

## DOCKETED

<b>Docket Number:</b>	17-IEPR-11
<b>Project Title:</b>	Southern California Energy Reliability
<b>TN #:</b>	217640
<b>Document Title:</b>	Aliso Canyon Mitigation Measures - May 19, 2017
<b>Description:</b>	N/A
<b>Filer:</b>	Patty Paul
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	5/19/2017 10:48:02 AM
<b>Docketed Date:</b>	5/19/2017

Aliso Canyon Mitigation Measures May 19, 2017

CATEGORY	MITIGATION MEASURE	STATUS	IMPACTS <sup>1</sup>
Prudent Aliso Canyon Use	1. Make Available 15 Bcf Stored At Aliso Canyon to Prevent Summer Electricity Interruptions	Completed. CPUC issued protocols for withdrawing gas from Aliso Canyon for summer 2016 (see #27 for winter protocols). Revisit for summer 2017.	15 Bcf was stored for use if needed to preserve reliability as determined by the Aliso Canyon Withdrawal Protocol (see Measure 27). On January 24 and 25, 2017, SoCalGas withdrew 50 MMcf of gas to meet peak morning demand during a period of near freezing temperatures.
	2. Efficiently Complete the Required Safety Review at Aliso Canyon to Allow Safe Use of the Field	Underway. The required safety review is in progress. 45 wells at the facility have passed the six-test series. 69 have been taken out of service, filled with protective fluid, and safely isolated from the gas storage field. DOGGR has not issued a letter for re-injection. CPUC must concur with DOGGR review.	As of May 1, 2017, withdrawal capability is about 440 MMcf from tested wells.
Tariff Changes	3. Implement Tighter Gas Balancing Rules	Completed, includes adoption of settlement agreement, advice filing, and tariff changes (see #25 for winter 2016/2017 and summer 2017).	Change in Average Customer Imbalances Summer Peak Day: 0.481 Bcf Winter Peak Day: -0.304 Bcf* The change to a negative imbalance reflects a shift by core customers who went from overdelivering by an average of 12% on winter peak days in 2014-15 (before Low OFO rules were in effect) to underdelivering by an average of 6% in 2016-17.
	4. Modify Operational Flow Order (OFO) Rule	Completed. OFO changes are largely addressed in the planned changes to balancing rules in #3. (see #25 for winter 2016/2017 and summer 2017 for new settlement activities).	See #3 above.
	5. Call Operational Flow Orders Sooner in Gas Day	Closed. This measure was not adopted in the Winter Balancing Settlement Agreement.	Parties to the Winter Balancing Agreements chose to have OFOs called later, rather than earlier, in the gas day so that the forecast of the next day's gas usage would be more accurate.
	6. Provide Market Information to Generators Before Cycle 1 Gas Scheduling	Completed/Continuing. Completed ISO System Technical Deployment & Implementation 7/6/16. These reports are available daily and will be provided on a permanent basis.	Provides Generators estimated dispatch levels based on D+2 market results which can then be used for coordinating participation in the Timely gas nomination cycle which closes before the DA results are available.
	7. Consider ISO market changes that increase gas-electric coordination	Completed/Continuing. Completed ISO System Technical Deployment & Implementation 11/28/16. The ISO market revisions will automatically expire on November 30, 2017, and will be superseded by the tariff provisions in effect prior to June 1, 2016, if FERC does not take action to extend them beyond that date.	These market changes have increased gas-electric coordination by help to ensure ISO markets produce prices that reflect gas system limitations, so that the risk that ISO dispatch could adversely impact gas operators' efforts to manage reliability is mitigated.
