



California ISO
Shaping a Renewed Future

Operating
Procedure

Procedure No.	4120
Version No.	2.2
Effective Date	8/27/12


**Gas Transmission Pipeline
Derates or Outages**
(New)

**Distribution Restriction:
None**

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Purpose


This procedure describes roles, communications and actions related to natural gas transmission reductions or curtailments and impacts to the electric system in immediate timeframes (Section 3.1) and planned timeframes (Section 3.2).

1. Responsibilities

Gas Pipeline	<p>Contacts end-use natural gas customers (Generators) with schedule and information on curtailment of gas pipeline availability and maximum allowable gas consumption per hour or per day (if available).</p> <p>Communicates with CAISO Outage Coordination Office or Real-Time Operations to provide the same information as well as availability of gas supply to the extent known.</p>
Generator	<p>Informs its Scheduling Coordinator of curtailment/ Outage and supply insufficiency information received from Gas Pipeline.</p> <p>Requests Generation Outages as required due to impacts of curtailment.</p>
Scheduling Coordinator	<p>Informs CAISO about generating resources affected by natural gas curtailments.</p>
CAISO Day-Ahead Market (DAM) Operator	<p>Reviews market results to determine potential curtailment effects by performing the following:</p> <ul style="list-style-type: none"> • Reviews yesterday's Day Ahead Market (DAM), D+2, and D+3 results • Reviews actual Load and forecasts • Determines if any Minimum On-Line Capacity (MOC) constraint needs to be enforced • Runs Extremely Long-Start Commitment Process (ELC) to determine ELC commitment • Determines if any constraint enforcement is necessary • Verifies DAM closed automatically • Evaluates output of Residual Unit Commitment (RUC) process • Evaluates DAM results

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	<ul style="list-style-type: none"> • Runs Market Power Mitigation model (MPM), Reliability Requirement Determination model (RRD), Integrated Forward Market model (IFM), and RUC. • Runs power flow studies with Scheduled Outages and curtailments
CAISO Generation Dispatcher	<ul style="list-style-type: none"> • Reviews and approves instructions from Real-Time Market (RTM) and sends instructions to Market Participants by Automated Dispatch System (ADS) • Logs all compliance issues • Ensures RTM model runs at the designated intervals • Dispatches resources with Exceptional Dispatch as requested by the Shift Supervisor • Constrains resources as required for reliability purposes • Sends market messages as required • Utilizes RTM/Exceptional Dispatch to modify resources in RTM • Adjusts RTM (as needed) for proper Dispatching
CAISO Outage Coordination Office	<ul style="list-style-type: none"> • Confirms receipt of requests for electric generation and transmission Outages and provides notice of rejection, approval, and other communications • Analyzes outages for impacts to reliable operations of the transmission and electric system • Evaluates potential reductions or outages to natural gas supply, providing input on what impact an event may have on reliable electric grid operation
CAISO System Operations	Participate in and coordinate event reporting and notification of any event that can impact the operation of the Day-Ahead and Real-Time markets and reliability of the grid.
CAISO Operations Engineer (Real-Time)	Performs operations engineering studies to support reliable operations. Performs contingency analysis in Day-Ahead (DA) and Real-Time (RT) as required and makes recommendations regarding outage plans and unit commitment requirements. Considers critical variables and requirements that Systems Operations needs for planning and mitigating grid conditions.

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2. Scope/Applicability

2.1 Background Maintenance (planned gas transmission outages and curtailments, gas pressure reductions, etc.) of natural-gas infrastructure systems required for reliable electric operations of the CAISO Controlled Grid should be coordinated between Gas Pipelines, the CAISO Outage Coordination Office, and the CAISO System Operations, especially when actions or events may impact electric system reliability.

Gas Pipelines are not subject to the jurisdiction or authority of the CAISO, but are primarily regulated by state and/or federal regulatory agencies. Therefore, Gas Pipeline cooperation with these procedures is voluntary, does not operate as a waiver or consent to CAISO jurisdiction, and may be limited by or subject to compliance with state and/or federal agency rules and regulations. Information shared between the Gas Pipeline and CAISO in accordance with a Non-Disclosure Agreement (NDA) shall be governed by the NDA.


