peak day¹ forecast gas demand of 3,511 MMcfd can be met by the assessment group’s base case supported demand of 3,555 MMcfd. In the assessment group’s sensitivity case, however, supportable demand drops to 3,425 MMcfd. In this scenario, the 1-in-10-year peak gas demand cannot be met. This case would result in gas curtailments to electric generators. Based on the electric analysis that quantifies the minimum gas requirement for electric generation, the total gas system requirement can be reduced to 3,114 MMcfd, a level supported by the sensitivity case. In 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.

The authors emphasize, however, that operating the system at these levels curtails electric generators and leads to increased costs. There is also no guarantee that the California ISO and LADWP would be able to secure the necessary electricity imports to move the system to minimum generation, especially on short notice. The availability of supply from alternative resources may be less this summer when compared to 2017 due to less-than-average hydroelectric conditions in 2018. The 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.

Table ES-2: 1-in-10 Demand at Forecast Versus Minimum Electric Generation Levels

Summer Demand (MMcfd)	1-in-10 Year Peak Day Forecast Electric Generation (MMcfd)	1-in-10 Year Peak Day Minimum Electric Generation, N-1 Contingency (MMcfd)
Core	770	770
Noncore, Non-Electric Generation	770	770
Noncore, Electric Generation	1,971	1,574
Total	3,511	3,114
<i>Implied Curtailment at Minimum Generation</i>	N/A	397

This report includes a preliminary examination of the events of winter 2017-18. Last winter, the SoCalGas system avoided serious problems primarily because of unusually warm weather. The February cold snap sharply illustrated how fast storage inventories can dwindle and how quickly storage withdrawal capacity declines. With these lessons in mind, looking beyond summer to the upcoming winter is critically important. Without sufficient storage inventory in November, Southern California could see a repetition of last winter, with energy reliability hinging on the vagaries of the weather.

¹ The term *1-in-10-year* represents the warmest condition expected to occur once in 10 years and is used for planning capacity needed to serve noncore customers.

Measures to reduce the risk therefore remain necessary. Staff suggests continuing most of the current mitigation measures and exploring additional measures, including a) buying liquefied natural gas (LNG) to assure that up to 230 MMcfd can reach Otay Mesa on a firm basis,² b) coordinating with gas customers to ensure they are prepared to respond to both high and low operational flow orders, c) granting the SoCalGas operational hub³ permission to buy gas to fill the receipt points to capacity when operationally and financially feasible, d) expediting any pending transmission upgrades that would further reduce the minimum generation requirement, d) monitoring the pending “Energy Infrastructure Demand Response Act of 2018” to ensure California is considered a region for any demand response pilot projects, and e) updating the Section 715 Report⁴ to explore increasing the maximum target inventory at Aliso Canyon.

2 SoCalGas and SDG&E have also been urged to explore supply options at Otay Mesa through a request for offers process in a recently issued proposed decision addressing a new proposed pipeline. See <http://docs.cpuc.ca.gov/SearchRes.aspx?docformat=ALL&docid=213824449>.

3 SoCalGas operational hub is a group within SoCalGas who conducts activities, such as meeting any physical flowing gas supply requirements as determined by the Gas Control department.

4 For the most recent 715 Report see http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/News_Room/News_and_Updates/715_Supplement_2017-12-11_FINAL.pdf.