

January 21, 2019

The California Public Utilities Commission, Energy Division was notified by Southern California Gas Company of Aliso Canyon withdrawals at approximately 11:58 PM on January 21, 2019. This posting will be updated with a report containing more information as soon as possible.

January 23, 2019

8:00 AM update

The California Public Utilities Commission, Energy Division was notified by Southern California Gas Company that withdrawals from Aliso Canyon ceased at approximately 4:57 PM on January 22, 2019.

10:00 AM update

The California Public Utilities Commission, Energy Division was notified by Southern California Gas Company that withdrawals from Aliso Canyon continued at approximately 6:49 AM on January 23, 2019.

6:00 PM update

The California Public Utilities Commission, Energy Division was notified by Southern California Gas Company that withdrawals from Aliso Canyon ceased at approximately 3:30 PM on January 23, 2019.

January 24, 2019

8:00 AM update

The California Public Utilities Commission, Energy Division was notified by Southern California Gas Company that withdrawals from Aliso Canyon continued at approximately 6:29 AM on January 24, 2019.

5:00 PM update

The California Public Utilities Commission, Energy Division was notified by Southern California Gas Company that withdrawals from Aliso Canyon ceased at approximately 3:07 PM on January 24, 2019.

January 28, 2019

The data request required within 24 hours of the cessation of a withdrawal from Aliso Canyon has been provided by SoCalGas and is attached below.

February 25, 2019

The data request required within 30 days of the cessation of a withdrawal from Aliso Canyon has been provided by SoCalGas and is attached below



System-Wide Voluntary Curtailment Issued for Electric Generation

Due to cold weather conditions and high customer demand for natural gas, a system-wide voluntary curtailment of electric generation demand was issued today at approximately 5:00 PM PCT and is effective for gas day January 22, 2019 through gas day January 23, 2019. Note that a gas day is from 7:00 AM to 7:00 AM. SoCalGas has issued the system-wide voluntary curtailment order of electric generation demand in accordance with the [Aliso Canyon Withdrawal Protocol](#). The curtailment is a voluntary request coordinated through the Balancing Authorities (CAISO and LADWP) for them to limit and/or reduce electric generation demand on our system, to the extent it does not impact electric system integrity. If needed, the Aliso Canyon Storage field may be used to meet the current demand as well as maintain inventory levels at the other storage fields for core reliability.

In addition, with the current forecasted weather, SoCalGas is asking customers to conserve natural gas where possible.

All noncore customers should continue to monitor ENVOY® at www.socalgasenvoy.com for further updates.

Please contact your Account Representative or the Gas Scheduling Helpline if you have any questions.



System-Wide Voluntary Curtailment Issued for Electric Generation

Due to cold weather conditions and high customer demand for natural gas, a system-wide voluntary curtailment of electric generation demand was issued today at approximately 4:30 PM PCT and is effective for gas day January 24, 2019. SoCalGas has issued the system-wide voluntary curtailment order of electric generation demand in accordance with the [Aliso Canyon Withdrawal Protocol](#). The curtailment is a voluntary request coordinated through the Balancing Authorities (CAISO and LADWP) for them to limit and/or reduce electric generation demand on our system, to the extent it does not impact electric system integrity. If needed, the Aliso Canyon Storage field may be used to meet the current demand as well as maintain inventory levels at the other storage fields for core reliability.

In addition, with the current forecasted weather, SoCalGas is asking customers to conserve natural gas where possible.

All noncore customers should continue to monitor ENVOY® at www.socalgasenvoy.com/ for further updates.

Please contact your Account Representative or the Gas Scheduling Helpline if you have any questions.



A  Sempra Energy utility

Jeffery Salazar
Liaison Officer

555 West 5th Street
Los Angeles, CA 90013-1011
Tel. (213) 244-5916
jlsalazar@semprautilities.com

January 24, 2019

Edward Randolph
Director, Energy Division
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, California 94102

RE: Aliso Canyon Withdrawal Protocol Notification

Dear Mr. Randolph:

Pursuant to the Aliso Canyon Withdrawal Protocol dated November 2, 2017 (Protocol), I am writing to inform you that SoCalGas continued withdrawal of natural gas from the Aliso Canyon storage field at approximately 6:29 a.m. on January 24, 2019 to address sustained cold weather and system demand. SoCalGas will immediately notify you when withdrawal of natural gas from the Aliso Canyon storage field has ceased. Pursuant to the Protocol, SoCalGas will provide information regarding the withdrawal event to the Energy Division within 24 hours of the withdrawal event's cessation.

Please let me know if you have any questions.

Sincerely,

/s/ Jeffery Salazar

Jeffery Salazar

Liaison Officer - SoCalGas

cc: Maryam Ebke, Deputy Executive Director, CPUC
Dorothy Duda, Energy Division, CPUC
Jean Spencer, Energy Division, CPUC
Renee Guild, Energy Division, CPUC
Christina Ly, Energy Division, CPUC
Judith Ikle, Energy Division, CPUC
Simone Brant, Energy Division, CPUC
Jonathon Bromson, Legal Division, CPUC
Elizaveta Malashenko, Director, Safety and Enforcement Division, CPUC
Kenneth Bruno, Safety and Enforcement Division, CPUC
Matthewson Epuna, Safety and Enforcement Division, CPUC
Lana Tran, Safety and Enforcement Division, CPUC

SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON WITHDRAWAL PROTOCOL (11-2-17)
SOCALGAS RESPONSE TO CPUC-ENERGY DIVISION
DATED JANUARY 24, 2019