2.2 Scope/ Applicability

Coordination of gas and electricity is critical to electric grid reliability due to the support provided by electric generation fueled by gas. Outages of the gas transmission system may occur with advance notice (e.g., tests), or without advance notice (e.g., dig-ins).

Such systems include but are not limited to Gas Pipelines that have California power plants as end-users:

- Pacific Gas and Electric Company (PG&E)
- Southern California Gas Company (So Cal Gas)
- Trans Canada Gas
- Gas Transmission Northwest LLC
- Kern River Gas Transmission
- TRANSPORTADORA DE GAS NATURAL DE BAJA CALIFORNIA, S. DE R.L. DE C.V. (TGN), a subsidiary of Sempra Energy Mexico
- North Baja Pipeline, LLC

Under normal circumstances the Generator or Scheduling Coordinator is responsible for notifying CAISO about these types of supply Outages. In the case of a larger natural gas constraint or Outage, the Gas Pipeline will be engaged to actively coordinate Outage planning and project communication.

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Maintenance and Operations of supporting infrastructure systems required for reliable operation of the CAISO Controlled Grid and Balancing Authority Area should be coordinated with either CAISO Outage Coordination Office (Operations Planning Horizon) or System Operations (Real-Time Operations Horizon) when actions or events may affect electric system reliability.

3. Procedure Detail

3.1 Reduction/ Outage Implementation in Real-Time This section applies to a natural-gas reduction or insufficiency with **little or no advance notice**. (Procedures for natural-gas reductions with advance notice are given in Sections 3.2 and 3.3, below.)

Step	Gas Pipeline Actions				
1	Contact their affected end-use customer (Generator) with information on the natural-gas curtailment and maximum daily or hourly gas consumption limit.				
2	<p>Notify CAISO of impacts to end-use customers that include one or more Generators as appropriate to coordinate Outage, which may include but is not limited to:</p> <ul style="list-style-type: none"> • Which end-use gas customers (Generating Units) will be affected • Degree of impact • Reduction/outage start time and date, and end time and date <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #add8e6;">If...</th> <th style="background-color: #add8e6;">Then...</th> </tr> </thead> <tbody> <tr> <td>An anticipated or unanticipated gas-supply interruption threatens a Generating Unit's ability to run at full capacity,</td> <td>Notify the CAISO Generation Dispatcher by telephone. Contact phone numbers are in CAISO Operating Procedure 4120A CAISO and Gas Pipelines Coordination Contact List.</td> </tr> </tbody> </table>	If...	Then...	An anticipated or unanticipated gas-supply interruption threatens a Generating Unit's ability to run at full capacity,	Notify the CAISO Generation Dispatcher by telephone. Contact phone numbers are in CAISO Operating Procedure 4120A CAISO and Gas Pipelines Coordination Contact List .
If...	Then...				
An anticipated or unanticipated gas-supply interruption threatens a Generating Unit's ability to run at full capacity,	Notify the CAISO Generation Dispatcher by telephone. Contact phone numbers are in CAISO Operating Procedure 4120A CAISO and Gas Pipelines Coordination Contact List .				
3	Communicate any gas issues with the CAISO and other affected Gas Pipelines as early as possible. Reference contact list in CAISO Operating Procedure 4120A CAISO & Gas Pipelines Coordination Contact List .				



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Step		Scheduling Coordinator Actions	
4	Notify the CAISO Generation Dispatcher of impacts to the Generating Unit using SLIC per CAISO Operating Procedure 3210 Scheduled and Forced Outages .		
	If...	Then...	
	An anticipated or unanticipated gas-supply interruption threatens a Generating Unit's ability to run at full capacity,	Provide timely notification to the CAISO Generation Dispatcher by telephone AND submit an ambient not due to temperature (cause code 9130) derate card via SLIC.	
5	Submit bids for Real-Time Market as appropriate for the impacted timeframe consistent with the updated gas availability for the Trade Day. For Real-Time this includes any adjustments required from the Day-Ahead Market Awards and Schedules.		
	If...	Then...	
	The natural gas shortage occurs in Real-Time,	Notify the CAISO Generation Dispatcher by telephone AND submit an ambient not due to temperature (cause code 9130) derate card via SLIC.	
Step		CAISO Generation Dispatcher Actions	
6	If...	Then...	
	Anticipating a sudden increase in gas-fueled unit commitments for Real-Time,	Contact impacted Gas Pipelines to advise of forecasted increase in demand for natural gas supply.	
7	<p>Communicate any gas issues between the CAISO and each Gas Pipeline as early as possible.</p> <p>Reference contact list in CAISO Operating Procedure 4120A CAISO & Gas Pipelines Coordination Contact List.</p> <p><i>Note: Also consider a peak day call mechanism to alert market participants.</i></p>		



