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Independent Review of Southern California Gas Hydraulic Modeling
Executive Summary

On October 23, 2015, Southern California Gas Company (SCG) discovered a leaking well at its Aliso Canyon underground gas storage field necessitating significant changes to the operating characteristics of the field and its future use. In preparing an Action Plan to preserve reliability for Summer 2017, the Aliso Canyon Technical Assessment Group (ACTAG) entities—California Energy Commission (CEC), California Public Utilities Commission (CPUC), California Independent System Operator (CalSO), and the Los Angeles Department of Water and Power (LADWP)—worked with SCG to understand how SCG utilizes the Aliso Canyon field and other gas storage fields and the impact that the loss of Aliso Canyon would have on electric system operations and reliability.

The ACTAG entities requested assistance from transient modeling and gas system planning experts at Los Alamos National Laboratory, in conjunction with Walker & Associates, to provide more detailed and complete independent review of SCG hydraulic modeling to better assure the public that the team is not relying solely on SCG to perform the needed modeling and analysis. This same independent review team (IRT) reviewed these aspects of the SCG hydraulic model in the 2016 Summer and Winter Reliability Analyses. The IRT evaluated the hydraulic modeling and reliability analysis methodology and the recommendations made by the ACTAG.

Findings

The IRT made the following findings:

- The hydraulic modeling and simulation of the SCG gas system and the modeling of SCG gas control operations are representative of the gas send-out capability of the SCG gas system under the boundary conditions used in the 2017 Summer system capacity study performed by SCG and discussed in the 2017 Summer Reliability Assessment.
- The gas system boundary conditions used in the 2017 Summer system capacity study and discussed in the 2017 Summer Reliability Assessment are representative of the actual boundary conditions, assuming that the target storage inventories required to meet the CPUC-required gas storage withdrawal rates can be achieved.
- Under current operating conditions, the required gas storage levels to meet the CPUC-required gas storage withdrawal rates are unlikely to be achieved.
- The effects of gas system outages should be included in the 2017 Summer Reliability Assessment to provide a more complete understanding of the risks to the combined CalSO and LADWP electrical system.

Recommendations

The IRT makes the following recommendations:

- The IRT recommends a gas storage injection plan be developed and implemented that, at a minimum, includes:
    - Set weekly and monthly gas storage injection goals that will achieve storage inventories consistent with the gas storage withdrawal rates used by the assessment team
    - Define and implement a plan for weekly and monthly monitoring of progress towards the gas storage inventory goals
    - Clearly identify a party or organization responsible for achieving the injection goals

- SCG should consider ways to incorporate transient hydraulic modeling into gas control operations to improve their ability to support gas injections into their underground storage facilities.
- SCG should develop contingency plans that involve gas supplies alternative or in addition to drawing gas from Aliso Canyon to mitigate extreme gas system operating conditions.
- The 2017 Summer Reliability Assessment should be updated to include the effect of SCG gas system unplanned outages on the combined CaISO and LADWP electrical systems.