Public Version

Question 1:

Pursuant to the Aliso Canyon Withdrawal Protocol dated November 2, 2017, SoCalGas shall within 24 hours of cessation of a withdrawal from Aliso Canyon, provide the Energy Division of the CPUC:

- a. the total and hourly withdrawals from the field;
- b. the number of wells used for making withdrawals and the SoCalGas identifier for each well used;
- c. the pre- and post-withdrawal Aliso working gas inventory;
- d. the hourly pipeline receipts for the calendar day(s) on which a withdrawal was made and the day immediately preceding the withdrawal;
- e. the hourly withdrawals by field from non-Aliso storage facilities for the calendar day(s) on which a withdrawal was made and the day immediately preceding the withdrawal;
- f. information concerning any anomalies experienced during the operation of the field;
- g. any repairs or mitigation required as a result of the withdrawal, including the time necessary to make them before another withdrawal could be made and the impact on the field's injection and withdrawal capacity;
- h. whether the withdrawal was made under conditions identified in 1.B.

Response 1:

SoCalGas provides the following response with respect to the withdrawal of gas from Aliso Canyon that began at approximately 11:58 pm on January 21, 2019 and ceased at approximately 4:57 pm on January 22, 2019. SoCalGas resumed with withdrawal within gas day January 22 at 6:49 am on January 23, 2019 and ceased at approximately 3:30 pm on January 23, 2019

- a. The total withdrawal from the field was 0.617 Bcf. The hourly withdrawals from the field are provided below. Inventory volumes are based on Gas Control system data and are subject to adjustment based on SoCalGas' routine monthly reconciliation between real-time SCADA system data, and the measurement data recorded by our Measurement Data Operations (MDO) department. SoCalGas will update this response following the reconciliation process, if appropriate.

SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON WITHDRAWAL PROTOCOL (11-2-17)
SOCALGAS RESPONSE TO CPUC-ENERGY DIVISION
DATED JANUARY 24, 2019

Public Version

Date/Time	Hourly Withdrawal (MMSCF)
1/21/2019 23:00	
1/22/2019 0:00	
1/22/2019 1:00	
1/22/2019 2:00	
1/22/2019 3:00	
1/22/2019 4:00	
1/22/2019 5:00	
1/22/2019 6:00	
1/22/2019 7:00	
1/22/2019 8:00	
1/22/2019 9:00	
1/22/2019 10:00	
1/22/2019 11:00	
1/22/2019 12:00	
1/22/2019 13:00	
1/22/2019 14:00	
1/22/2019 15:00	REDACTED
1/22/2019 16:00	
1/22/2019 17:00	
1/22/2019 18:00	
1/22/2019 19:00	
1/22/2019 20:00	
1/22/2019 21:00	
1/22/2019 22:00	
1/22/2019 23:00	
1/23/2019 0:00	
1/23/2019 1:00	
1/23/2019 2:00	
1/23/2019 3:00	
1/23/2019 4:00	
1/23/2019 5:00	
1/23/2019 6:00	
1/23/2019 7:00	

SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON WITHDRAWAL PROTOCOL (11-2-17)
SOCALGAS RESPONSE TO CPUC-ENERGY DIVISION
DATED JANUARY 24, 2019

Public Version

Date/Time	Hourly Withdrawal (MMSCF)
1/23/2019 8:00	
1/23/2019 9:00	
1/23/2019 10:00	
1/23/2019 11:00	
1/23/2019 12:00	
1/23/2019 13:00	
1/23/2019 14:00	
1/23/2019 15:00	
1/23/2019 16:00	

- b. 52 wells were used for making withdrawals. Please see the attached spreadsheet.

REDACTED

- c. The pre- and post-withdrawal Aliso working gas inventory were 31.19 Bcf and 30.58 Bcf, respectively.

Inventory volumes are based on Gas Control system data and are subject to adjustment based on SoCalGas’ routine monthly reconciliation between real-time SCADA system data, and the measurement data recorded by our Measurement Data Operations (MDO) department. SoCalGas will update this response following the reconciliation process, if appropriate.

- d. The hourly pipeline receipts for the calendar days on which a withdrawal was made and the calendar day immediately preceding the withdrawal, is provided in the attached spreadsheet.

REDACTED

Pipeline receipt data is based on Gas Control system data and are subject to adjustment based on SoCalGas’ routine monthly reconciliation between real-time SCADA system data, and the measurement data recorded by our Measurement Data Operations (MDO)

SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON WITHDRAWAL PROTOCOL (11-2-17)
SOCALGAS RESPONSE TO CPUC-ENERGY DIVISION
DATED JANUARY 24, 2019

Public Version

department. SoCalGas will update this response following the reconciliation process, if appropriate.

- e. The hourly withdrawals by field from non-Aliso storage facilities for the calendar days on which a withdrawal was made and the calendar day immediately preceding the withdrawal are provided in the attached spreadsheet.

REDACTED

Inventory volumes are based on Gas Control system data and are subject to adjustment based on SoCalGas' routine monthly reconciliation between real-time SCADA system data, and the measurement data recorded by our Measurement Data Operations (MDO) department. SoCalGas will update this response following the reconciliation process, if appropriate.

- f. **REDACTED**
- g. Please see Response 1.f.
- h. No.

SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON WITHDRAWAL PROTOCOL (11-2-17)
SOCALGAS RESPONSE TO CPUC-ENERGY DIVISION
DATED JANUARY 25, 2019

Public Version

Question 1:

Pursuant to the Aliso Canyon Withdrawal Protocol dated November 2, 2017, SoCalGas shall within 24 hours of cessation of a withdrawal from Aliso Canyon, provide the Energy Division of the CPUC:

- a. the total and hourly withdrawals from the field;
- b. the number of wells used for making withdrawals and the SoCalGas identifier for each well used;
- c. the pre- and post-withdrawal Aliso working gas inventory;
- d. the hourly pipeline receipts for the calendar day(s) on which a withdrawal was made and the day immediately preceding the withdrawal;
- e. the hourly withdrawals by field from non-Aliso storage facilities for the calendar day(s) on which a withdrawal was made and the day immediately preceding the withdrawal;
- f. information concerning any anomalies experienced during the operation of the field;
- g. any repairs or mitigation required as a result of the withdrawal, including the time necessary to make them before another withdrawal could be made and the impact on the field's injection and withdrawal capacity;
- h. whether the withdrawal was made under conditions identified in 1.B.

Response 1:

SoCalGas provides the following response with respect to the withdrawal of gas from Aliso Canyon that began at approximately 6:29 AM on January 24, 2019 and ceased at approximately 3:07 pm on January 24, 2019.

- a. The total withdrawal from the field was 0.166 Bcf. The hourly withdrawals from the field are provided below. Inventory volumes are based on Gas Control system data and are subject to adjustment based on SoCalGas' routine monthly reconciliation between real-time SCADA system data, and the measurement data recorded by our Measurement Data Operations (MDO) department. SoCalGas will update this response following the reconciliation process, if appropriate.

Date/Time	Hourly Withdrawal (MMSCF)
1/24/19 6:00	
1/24/19 7:00	

SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON WITHDRAWAL PROTOCOL (11-2-17)
SOCALGAS RESPONSE TO CPUC-ENERGY DIVISION
DATED JANUARY 25, 2019

Public Version

1/24/19 8:00	
1/24/19 9:00	
1/24/19 10:00	REDACTED
1/24/19 11:00	
1/24/19 12:00	
1/24/19 13:00	
1/24/19 14:00	
1/24/19 15:00	
1/24/19 16:00	

- b. 28 wells were used for making withdrawals. Please see the attached spreadsheet.

REDACTED

- c. The pre- and post-withdrawal Aliso working gas inventory were 30.58 Bcf and 30.41 Bcf, respectively.

Inventory volumes are based on Gas Control system data and are subject to adjustment based on SoCalGas' routine monthly reconciliation between real-time SCADA system data, and the measurement data recorded by our Measurement Data Operations (MDO) department. SoCalGas will update this response following the reconciliation process, if appropriate.

- d. The hourly pipeline receipts for the calendar days on which a withdrawal was made and the calendar day immediately preceding the withdrawal, is provided in the attached spreadsheet.

REDACTED

Pipeline receipt data is based on Gas Control system data and are subject to adjustment based on SoCalGas' routine monthly reconciliation between real-time SCADA system data, and the measurement data recorded by our Measurement Data Operations (MDO) department. SoCalGas will update this response following the reconciliation process, if appropriate.

SOUTHERN CALIFORNIA GAS COMPANY
ALISO CANYON WITHDRAWAL PROTOCOL (11-2-17)
SOCALGAS RESPONSE TO CPUC-ENERGY DIVISION
DATED JANUARY 25, 2019

Public Version

- e. The hourly withdrawals by field from non-Aliso storage facilities for the calendar days on which a withdrawal was made and the calendar day immediately preceding the withdrawal are provided in the attached spreadsheet.

REDACTED

Inventory volumes are based on Gas Control system data and are subject to adjustment based on SoCalGas' routine monthly reconciliation between real-time SCADA system data, and the measurement data recorded by our Measurement Data Operations (MDO) department. SoCalGas will update this response following the reconciliation process, if appropriate.

- f. **REDACTED**
- g. Please see Response 1.f.
- h. No.

SOUTHERN CALIFORNIA GAS COMPANY
30-Day Aliso Canyon Withdrawal Report
Response Dated February 22, 2019

PUBLIC VERSION

Purpose

On November 2, 2017 the Energy Division of the California Public Utilities Commission (“CPUC-ED”) issued the Aliso Canyon Withdrawal Protocol (“Withdrawal Protocol”). The Withdrawal Protocol specifies the circumstances and conditions when Southern California Gas Company (“SoCalGas”) may execute a withdrawal operation from the Aliso Canyon storage field. In addition, the Withdrawal Protocol contains certain noticing and reporting requirements, including the following:

Within 30 days after a withdrawal, SoCalGas shall provide the Energy Division with a full description of the events and conditions leading up to the withdrawal, all actions taken prior to the withdrawal, and any observations or recommendations concerning the execution of future withdrawals. Further, SoCalGas shall identify and describe any steps or actions not taken that could have diminished or eliminated the need for a withdrawal and make comments and/or recommendations for future consideration.¹

Pursuant to the Withdrawal Protocol, SoCalGas provides the following 30-day report with respect to the withdrawals from Aliso Canyon that occurred between January 21, 2019 and January 24, 2019.

