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STATE OF CALIFORNIA
EDMUND G. BROWN JR., *Governor*
PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
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October 21, 2016

Mr. Rodger Schwecke
Vice President
Transmission and Storage
Southern California Gas Company
555 West 5th Street, GT21C3
Los Angeles, CA 91505

SAFETY REVIEW FOR UNDERGROUND GAS STORAGE FACILITIES AT ALISO CANYON

Dear Mr. Schwecke,

The Division of Oil, Gas, and Geothermal Resources (Division) and the California Public Utilities Commission (Commission) have prepared a preliminary joint checklist of the necessary safety evaluations to be completed at the underground gas storage facility at Aliso Canyon. The Division and Commission will not consider approval of a request from Southern California Gas Company (SoCalGas) for authorization to resume injections at the facility prior to SoCalGas' completing all of the items so designated on the checklist. The enclosed checklist includes requirements from the Governor's State of Emergency Proclamation, the Division's Order 1109, and Senate Bill 380, as well as other evaluations that the Division and the Commission have identified as necessary steps to demonstrate the safety of the facility.

Be advised that the joint review of safety issues at Aliso Canyon is ongoing. In the course of its review, the Division or the Commission may identify additional requirements needed to complete the evaluation. In the meantime, please review the checklist and contact us to discuss the time frame and any issues related to meeting these requirements.

Sincerely,

Kenneth A. Harris Jr.,
State Oil and Gas Supervisor
Division of Oil, Gas, and Geothermal Resources

FOR TIMOTHY SULLIVAN

Timothy J. Sullivan,
Executive Director
California Public Utilities Commission

Enclosure

California Public Utilities Commission
and
Division of Oil, Gas, and Geothermal Resources
Checklist for Pre-Injection Safety Assurances

October 21, 2016

In connection with consideration by the Division of Oil, Gas, and Geothermal Resources (Division) and the California Public Utility Commission (Commission) of a request from Southern California Gas Company (SoCalGas) for authorization to resume injections at the underground gas storage facility at Aliso Canyon, following is a list of tasks that SoCalGas must complete in order to ensure the safety of the facility.

Prior to Request for Authorization to Resume Injection:

- Provide a detailed, current, and accurate status report for all 114 wells at the facility, identifying whether the wells have: (1) passed Battery 1 and Battery 2 testing, (2) conducted Battery 1 testing and been isolated from the reservoir, or (3) been fully plugged and abandoned.
- Provide proposed maximum field working pressure for withdrawals, injections, and any well stimulations – for the field and for each operating well.
- Equip all active storage wells at the facility with tubing-and-packer completions that isolate the tubing-casing annulus.
- Provide a Risk Management Plan in accordance with the Division's emergency regulations that includes an effective facility-wide emergency response plan and effective geologic and geotechnical hazard mitigation protocols.
- Provide a current spill contingency plan in accordance with the Division's regulations.
- Provide the internal corrosion assessment and mitigation plan to the Commission as stated in SoCalGas' September 26, 2016, letter to the Commission.

Prior to Authorization to Resume Injection:

- Three days prior to resuming injection, provide a fitness-for-service analysis, signed by SoCalGas's President, Chief Operating Officer, or Chief Executive Officer, that demonstrates that Aliso Canyon is safe to resume injection operations. As part of this fitness-for-service analysis, SoCalGas shall explain how the Aliso Canyon facility is safe to operate prior to completion of the Root Cause Analysis on how and why SS-25 failed:
  - Provide a master list of all equipment and pipelines associated with the gas injection and withdrawal system.
  - Provide test results and/or a function inspection verification report of the listed equipment and pipelines associated with the gas injection and withdrawal system including the Emergency Shutdown Devices (ESD).
  - Provide a list of all dual purpose pipelines (bi-directional flow pipelines injection/withdrawal) and associated block demarcation valves and the facility's ESD inspection records.
- Provide a proposed maximum operating pressure for each operating well.
- Prior to resuming injection, equip all wells to be employed at the facility with real-time pressure monitors in the tubing and the tubing-casing annulus. The continuous annulus pressure monitoring devices should be equipped with alarms. An action plan should be provided to the Division that contains the alarm level settings for each pressure being monitored and a response plan for steps that will be taken after an alarm is sounded.

- Complete a leak survey for the entire facility at least a week prior to resuming injection operations, with all results reported to the Commission within three days of completion and prior to resuming operations.
- Prior to resuming injection, provide a written procedure for dealing with any production tubing leaks and production casing/tubing annulus pressure increases – include the "make safe" procedure and any follow-up actions.
- Provide function test records to the Division for each downhole device.
- At least once during the two-week period prior to resuming injection, conduct a downwind flight to measure total site methane emissions.

After Injection Resumes:
A detailed work plan for each of these tasks must be approved by the Division and the Commission before resumption of injection will be approved:

- Complete a leak survey for the entire facility within 72 hours after resuming injection operations, with results reported to the Commission and the California Air Resources Board (CARB) within three days of completion of the survey. Reportable leaks shall be immediately reported to the appropriate agencies as required by law.
- In addition to the daily monitoring for leaks required under the Division's regulations, complete leak surveys for the entire facility immediately after one month of injection operations and quarterly thereafter for one year (five surveys total), with results reported to the Commission and CARB within seven days of completion. After the first year, leak surveys must be completed in line with applicable CARB regulations.
- Provide a leak detection protocol consistent with the Division's emergency regulation, Senate Bill 887, best practices as reflected in current and pending state rulemakings, and based on a consultation with CARB.
- Report daily reservoir pressure estimates to the Commission/the Division during the first 30 days of resuming injection.
- Report daily reservoir injection and withdrawal volume measurements to the Commission and the Division during the first 30 days of resuming injection.
- Report average daily tubing and annulus pressure measurement to the Commission and the Division during the first 30 days of resuming injection.
- Function test each downhole device at least once every six months and provide function test records to the Division.
- Complete testing or fully plugging and abandoning each well that was isolated within one year of isolation.
- Address all data gaps in the project file that the Division has identified.
- After injection has resumed, conduct two downwind flights to measure total site methane emissions. The two post-injection measurements must be within one week of each other. If both measurements show the site to emit below 250 kg CH4/hour, then no further flights will be required. If the measurements suggest that there are leaks, then the flights must continue until the leaks have been fixed, no new leaks have been found, and emissions are below 250 kg CH4/hour. The exact timing of the flights will be dependent on meteorology allowing for the flights to make successful measurements of total methane emissions from the site.