Operational Coordination	8. Increase Electric and Gas Operational Coordination	Completed/Continuing. Completed automation process 5/15/16 to provide SoCalGas day-ahead gas forecast for high load days and expand to 2 day-ahead forecast. On-going monthly coordination meetings have been set up. The coordination will continue and expand as needed during gas curtailment events.	LADWP - Measure to improve coordination between utilities has increased LADWP's situational awareness, particularly important during critical high heat days. CAISO - Provides SoCalGas enhanced capability to consume the gas burn volumes related to electric generation supplied within the CAISO BA, which improves proactive operation of their gas system. Additional coordination meetings, both standing and ad hoc, also further enable proactive operation of both the SoCalGas and CAISO systems.
	9. Establish More Specific Gas Allocation among Electric Generators In Advance of Curtailment	Completed/Continuing with plan in place.	The change in curtailment rules allow SoCalGas to call localized, rather than general, curtailments when possible, potentially reducing the number of customers affected. The new rules also somewhat reduced initial curtailments of electric generation.
	10. Determine Whether the Reliability Benefits of Deferring Any Gas Maintenance Tasks Outweigh the Safety Risks	Underway. CPUC added it to the scoping memo of the currently open Pipeline Safety Enhancement Plan (PSEP) proceeding CPUC A.16-09-005.	Summer 2016: The CPUC approved deferral of six maintenance projects. Summer 2017: The CPUC is reviewing whether other maintenance projects can be deferred.
LADWP Operational Flexibility	11. Update Physical Gas Hedging Practice	Completed/Continuing. Physical gas term purchase hedging for Fiscal Year 16-17 has been stopped since 3/3/16.	Provides additional operational flexibility for LADWP in the event of gas curtailments or curtailment watch periods.
	12. Update Economic Dispatch Practice	Completed/Continuing. On anticipated high load days or during a curtailment watch period, a reliability-focused dispatch practice will be used, including uneconomic purchases to reduce gas burns, and LADWP will halt short term sales of energy to other market participants. This strategy began in February 2016. Additionally, LADWP recently purchased a non-economic block of energy to reduce gas burns from July through September 2017.	Provides additional operational flexibility for LADWP in the event of gas curtailments or curtailment watch periods. Recent non-economic energy purchases reduce reliance on local gas by an approximate total gas burn reduction of 1.7 Bcf.
	13. Update Block Energy and Capacity Sales Practice	Completed/Continuing. Any LADWP block energy and forward capacity sales now include the option to curtail the sale in the event of gas curtailments. Completed in December 2016.	Provides additional operational flexibility for LADWP in the event of gas curtailments or curtailment watch periods.
	14. Explore Dual Fuel Capability	Completed 10/11/16, and available as an option. LADWP is prepared to utilize alternative fuel as a last resort to maintain electric reliability in emergency situations.	Provides LADWP with 1,500 MW alternative fuel capability only as a last resort to maintain electric reliability in emergency situations.
	15. Ask customers to Reduce Natural Gas and Electricity Energy Consumption	Underway/Continuing. The CPUC issued a proposed decision to authorize \$11 million in marketing, outreach, and education programs for the summer of 2017 in response to Aliso-related gas supply reductions. LADWP's 1.5 million customers received targeted messaging through multiple media channels educating them about the potential for natural gas shortages and the impact such shortages could have on electric reliability, in addition to messaging urging short and long-term conservation actions and measures throughout the Summer. Winter messaging actions are under measure #23.	Estimated impacts from Flex Alert events in June/July 2016 were 540 MW at the peak. Summer peak day reductions resulting from Flex Alerts are estimated to be approximately 1,040 MWh. The impact of the general education campaign is not quantifiable at this time.