Background

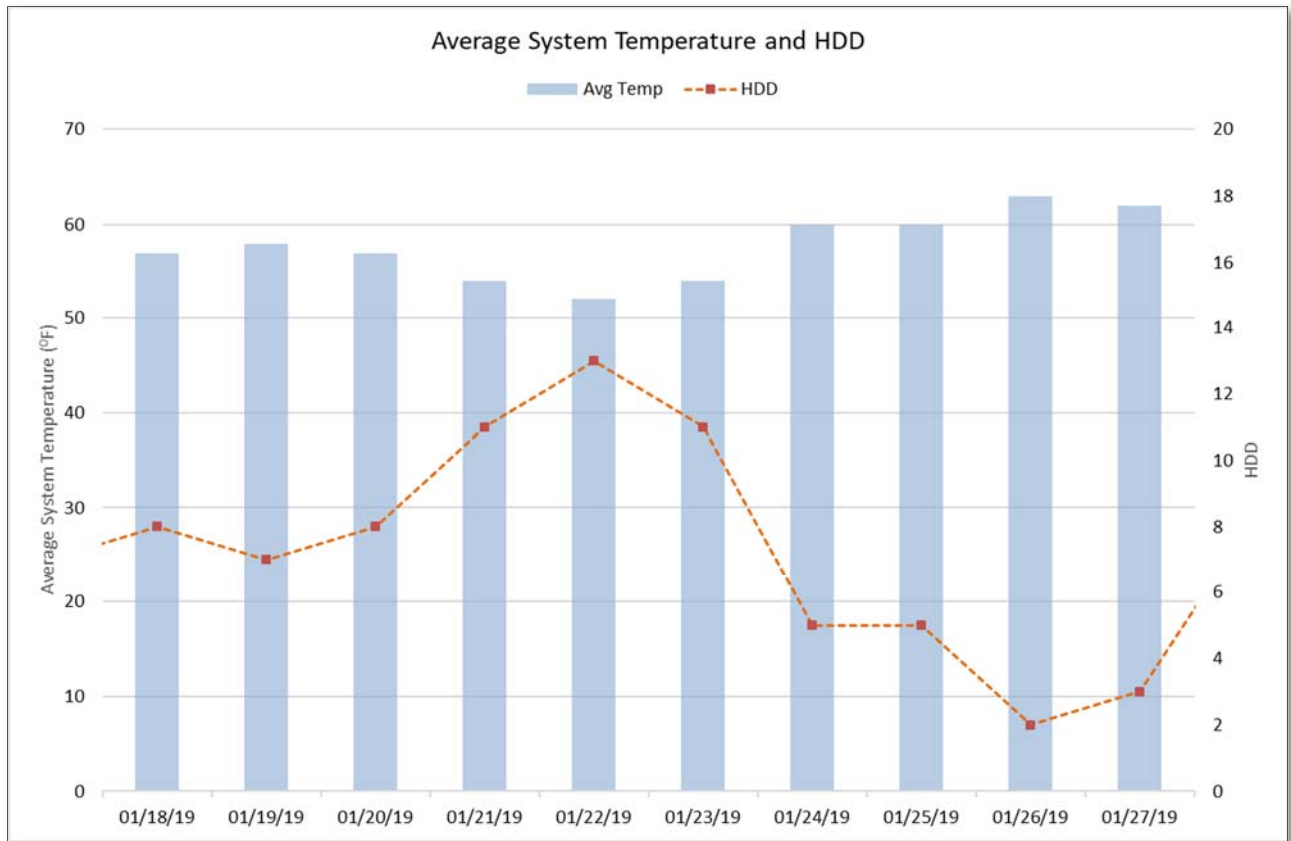
Withdrawals from Aliso Canyon were based on forecasted and known conditions including but not limited to weather, overall gas demand, electric generation gas demand, and the current and anticipated operating condition of the SoCalGas system.

Weather

The graph below shows the SoCalGas system average heating degree days (“HDD”) from January 18, 2019 through January 27, 2019.

An HDD is a measurement designed to quantify the demand for energy needed to heat a building. It is the number of degrees that a day's average temperature is below 65° Fahrenheit, which is the temperature below which buildings need to be heated. Additionally, the graph below shows the daily custom system average temperature condition for the SoCalGas and San Diego Gas & Electric Company (“SDG&E”) service territories before and during the period Aliso Canyon was on withdrawal. The custom system average temperature calculation incorporates data from 12 weather stations across the SoCalGas and SDG&E service territories and is provided by calendar day.

¹ CPUC-ED Aliso Canyon Withdrawal Protocol dated 11/2/2017, page 3.



Although average temperatures remained between 52⁰F and 60⁰F during this event, Aliso Canyon was needed to respond to customer hourly demand that reached extreme peaks (a daily equivalent of 5.4 BCFD) and to preserve and restore inventory and withdrawal deliverability at the non-Aliso Canyon storage fields to maintain their ability to support the system during the remaining winter months. These factors are discussed further below.

