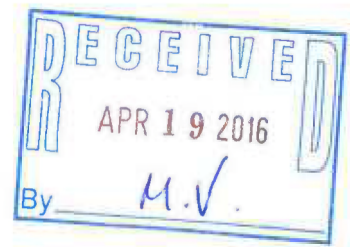


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California Public Utilities Commission



California Energy Commission



Los Angeles Department of Water and Power



California ISO

# Aliso Canyon's Impact on Electric Reliability

*Los Angeles City Council Briefing  
April 19, 2016*

## Coordination of Aliso Canyon's Impact on Electric Reliability

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- Department of Gas and Geothermal Resources (DOGGR) - oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells
- California Public Utilities Authority (CPUC) – regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies
- California Energy Commission (CEC) – the state's primary energy policy and planning agency.
- California Independent System Operator (CAISO) - The largest balancing authority (one of roughly 30 in the Western US, one of 8 in California) charged with operating generation and transmission resources to insure the electric system stays reliable
- Los Angeles Department of Water and Power (LADWP) - also a balancing authority in California, charged with operating generation and transmission resources to insure a reliable electric system for Los Angeles

## DOGGR is Overseeing Comprehensive Safety Review

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- Goal: Ensure that no other wells at Aliso Canyon could cause another major leak
  - Safety program developed in cooperation with independent technical experts from national labs
- Gas may be injected into Aliso Canyon only after all 114 wells have passed comprehensive tests or have been isolated.
- Unknowns: when safety review will be completed; if or how many wells will be cleared to operate; the ultimate production capability of the wells.

## Working Since December to Understand Reliability Impacts and to Develop Action Plan

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- In compliance with Governor's Proclamation, reliability studies performed by CPUC, CEC, CAISO and LADWP
- Analysis focused on summer 2016
  - Separate issues for next winter, yet to be fully assessed
  - Winter workshop planned for July or August
- Two draft reports released
  - Technical Study
  - Action Plan



# Aliso Supports ~9,800 MW: 40% LADWP/ 60% in CAISO; Critical for Peak Day and Contingency Reserve Situations



## Analysis Verified Potential Risks to Reliability

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SoCalGas system uses local storage to manage the following operational problems:

1. Scheduled flowing gas can fail to meet actual demand
2. Planned and unplanned gas system outages can limit pipeline and other storage availability
3. Rapid ramping of electric generation can exceed dynamic capability of gas system
  - Recovering from contingencies
  - Following changes in renewable generation
  - Important: gas moves ~30 mph or less



## Confirmed: Serious Risk to Gas/Electric Reliability This Summer

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- If Aliso is not used, the Southern California area can expect 16 summer days of gas curtailment in 2016
  - Electric generators are first to be curtailed
- Model estimates 14 summer days may require electric service interruption, potentially to millions of customers
- Key risk scenarios, in order of low to high impact

1. Mismatch between scheduled gas and actual demand

2. Mismatch plus outage at other storage field

3. Mismatch plus pipeline outage

4. Mismatch plus outages both on other storage and pipeline

# Mitigation Measures Help, but Do Not Eliminate Risks

CATEGORY	MITIGATION MEASURE
<b>Prudent Aliso Canyon Use</b>	<ul style="list-style-type: none"> <li>• Make available 15 bcf stored at Aliso Canyon to prevent summer electricity interruptions</li> <li>• Efficiently complete the required safety review at Aliso Canyon to allow safe use of the field</li> </ul>
<b>Tariff Changes</b>	<ul style="list-style-type: none"> <li>• Implement tighter gas balancing rules</li> <li>• Modify operational flow order rule</li> <li>• Call operational flow orders sooner in gas day</li> <li>• Provide market information to generators before cycle 1 gas scheduling</li> <li>• Require ISO generators to show gas lined-up before bid into day-ahead electricity market</li> </ul>
<b>Operational Coordination</b>	<ul style="list-style-type: none"> <li>• Increase electric and gas operational coordination</li> <li>• Establish more specific gas allocation among electric generators in advance of curtailment</li> <li>• Determine if any gas maintenance tasks can be safely deferred</li> </ul>
<b>Reduce Natural Gas and Electricity Use</b>	<ul style="list-style-type: none"> <li>• Ask customers to reduce natural gas and electricity energy consumption</li> <li>• Expand gas and electric efficiency programs targeted at low income customers</li> <li>• Expand demand response programs that target air conditioning and large commercial use</li> <li>• Reprioritize existing energy efficiency towards projects with potential to impact usage</li> <li>• Reprioritize solar thermal program spending to fund projects for summer and by end of 2017</li> </ul>
<b>LADWP Operational Flexibility</b>	<ul style="list-style-type: none"> <li>• Curtail physical gas hedging</li> <li>• Stop economic dispatch</li> <li>• Curtail block energy and capacity sales</li> </ul>



## A Situation Requiring Unprecedented Coordination

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- Gas will not be injected into Aliso Canyon until all 114 wells have passed comprehensive tests or have been isolated
- Existing systems were designed with Aliso as critical infrastructure for integrated gas and electric service
- A significant risk to reliability exists this summer
  - Particularly from mismatch of expected and actual gas flows
- Mitigation measures will help, but do not eliminate risk
- Still need to analyze next winter
- Consumer support is critical
  - Need all consumers to conserve when called upon during Flex Alerts
  - Rest of state can also help by conserving energy

Thank You