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Step	CAISO Shift Supervisor and Generation Dispatcher Actions				
8	<table border="1"> <thead> <tr> <th>If...</th> <th>Then...</th> </tr> </thead> <tbody> <tr> <td>CAISO is aware of unplanned pending or current gas reductions, or unintended consequences of planned gas reductions,</td> <td> <p>Evaluate impacts of gas reductions to reliable electric operations.</p> <p>Provide input regarding requirements and adjustments to Generating Units' Outage plans as required to Real-Time Market which may include:</p> <ul style="list-style-type: none"> • Duration – How long are the curtailments going to be in effect? • What area(s)/units are affected? • Can current burn rate be maintained? • Can reductions now be stored for later use (e.g., at peak)? • Can gas curtailment be isolated to a given area and increased in another? • Are the reserves impacted? <p>Actions may include:</p> <ul style="list-style-type: none"> • Cancellation/Reschedule of approved electric transmission outages • Cancellation/Reschedule of approved generation unit outages • Additional unit commitments needed for electric reliability • Adjustments to electric market mechanisms as necessary </td> </tr> </tbody> </table>	If...	Then...	CAISO is aware of unplanned pending or current gas reductions, or unintended consequences of planned gas reductions,	<p>Evaluate impacts of gas reductions to reliable electric operations.</p> <p>Provide input regarding requirements and adjustments to Generating Units' Outage plans as required to Real-Time Market which may include:</p> <ul style="list-style-type: none"> • Duration – How long are the curtailments going to be in effect? • What area(s)/units are affected? • Can current burn rate be maintained? • Can reductions now be stored for later use (e.g., at peak)? • Can gas curtailment be isolated to a given area and increased in another? • Are the reserves impacted? <p>Actions may include:</p> <ul style="list-style-type: none"> • Cancellation/Reschedule of approved electric transmission outages • Cancellation/Reschedule of approved generation unit outages • Additional unit commitments needed for electric reliability • Adjustments to electric market mechanisms as necessary
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CAISO is aware of unplanned pending or current gas reductions, or unintended consequences of planned gas reductions,	<p>Evaluate impacts of gas reductions to reliable electric operations.</p> <p>Provide input regarding requirements and adjustments to Generating Units' Outage plans as required to Real-Time Market which may include:</p> <ul style="list-style-type: none"> • Duration – How long are the curtailments going to be in effect? • What area(s)/units are affected? • Can current burn rate be maintained? • Can reductions now be stored for later use (e.g., at peak)? • Can gas curtailment be isolated to a given area and increased in another? • Are the reserves impacted? <p>Actions may include:</p> <ul style="list-style-type: none"> • Cancellation/Reschedule of approved electric transmission outages • Cancellation/Reschedule of approved generation unit outages • Additional unit commitments needed for electric reliability • Adjustments to electric market mechanisms as necessary 				



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Step	CAISO Shift Supervisor Actions
9	<p>Consider:</p> <ul style="list-style-type: none"> • Implementing restricted maintenance operations per Operating Procedure 4420 System Emergency. • Requesting the WECC RC declare the CAISO an EEA if reserves are expected to be deficient per Operating Procedure 4420 System Emergency. • Implementing Operating Procedure Attachment 4420B Alert/ Warning/ Emergency as needed in response to forecast or existing Operating Reserve deficiencies. <p><i>Note: The specific actions and the order of the actions taken may vary due to system conditions as well as the impacts of natural gas supply issues.</i></p>
Step	CAISO Operations Planning Actions
10	<p>Provide input regarding forecast gas burn and gas requirements for the Real-Time Market to Shift Supervisor and appropriate operators which may include:</p> <ul style="list-style-type: none"> • Planned Generating Units on line • Day-Ahead Schedule • Adjustments needed to maintain reliability and gas fuel curtailments • Generating Units commitments needed for reliability <ul style="list-style-type: none"> ○ Rule of thumb 1 MCF = one thousand CF = one million Btu = one Dekatherm = 0.13 MWh at 7.7 MMBtu/MWh heat rate ○ Potential flexibility for the CAISO to divert gas from less efficient to more efficient Generating Units, or increase output from non-gas generators in the relevant area(s).
Step	CAISO System Operations Actions
11	<p>Continue to coordinate planning and communications internal to the CAISO prior to and throughout reduction/utage implementation timeframe.</p>