Status of Storage Fields

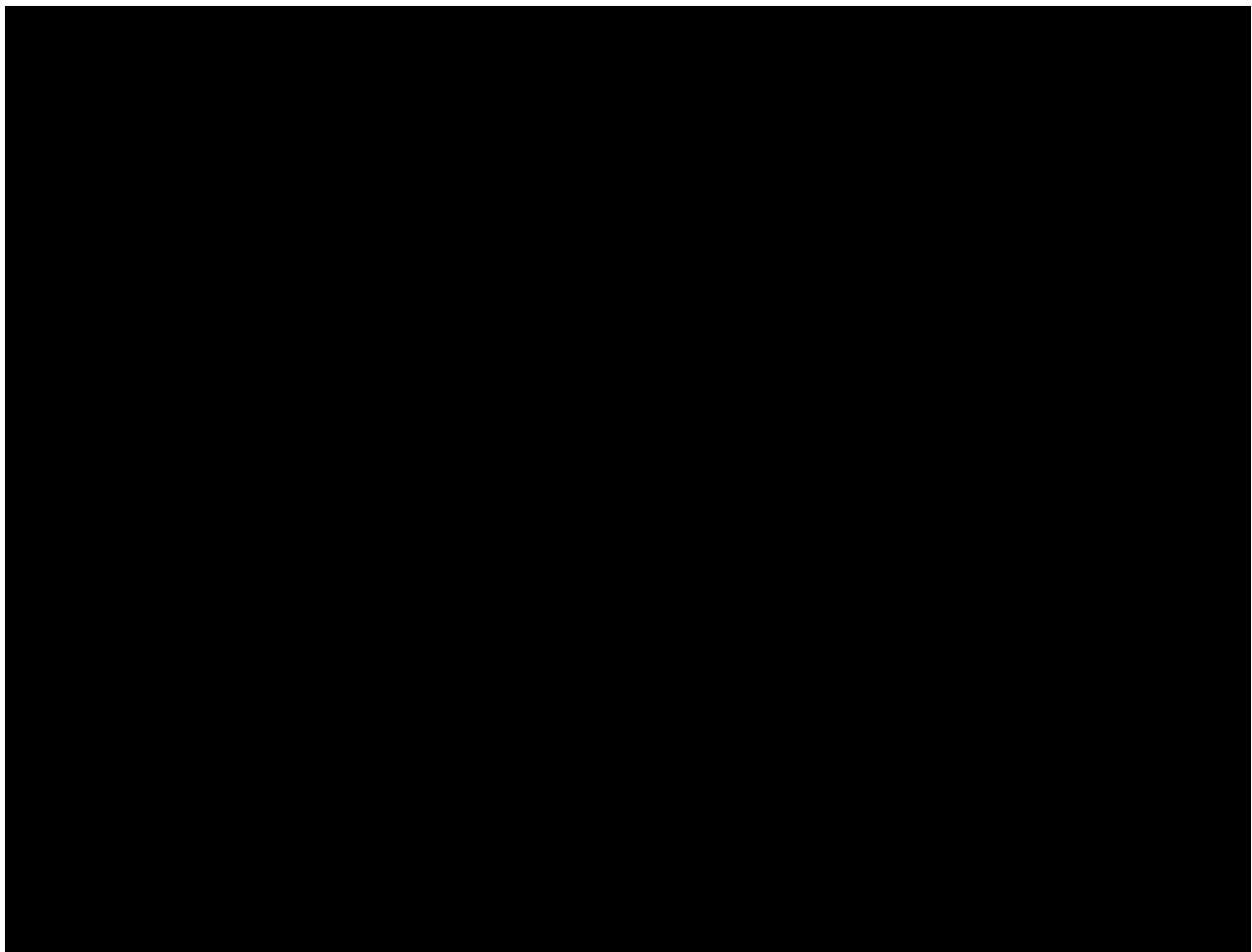
In accordance with the Withdrawal Protocol, SoCalGas has placed greater reliance on its non-Aliso Canyon storage fields (Honor Rancho, La Goleta, and Playa del Rey) to meet customer demand since the beginning of the winter season on November 1, 2018. This resulted in lower inventory levels at the non-Aliso Canyon storage fields, which in turn led to reduced available withdrawal capacities.

In addition, SoCalGas’ safety enhancements and integrity assessments at the storage fields have reduced SoCalGas’ system-wide withdrawal capacity because wells have been taken offline for mechanical integrity testing and conversion to tubing-only flow. These conditions resulted in decreased storage withdrawal capabilities to respond to this cold event.

The following table provides the inventories and approximate withdrawal capacities of each of the storage fields at the beginning of the cold weather event.

Storage Field	Inventory (BCF)	Withdrawal Capacity (MMCFD)
Aliso Canyon	31.192	
Honor Rancho		
La Goleta		
Playa Del Rey		
Total Storage W/O Aliso		895
Total Storage W/ Aliso		

The following graph shows the Aliso Canyon and non-Aliso Canyon withdrawals from January 21, 2019 11:58 PM through January 24, 2019 3:07 PM. As illustrated below and discussed in a later section, the non-Aliso Canyon fields and Aliso Canyon were needed to respond to the peaks in demand that occurred on January 22, January 23, and January 24. Aliso Canyon withdrawals were then also used to support the system so that the non-Aliso Canyon inventory could be preserved and restored to support the system during the remainder of winter.



the mismatch between what customers bring onto the system in supplies and their usage. SoCalGas must rely on regulatory tools in place to try to manage the system’s reliability, integrity, and safety. These tools include the low operational flow order (“low OFO”), the high operational flow order (“high OFO”), the emergency flow order (“EFO”), and curtailment procedures.

SoCalGas declared Low OFOs on three days over the January 21 through January 24 period.

Low OFO Declarations		
January 22	Stage 1	-5%
January 23	Stage 2	-5%
January 24	Stage 2	-5%

Actions Taken Prior to Withdrawal

Curtailment Actions

Per the Withdrawal Protocol, SoCalGas took actions available to meet demand and to avoid curtailments including (as discussed in additional detail below) working with the Balancing Authorities (the California Independent System Operator [CAISO] and the Los Angeles Department of Water and Power [LADWP]) to reduce or limit electric generation demand through voluntary curtailments. Coordination took place between SoCalGas and the Balancing Authorities during this period, having multiple interactions per day with both management and the real-time control room operators to manage the system reliability of three energy delivery systems (CAISO, LADWP, and SoCalGas) in near real-time.

