Aliso Canyon Proceeding I.17-02-002: Summary of Modeling Results

On February 9, 2017, the California Public Utilities Commission (CPUC) opened the Aliso Canyon proceeding, Investigation (I.) 17-02-002, as directed by Senate Bill 380 (Pavley, 2016). The purpose of the proceeding is to determine the feasibility of minimizing or eliminating the use of the Southern California Gas Company's (SoCalGas) Aliso Canyon Natural Gas Storage Facility (Aliso Canyon) while still maintaining gas and electric reliability at just and reasonable rates.

The proceeding was divided into three phases. In Phase 1, the CPUC gathered input from stakeholders on the scenarios, data, and assumptions to be used in the proceeding's modeling efforts. These modeling inputs are based on current gas and electric infrastructure and incorporate all of California's current climate goals. In Phase 2, CPUC staff performed the modeling and published reports on the findings, which are summarized here.

The modeling results will inform the CPUC's Phase 2 Decision, which will determine the facility's maximum allowable gas storage inventory until a Phase 3 Decision is issued and implemented. In Phase 3, which is currently underway, a third-party consultant is modeling changes to the existing gas and electric infrastructure that would allow Aliso Canyon to potentially be closed. A Decision on that phase is expected by the end of 2021.

Three types of modeling were conducted in Phase 2: economic, production cost, and hydraulic modeling.

The economic modeling finds that the combined impacts of the Aliso Canyon restrictions and extended gas transmission pipeline outages—and not one or the other condition in isolation—caused: 1) gas price volatility to increase; 2) SoCalGas' customers to pay roughly $102 million more per

RESULTS & NEXT STEPS

The modeling results suggest three potential maximum allowable Aliso Canyon gas inventory levels depending on 1) how much gas pipeline capacity is assumed and 2) the CPUC's determination of the acceptable risk of gas shortages:

- 41.2 Bcf
- 54.9 Bcf
- 68.6 Bcf

These levels are included in the Phase 2 Modeling Report, which will be released for comments on January 22, 2021. It is anticipated that the CPUC will issue a Proposed Phase 2 Decision informed by the modeling reports in 2021. Once adopted, the selected level will serve as the maximum allowable Aliso Canyon gas inventory until a Phase 3 Decision is adopted and implemented.

MORE INFO:

All workshop recordings and presentations are posted on www.cpuc.ca.gov/AlisoOII.

year for gas from 2016 to 2018; and 3) electric customers to pay about $916 million in excess power costs in 2018.

The production cost modeling assessed whether eliminating Aliso Canyon would cause significant electric reliability effects. The results show significant degradation to electric service reliability on very high demand days if Aliso Canyon were closed because gas-fired electric generators would be curtailed more frequently. Additionally, electric costs were estimated to increase if local electric generation was curtailed, primarily due to increased imports of power.

The hydraulic modeling finds that the forecasted peak gas demand could be met without Aliso Canyon during the summers of 2020, 2025, and 2030. However, in all study years, Aliso Canyon was required to avoid cutting off gas to some electric generators in the winter. It is important to note that the peak demand assumptions used in the 2020 summer hydraulic modeling, which were based on expected reductions in the need for gas-fired electric generation, may have been too optimistic. In summer 2020, there were approximately 25 days when the actual gas demand exceeded the forecasted peak demand used in the hydraulic modeling.

For cold winters, the hydraulic modeling results indicate that the amount of gas that needs to be stored in Aliso Canyon for gas and electric service reliability depends on the assumed pipeline capacity. At annual pipeline capacity levels of 2,700 to 2,800 million cubic feet per day (MMcfd), the modeling found that even at 68.6 billion cubic feet (Bcf) of gas at Aliso Canyon, the 1-in-10-year peak day reliability standard could not be consistently met during a cold year. At 2,900 MMcfd of pipeline capacity, gas and electric service reliability was met with Aliso Canyon at 54.9 Bcf. At 3,000 MMcfd, 41.2 Bcf of Aliso Canyon inventory was required.

There is currently 2,715 MMcfd of firm gas transmission pipeline capacity available on the SoCalGas system. SoCalGas has stated that it will complete pipeline remediation work in September 2021 that should increase pipeline capacity. However, additional remediation would be required to bring pipeline capacity back to historical levels. Thus, there is still considerable uncertainty regarding the amount of pipeline capacity that will be available in the future.

Overall, the modeling results show that there is a need for gas storage inventory levels greater than the currently maximum of 34 Bcf because, at the current inventory level, significant gas curtailments (forced customer gas reductions) are much more likely. California has not experienced a cold year or a 1-in-10

peak day since the Aliso Canyon leak, so the SoCalGas system has not experienced peak winter conditions at the current maximum Aliso Canyon inventory level. In fact, the years 2014-2018 were all warmer than the 20-year historical average, while the hydraulic modeling assumed a year almost as cold as 2011-12.

Given climate change, it is reasonable to question whether the 1-in-10 peak day or the cold year assumptions are still valid. In general, climate change is increasing average winter temperatures and decreasing the number of very cold days in the Western United States. However, it is also increasing unusual weather, both hot and cold, in ways that remain difficult to predict. The CPUC, and Californians generally, will need to continually reassess how much risk of gas curtailments and gas and electric price spikes they are willing to accept in this changing world.