CATEGORY	MITIGATION MEASURE	STATUS	IMPACTS <sup>1</sup>
Reduce Natural Gas and Electricity Use	16. Expand Gas and Electric Efficiency (EE) Programs Targeted at Low Income Customers	Completed/Continuing. The CPUC directed SoCalGas and SCE to take steps to intensify existing Energy Savings Assistance (ESA) programmatic efforts in affected low income communities through the use of unspent funds (\$158.6 million for SoCalGas and \$89.7 million for SCE) and suspension of the “three measure minimum” and “go back” program rules in the impacted area to facilitate deeper energy savings. New projects continue to come on-line as the year progresses. The CPUC continues to monitor the impacts and to push new technologies.	Beginning in 2017, the revised rules that were used to support the intensified Aliso efforts have been adopted for the entire ESA portfolio. Consequently, the peak day ESAP savings that can be attributed to Aliso-related intensification efforts -- 690 therms and 22 MWh -- are limited to 2016 intensification efforts, though much of the broader ESA program savings result in electricity and gas demand reductions in Aliso-impacted areas.
	17. Expand Demand Response (DR) Programs	Completed/Continuing. Numerous SCE DR programs including AC Cycling, Peak Time Rebate programs, such as Programmable Controllable Thermostats, Demand Bidding Program until 2018; Emergency DR programs; and Demand Response Auction Mechanism program. New projects continue to come on-line as the year progresses. The CPUC continues to monitor the impacts.	CPUC - In response to the Aliso Canyon outage, the CPUC took additional actions (such as authorizing additional funding) to intensify SCE's demand response portfolio, including targeted marketing to increase enrollment in its air conditioner (AC) cycling program, increasing enrollment in its Base Interruptible Program and Agricultural and Pumping — Interruptible, offering a \$50 rebate for participants who already own smart thermostats and \$75 for participants who do not yet own smart thermostats to sign up for its Peak Time Rebate program, and retaining the Demand Bidding Program (DBP), which was scheduled to be terminated per an earlier CPUC decision. The combined impacts of these efforts are estimated to be a peak summer day electricity reduction of 140 MWh.
	18. Reprioritize Existing Energy Efficiency Towards Projects with Potential to Impact Usage	Completed/Continuing. New projects continue to come on-line as the year progresses. The CPUC continues to monitor the impacts.	CPUC -The CPUC has directed SCG and SCE to explore a variety of reprioritized and accelerated EE efforts, including accelerated custom projects, commercial direct install, targeted measure rebate kickers, and several specific new measure offerings. Peak day savings (summer and winter) from these Aliso-specific efforts are estimated to be 2,740 therms per day and 252 MWh per day. LADWP -Lighting assessments completed for 28 LAUSD schools, retrofits pending. -Commercial Direct Install accounts for 52,578,751 kWh savings. -AC Tune Up accounts for 2,002,387 kWh savings. -Upstream Commercial HVAC accounts for 7,875,996 kWh savings. -Residential Lighting accounts for 56,872,858 kWh savings, resulting from door-to-door delivery of 2.8M LEDs (two 75W-equivalent LEDs to every household in Los Angeles) -SummerShift program resulted in 100 MW of load shift from large commercial & industrial customers.
	19. Reprioritize Solar Thermal Program Spending to Fund Projects for Summer and by end of 2017 and add/accelerate solar PV programs	Completed/Continuing. CPUC transferred funding to low-income programs and increased incentives in SoCalGas territory. LADWP streamlined its approval process.	CPUC - The CPUC approved temporary changes to incentives for solar water heating systems installed in the SoCalGas service territory by the end of 2016 in response to the Aliso situation. Due to the success of the temporary higher incentive program, SoCalGas has extended the higher incentive installation deadline for projects that met the permit application deadline, but did not meet the installation deadline. The total Aliso-related savings from these combined efforts total 1,070 therms per day. (Due the success and continued growth of the PV programs that were already in place, no additional Aliso Canyon targeted programs to accelerate PV adoptions were developed.) LADWP - In 2016 59 MW of distributed solar was interconnected for a system-wide total of 224 MW of distributed solar. LADWP continued incentives for net energy metering into 2017 beyond the SB1-mandated incentive period. LADWP also interconnected 676 MW of utility-scale solar in 2016 for a total of 945 MW as of May 2017.
	20. Accelerate Electricity Storage	Completed/Continuing. The policy is in place and new projects continue to come on-line as the year progresses. CPUC is preparing a report to be released Q2 2017 that will include more potential program impacts for future. What was planned to be accelerated, has already been accelerated. Will determine if anything new is potentially out there. If needed, will reopen and extend the end date.	CPUC - The CPUC ordered SCE and SDG&E to hold an expedited energy storage procurement solicitation to mitigate potential Aliso Canyon-related reliability problems, and worked with SCE to identify projects that should be given expedited interconnection review in order to be online by the end of 2016. These efforts resulted in 98.5 MW of capacity with estimated summer peak day reductions of 318 MWh. LADWP - Originally slated for 2019, accelerating procurement will allow result in LADWP securing the energy storage resource one year early in 2018.
Market Monitoring	21. Protect California Ratepayers	Completed/Continuing (Start of Monitoring 6/1/16). Updates provided through quarterly CAISO Market Issues and Performance reports.	DMM analysis continues to show that the overall impact of gas and electric rules changes and market conditions on electric markets due to the Aliso Canyon limitations appears limited. The DMM analysis is reported in greater detail in our quarterly reports. DMM continues to monitor these market measures and will report on any significant impacts in its future quarterly reports as well as in the Department of Market Monitoring's 2016 Annual Report, which is scheduled to be published in early May.