In the late evening of January 21, SoCalGas requested CAISO and LADWP voluntarily curtail their demand for the remainder of Gas Day⁴ January 21, 2019 but CAISO and LADWP could not curtail their demand without negatively impacting the electric grid. SoCalGas requested CAISO and LADWP voluntarily curtail their demand from Gas Day January 22, 2019 through Gas Day January 23, 2019. LADWP voluntarily curtailed its demand by 9 MMCF and 19 MMCF on Gas Day January 22 and Gas Day January 23, respectively. CAISO stated they could not curtail from Gas Day January 22 through Gas Day January 23 and maintain reliable grid operations.

Despite these efforts, SoCalGas evaluated its capacity to meet demand and found that available pipeline and storage supplies were insufficient, and reliability was at risk without additional gas supply from Aliso Canyon. In preparation for this cold weather event, all fields were verified to have their withdrawal processes ready and on standby.

Envoy Postings

On January 21, 2019 SoCalGas posted a SoCalGas ENVOY[®] (Envoy) notice providing notification to customers that due to cold weather and high natural gas demand, SoCalGas and

⁴ A Gas Day is from 7:00 AM to 7:00 AM.

SDG&E were issuing a system-wide voluntary curtailment for electric generation customers in accordance with the Aliso Canyon Withdrawal Protocol, effective from Gas Day January 22, 2019 through Gas Day January 23, 2019. SoCalGas clarified that these were voluntary requests coordinated through the Balancing Authorities (CAISO and LADWP) to request that the Balancing Authorities limit and/or reduce electric generation demand on the system to the extent it did not impact electric system integrity. SoCalGas informed customers that, if needed, the Aliso Canyon Storage field may be used to meet current demand and maintain inventory levels at the other storage fields for core reliability. SoCalGas asked customers to conserve natural gas where possible and asked noncore customers to monitor Envoy for updates.

On January 22, 2019 SoCalGas posted an Envoy notice stating that beginning January 22, 2019 the SoCalGas and SDG&E service territories were experiencing inclement weather and that this inclement weather was forecasted to continue through January 23, 2019. SoCalGas and SDG&E urged customers and shippers to pay close attention to Envoy and schedule their volumes accordingly. SoCalGas stated that it continued to work with the Balancing Authorities (CAISO and LADWP) to limit and/or reduce electric generation demand on the system to the extent it did not impact electric system integrity. SoCalGas informed customers that due to cold weather and high natural gas demand, all SoCalGas storage fields, including Aliso Canyon, were being used to provide system reliability and that without withdrawals from Aliso Canyon, the increased demand on the system may have resulted in further curtailments to noncore customers.

On January 23, 2019 SoCalGas posted an Envoy notice providing notification to customers that due to cold weather and high natural gas demand, SoCalGas and SDG&E were issuing a system-wide voluntary curtailment for electric generation customers in accordance with the Aliso Canyon Withdrawal Protocol, effective on Gas Day January 24, 2019. SoCalGas clarified that these were voluntary requests coordinated through the Balancing Authorities (CAISO and LADWP) to request that the Balancing Authorities limit and/or reduce electric generation demand on the system to the extent it did not impact electric system integrity. SoCalGas informed customers that, if needed, the Aliso Canyon storage field may be used to meet current demand and maintain inventory levels at the other storage fields for core reliability. SoCalGas asked customers to conserve natural gas where possible and asked noncore customers to monitor Envoy for updates.

On January 24, 2019 SoCalGas posted an Envoy notice providing notification to customers of the dates and times of the initiations and cessations of withdrawal operations at Aliso Canyon as well as the withdrawal volumes at Aliso Canyon for each day during the withdrawal periods. Aliso Canyon withdrawal was initiated on January 21, 2019 at approximately 11:58 PM Pacific Time and ceased on January 22, 2019 at approximately 4:57 PM Pacific Time. The total withdrawal for this period was approximately 0.350 BCF. Aliso Canyon withdrawal initiated again on January 23, 2019 at approximately 6:49 AM Pacific Time and ceased on January 23, 2019 at approximately 3:30 PM Pacific Time. The total withdrawal for this period was approximately 0.267 BCF. SoCalGas stated that the change in weather conditions allowed SoCalGas to end the voluntary curtailment of generators and that the voluntary curtailment would end on January 25, 2019 at 7:00 AM Pacific Time.

On January 25, 2019 SoCalGas posted an Envoy notice providing notification to customers of the times of the initiation and cessation of withdrawal operations at Aliso Canyon as well as the withdrawal volume at Aliso Canyon on January 24, 2019. Aliso Canyon withdrawal was initiated on January 24, 2019 at approximately 6:29 AM Pacific Time and Aliso Canyon withdrawal was ceased on January 24, 2019 at approximately 3:07 PM Pacific Time. The total withdrawal for this period was 0.166 BCF. SoCalGas stated that the voluntary curtailment for electric generators ended on January 25, 2019 at 7:00 AM Pacific Time.