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3.2 Reduction/ Outage Implementation in Day-Ahead: This section applies to a natural-gas reduction or insufficiency with **1-2 days of advance notice**. (Procedures for natural-gas reductions with little or no advance notice are given in Section 3.1, above.)

Step	Gas Pipeline Actions	
1	Contact each affected end-use customer (Generator) with information on the natural-gas curtailment and maximum daily or hourly gas consumption limit.	
2	Notify CAISO of impacts to end-use customers that include one or more generators, as appropriate to coordinate outage planning per CAISO Operating Procedure 3210 Scheduled and Forced Outages , which may include but is not limited to: <ul style="list-style-type: none"> • Which Generating Units will be affected • Degree of impact • Reduction/outage start date and time, and end date and time 	
	If... Reduction /shortage is anticipated 1 to 2 days in advance,	Then... Notify the CAISO System Operations Shift Supervisor by telephone.
3	Communicate any gas issues with the CAISO and other affected Gas Pipelines as early as possible. Reference contact list in Operating Procedure Attachment 4120A CAISO & Gas Pipelines Coordination Contact List .	
Step	Scheduling Coordinator Actions	
4	Notify CAISO Day-Ahead Operator of impacts to the Generating Unit using SLIC per CAISO Operating Procedure 3210 Scheduled and Forced Outages .	
	If... Reduction/shortage is anticipated 1 to 2 days in advance,	Then... Provide timely notification to the CAISO Day-Ahead Operator by telephone AND submit an ambient not due to temperature (cause code 9130) derate card via SLIC.



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5	Submit bids for Day-Ahead Market as appropriate for the impacted timeframe consistent with the updated gas availability for the Trade Day.	
	If...	Then...
	Shortage occurs after the close of the Day-Ahead Market but prior to Real-Time,	Notify the CAISO Generation Dispatcher by telephone AND submit an ambient not due to temperature (cause code 9130) derate card via SLIC.
Step	CAISO Day-Ahead Operator Actions	
6	If...	Then...
	Anticipating an increase in unit commitments for the next day,	Notify the Shift Supervisor to contact the impacted Gas Pipelines to advise them of forecasted increase in demand for supply.
Step	CAISO Shift Supervisor and Day-Ahead Operator Actions	
7	<p>Communicate any gas issues between the CAISO and each Gas Pipeline as early as possible. Reference contact list in CAISO Operating Procedure 4120A CAISO & Gas Pipelines Coordination Contact List <i>Note: Also consider a peak day call mechanism to alert market participants.</i></p>	
Step	CAISO Shift Supervisor Actions	
8	<p>Consider:</p> <ul style="list-style-type: none"> • Implementing restricted maintenance operations per Operating Procedure 4420 System Emergency. • Requesting the WECC RC declare the CAISO an EEA if reserves are expected to be deficient per CAISO Operating Procedure 4420 System Emergency • Implementing CAISO Operating Procedure Attachment 4420B Alert/ Warning/ Emergency as needed in response to forecast or existing Operating Reserve deficiencies. <p><i>Note: The specific actions and the order of the actions taken may vary due to system conditions as well as the impacts of natural gas supply issues.</i></p>	



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Step	CAISO Operations Planning Actions
9	<p>Study and analyze next worst contingencies for affected regional areas and Bulk Electric System.</p> <ul style="list-style-type: none"> • Consider path and transfer capabilities and limitations for procurement of energy and reserves • If appropriate, refer to applicable Bulk and/or Regional procedures for studied operating scenarios and requirements • Prepare market contingencies, nomograms and displays as appropriate
10	<p>Provide input regarding forecast gas burn and gas requirements and adjustments for the Day-Ahead Market as applicable to Shift Supervisor and appropriate operators which may include:</p> <ul style="list-style-type: none"> • Planned Generating Units on line • Day-Ahead schedule • Adjustments needed to maintain reliability and gas fuel curtailments • Units commitments needed for reliability • Generating Units commitments needed for reliability <ul style="list-style-type: none"> ○ Rule of thumb 1 MCF = one thousand CF = one million Btu = one Dekatherm = 0.13 MWh at 7.7 MMBtu/MWh heat rate ○ Potential flexibility for the CAISO to divert gas from less efficient to more efficient Generating Units, or increase output from non-gas Generating Units in the relevant area(s).
Step	CAISO System Operations Actions
11	<p>Continue to coordinate planning and communications prior to and throughout reduction/ outage implementation timeframe.</p>