CATEGORY	MITIGATION MEASURE	STATUS	IMPACTS <sup>1</sup>
Gas-targeted Programs to Further Reduce Usage	22. Develop and Deploy Gas Demand Response (DR) Program	Complete/Continuing. Resolution G3522 came out on 11/10 which approved the SoCalGas Gas DR program. Program in place Dec 1, 2016. 1) Nat gas conservation notification campaign, 2) Non-core notification campaign, and 3) Natural Gas pilot rebate program. The CPUC will continue to monitor the impacts.	In response to CPUC direction. SoCalGas proposed the following winter gas demand response programs: the Natural Gas Conservation Notification Campaign; the Noncore, Non-Electric Generation, Natural Gas Conservation Notifications; the Natural Gas Conservation Pilot Rebate Program; and the Winter Seasonal Saver Pilot. Only impacts from the Natural Gas Pilot Rebate program are available at this time (6,400 therms/day); results from the other programs will be available after the Impact Evaluation is completed by the SoCalGas-contracted evaluator later this spring.
	23. Develop and Deploy Gas Cold Weather Messaging	Completed 12/31/2016. Gas/cold weather messaging began in the fall and will end at the end of 2016. Will revisit for Winter 2017/2018 after summer 2017.	Results are currently unavailable. They will be included in the Winter Gas Demand Response Impact Evaluation.
Winter Operations Changes	24. Create Advance Gas Burn Operating Ceiling for Electric Generation	Complete/Continuing until 11/30/17. The ISO Aliso Canyon Specific tariff revisions will automatically expire on November 30, 2017, and will be superseded by the tariff provisions in effect prior to June 1, 2016, if FERC does not take action to extend them beyond that date. Will revisit for winter 2017/2018.	This operational tool has been used at ISO operators' discretion if needed to mitigate the risk of operating outside gas system limitations that are constrained due to the limited operability of Aliso Canyon.
	25. Keep the Tighter Balancing Rules	Complete/Continuing until 11/30/17. CPUC proceeding is closed. SoCal Gas and parties to Settlement agreement submitted a petition to extend the winter balancing rules to 11/30/17, which the CPUC Commission approved on 3/23/17.	See #3.
	26. Modify Core Balancing Rules	Underway/Continuing. The core will be required to balance to a 7:00 am forecast rather than a 5:00 am forecast. There is no set end date for this measure, but it may be modified by the decision in the proceeding on core balancing that SoCalGas is required to initiate by 9/30/17 to address the feasibility of incorporating Advanced Meter Infrastructure data into the core balancing process.	The impact of the 12/1/16 change to core balancing rules cannot be disaggregated from the other changes to the balancing rules. The combined core and noncore changes in customer imbalances are noted in Measure 3 above.  In percentage terms, the core overdelivered by an average of 19% on summer 2016 peak days and underdelivered by an average of 6% on winter 2016-17 peak days.
Use of Gas from Aliso Canyon	27. Update the Aliso Canyon Withdrawal Protocol and Gas Allocation Process	Complete 1/12/17 Review whether issues around winter reliability indicate that the protocol needs to be revised.	The protocol describes the conditions under which gas can be withdrawn from Aliso to support reliability. Further the protocol defines coordination and communications concerning these conditions. SoCalGas withdrew gas from Aliso Canyon on Jan. 24-25, 2017 following the protocol.
Reduce Gas Maintenance Downtime	28. Submit Reports Describing Progress on Restoring Pipeline Service	Completed 5/11/2017. SoCalGas released new report and made public on its electronic bulletin board (Envoy).	The purpose of this report is to give customers more information about pipelines that are out of service.
Increase Gas Supply	29. Identify and solicit additional gas supply sources including more CA Natural Gas Production	Complete. CEC and CPUC staff concur that the lack of response from our request to producers supports a conclusion that no increase in CA production is forthcoming or feasible that would effectively increase gas supply into SoCalGas. Natural gas prices and oil prices are not high enough to induce producers to increase production.	No impact projected since no increase in CA production is forthcoming or feasible that would effectively increase gas supply into SoCalGas.
	30. Prepare to Buy LNG	Complete (alternative agency actions will be considered under new measures). CEC staff investigated impediments to obtaining Costa Azul LNG and its delivery into SDG&E's system. FERC and CPUC staff have indicated that affiliate rules should not be an obstacle. CPUC has procedures in place to handle affiliate transactions. Noncore customers currently can contract for either BajaNorte capacity or LNG capacity and should contact SoCalGas if they are worried about supplies. The higher cost of LNG than domestically-produced natural gas would make this a resource of last resort.	Research of barriers completed, but actions need to be taken to actually implement and procure LNG.
Refineries	31. Monitor Natural Gas Use at Refineries and Gasoline Prices	Complete. CEC process is in place.	California refinery operations appear to have adjusted to Aliso Canyon constraints, but CEC staff continues to monitor the situation.
NEW	32. Increase Gas Inventories at the Other SoCalGas Storage Facilities	Underway. SoCalGas adjusted its storage nomination procedure effective May 4, 2017 to help increase inventories. CPUC issued directive to SoCalGas on May 8, 2017 to maximize storage injections. Waiting for SoCalGas advice letter filing May 19, 2017.	New measure - no impacts measured yet.

<sup>1</sup> The impacts of LADWP's demand-side measures represent cumulative total savings from Aliso-related intensification efforts and from the installation of previously planned demand-side resources. The impacts of the CPUC's demand-side resources have been converted from cumulative total savings to summer and winter peak-day impacts, and they represent only those resources that have been added to mitigate the Aliso situation. Existing and authorized demand-side resources are provided in the May 2017 Update of the CPUC's Aliso Canyon Demand-Side Resource Impact Report. <http://www.cpuc.ca.gov/aliso/>