Restricted Maintenance Operations

Gas Control declared restricted maintenance operations for the period from January 22, 2019 at 7:00 AM through January 24, 2019 at 7:00 AM at transmission pipeline compressor stations, transmission pipelines, and storage facilities, noting anticipated high customer demand due to forecasted low temperatures. This anticipated high system demand combined with pipeline outages increased the risk of jeopardizing system integrity and thus required all other facilities to be ready and available to maintain system integrity. Maintenance personnel were instructed to request clearance before performing any maintenance that could possibly impact station or pipeline operations.

Demand Response

SoCalGas initiated Smart Therm Demand Response (DR) events on January 22, January 23, and January 24, between the hours of 5:00 AM and 9:00 AM Pacific Time. Customers participating in the Demand Response program received a notice at least nine hours before the events occurred except for some customers with Honeywell thermostats who were notified two hours before. During the demand response events, thermostats were lowered up to four degrees from their current setpoint. Once the Demand Response event ended, thermostats were returned to their original setpoints.

Dial-It-Down

SoCalGas issued a Dial It Down Alert on Monday January 21, 2019 and it was effective during Aliso Canyon’s withdrawal periods. Southern Californians were urged to reduce their natural gas use.

Events and Conditions Leading up to and During the Withdrawal Periods

Summary

The table below shows the total system receipts and demand during this cold event.

Gas Flow Date	Total Receipts (MMCF)	System Demand (MMCF)
01/21/2019	2,576	3,098
01/22/2019	2,619	3,245
01/23/2019	2,462	3,292
01/24/2019	2,584	2,836

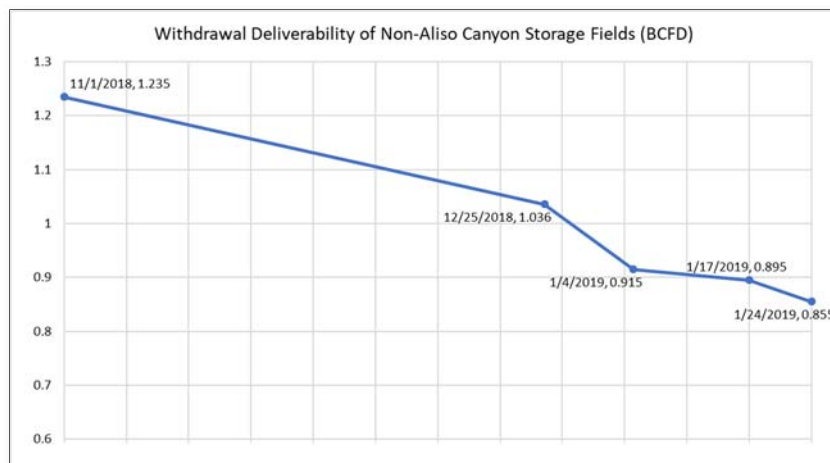
The table below shows the available supply versus demand during this cold event.

Starting Date	Average Pipeline Flowing Supplies During Ramp (MMCFH)	Average Pipeline Flowing Supplies + Available non-Aliso Canyon Storage Withdrawal Capacity During Ramp (MMCFH)	Average Pipeline Flowing Supplies + Available Storage Withdrawal Capacity for all 4 Fields During Ramp (MMCFH)	Ramping Period (HRS)*	Demand at Start of Ramp (MMCFH)	Demand at Peak (MMCFH)
01/22	105	142		7	102	209
01/23	106	143		7	114	226
01/24	99	135		6	110	199
*Ramping period is the duration of time from “start of ramp” to “demand at peak”						

The table below shows the withdrawals that occurred at the non-Aliso Canyon fields while Aliso Canyon was on withdrawal.

Date	Aliso Canyon Withdrawal (BCF)	Non-Aliso Canyon Withdrawal (BCF)
01/21-01/22	0.350	0.322
01/23	0.267	0.187
01/24	0.166	0.167

The graph below shows the decreasing withdrawal deliverability of non-Aliso Canyon storage fields.



Details

The forecast system sendout for January 21 was approximately 2.8 BCF. The actual sendout, however, resulted in approximately 3.1 BCF, 300 MMCF more than forecasted. This increased sendout was due to cold temperatures moving into the territory earlier than forecasted that evening. Due to this higher-than-forecasted sendout in the evening, the system was not packing⁵ enough to accommodate the January 22 morning peak demand, even with all non-Aliso Canyon fields on maximum withdrawal. Aliso Canyon began withdrawal at 11:58 PM Pacific Time.

In the early morning of January 22, 2019, all storage fields remained on withdrawal although Playa Del Rey's withdrawal rate was reduced to preserve its inventory. System demand increased from 102 MMCFH to 209 MMCFH (a daily equivalent of 2.4 BCFD to 5.0 BCFD) over the span of seven hours due to cold temperature. All storage fields' withdrawal rates were raised to accommodate this increase in hourly demand. With pipeline flowing supplies averaging 105 MMCFH and non-Aliso Canyon storage fields' total withdrawal deliverability of approximately 37 MMCFH (142 MMCFH combined), the 209 MMCFH morning peak demand could not be accommodated without withdrawal from Aliso Canyon. After the morning peak demand, Honor Rancho's and Playa Del Rey's withdrawal rates were reduced to preserve their inventories. Later in the afternoon La Goleta ceased withdrawal. Aliso Canyon ceased withdrawal at approximately 4:57 PM Pacific Time. All non-Aliso Canyon storage fields resumed withdrawal later in the evening.

In the early morning of January 23, 2019 Honor Rancho, La Goleta, and Playa Del Rey were already on high withdrawal rates. System demand increased from 114 MMCFH to 226 MMCFH (a daily equivalent of 2.7 BCFD to 5.4 BCFD) over the span of seven hours due to cold temperature. With pipeline flowing supplies averaging 106 MMCFH and non-Aliso Canyon storage fields' total withdrawal deliverability of approximately 37 MMCFH (143 MMCFH combined), the 226 MMCFH morning peak demand could not be accommodated without withdrawal from Aliso Canyon. Withdrawal from Aliso Canyon was initiated at approximately 6:49 AM Pacific Time to accommodate the morning peak demand along with the other storage fields. Similar to the previous day, after the morning peak demand, Honor Rancho's and Playa Del Rey's withdrawal rates were reduced to preserve their inventories. However, La Goleta remained on withdrawal through the remainder of the day. Aliso Canyon ceased withdrawal at approximately 3:30 PM Pacific Time. Honor Rancho and Playa Del Rey resumed withdrawal later in the evening.

In the early morning of January 24, 2019 Honor Rancho, La Goleta, and Playa Del Rey were already on high withdrawal rates. System demand increased from 110 MMCFH to 199 MMCFH (a daily equivalent of 2.6 BCFD to 4.8 BCFD) over the span of six hours due to cold

⁵ The system is packing when available pipeline flowing supplies plus storage withdrawal exceeds the real-time send out. The system is drafting when the real-time sendout exceeds available pipeline flowing supplies plus storage withdrawal. When allowed to appropriately prepare for the peak sendout periods, the SoCalGas system typically has approximately [REDACTED] in available draft supplies that can be used to meet the real-time sendout. For example, if the system is drafting approximately [REDACTED] and the system has [REDACTED] pack available at the start of the peak period, the system could sustain reliability for approximately 3-4 hours.

temperatures. With pipeline flowing supplies averaging 99 MMCFH and non-Aliso Canyon storage fields' total withdrawal deliverability of approximately 36 MMCFH (135 MMCFH combined), the 199 MMCFH morning peak demand could not be accommodated without withdrawal from Aliso Canyon. Withdrawal from Aliso Canyon was initiated at approximately 6:29 AM Pacific Time to accommodate the morning peak demand along with the other storage fields. Similar to the previous day, after the morning peak demand, Honor Rancho's and Playa Del Rey's withdrawal rates were reduced to preserve their inventories. Aliso Canyon ceased withdrawal at approximately 3:07 PM Pacific Time. La Goleta remained on withdrawal for several hours longer than the other fields but eventually ceased withdrawal later in the evening. Playa Del Rey was able to transition to injection later in the evening. As mentioned earlier, at the end of the January 24 Aliso Canyon withdrawal period, Playa Del Rey was below its January 2019 month-end minimum.

Additional Steps or Actions That Could Have Reduced or Eliminated the Need for Withdrawal

As previously stated, SoCalGas proactively worked with the Balancing Authorities each day during the cold weather event to reduce the level on the on-system generation demand prior to withdrawing gas supply from Aliso Canyon. As per the Withdrawal Protocol, SoCalGas withdrew gas from Aliso Canyon when the amount by which the Balancing Authorities could voluntarily curtail demand was insufficient to resolve the shortage of natural gas. SoCalGas could have further curtailed customer demand to reduce or eliminate the need to withdraw gas supply from Aliso Canyon. Per SoCalGas Rule No. 23 and SDG&E Rule No. 14, electric generation demand not necessary to maintain grid reliability is to be curtailed first, followed by other noncore customer demand, and then the remaining electric generation demand. SoCalGas does not consider this to be a reasonable action to reduce or eliminate the need to withdraw gas supply from Aliso Canyon.

Observations and Recommendations

The cold weather event discussed above highlights a number of items or observations regarding SoCalGas' system, assets, and customer demand.

- Comparing non-Aliso Canyon storage inventory levels between now and around this time last year, there is less inventory in those fields this year. In order to manage storage inventory and preserve withdrawal deliverability at the non-Aliso Canyon storage fields, SoCalGas plans to withdraw gas from Aliso Canyon consistent with the Aliso Canyon Withdrawal Protocol. Preserving these storage inventories at the non-Aliso Canyon storage fields is critical in meeting forecasted customer daily and hourly demand and mitigating the risk of extensive gas curtailments this winter. In a letter written to the Commission on January 8, 2019, SoCalGas explained that it may withdraw gas from Aliso Canyon to (1) meet immediate high customer demands; (2) limit withdrawals at Honor Rancho to an average of 90 MMCFD per day for the remainder of January; and (3) restore Playa Del Rey inventory.

- Although SoCalGas' non-Aliso Canyon storage fields play a significant role in supporting reliability of the gas system, they cannot always provide the necessary reliability during significant events, especially when an event runs multiple consecutive days. Because of its size, its physical location on SoCalGas' transmission system, and its withdrawal capacity, Aliso Canyon storage field plays a key role in preventing customer curtailments and protecting the integrity of the SoCalGas system. As we head into the 2019 summer, it should be a priority to build storage inventories to near max levels to provide reliability for customers.
- As previously mentioned above, there was coordination between the Balancing Authorities and SoCalGas during the cold weather event. This coordination was not critical due to the lack of flexibility of the Balancing Authorities to reduce load sufficient enough to mitigate withdrawal from Aliso Canyon. The Withdrawal Protocol should be modified or eliminated to allow Aliso Canyon to increase system flexibility and reliability, add to available supplies, and reduce the need for customers to seek additional supplies during periods of market stress and limited supplies elsewhere.