3.3 Forecasting & Planning: Outages with More than 2 Days of Advance Notice

This section applies to a natural-gas reduction or insufficiency with **more than 2 days of advance notice**. (Procedures for natural-gas reductions with less notice are given in Sections 3.1 and 3.2, above.)

Step	Gas Pipeline Actions
1	<p>Contact their affected end-use customer (Generator) with information on the natural-gas curtailment and maximum daily or hourly gas consumption limit.</p>



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2	<p>Notify CAISO of impacts to end-use customers that include one or more Generating Units, as appropriate to coordinate outage planning per CAISO Operating Procedure 3120 Scheduled and Forced Outages, which may include but is not limited to:</p> <ul style="list-style-type: none"> • Which Generating Units will be affected • Degree of impact • Reduction/outage start date and time, and end date and time <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #e1f5fe;">If...</th> <th style="background-color: #e1f5fe;">Then...</th> </tr> </thead> <tbody> <tr> <td>Reduction/shortage is anticipated more than 2 days in advance,</td> <td>Notify the CAISO Outage Coordination Office by email or telephone, the form of notice at the discretion of the Gas Pipeline. .</td> </tr> </tbody> </table>	If...	Then...	Reduction/shortage is anticipated more than 2 days in advance,	Notify the CAISO Outage Coordination Office by email or telephone, the form of notice at the discretion of the Gas Pipeline. .
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Reduction/shortage is anticipated more than 2 days in advance,	Notify the CAISO Outage Coordination Office by email or telephone, the form of notice at the discretion of the Gas Pipeline. .				
3	<p>Communicate any gas issues with the CAISO and other affected Gas Pipelines as early as possible. Reference contact list in CAISO Operating Procedure 4120A CAISO & Gas Pipelines Coordination Contact List.</p>				
Step	Scheduling Coordinator Actions				
4	<p>Notify CAISO Outage Coordination Office of impacts to the Generating Unit using SLIC per CAISO Operating Procedure 3210 Scheduled and Forced Outages.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #e1f5fe;">If...</th> <th style="background-color: #e1f5fe;">Then...</th> </tr> </thead> <tbody> <tr> <td>Reduction/shortage is anticipated more than 2 days in advance,</td> <td>Provide timely notification to the CAISO Outage Coordination Office AND submit an ambient not due to temperature (cause code 9130) derate card via SLIC.</td> </tr> </tbody> </table>	If...	Then...	Reduction/shortage is anticipated more than 2 days in advance,	Provide timely notification to the CAISO Outage Coordination Office AND submit an ambient not due to temperature (cause code 9130) derate card via SLIC.
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Reduction/shortage is anticipated more than 2 days in advance,	Provide timely notification to the CAISO Outage Coordination Office AND submit an ambient not due to temperature (cause code 9130) derate card via SLIC.				
5	<p>Submit bids for Day-Ahead Market as appropriate for the impacted timeframe consistent with the updated gas availability for the Trade Day.</p>				
Step	CAISO Shift Supervisor Actions				
6	<p>Confirm outage with Gas Pipeline prior to the Day-Ahead Market and provide a notice to the market participants via Market Notification System (MNS) no later than 6 AM. MNS message should be consistent with the text in section 3.4 of this procedure.</p>				
7	<p>Confirm outage with Gas Pipeline prior to the outage commencing.</p>				
8	<p>Communicate any gas issues between the CAISO and each affected Gas Pipeline as early as possible. Reference contact list in CAISO Operating Procedure 4120A CAISO & Gas Pipelines Coordination Contact List.</p>				



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<i>Note: Also consider a peak day call mechanism to alert market participants.</i>					
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Step CAISO Operations Planning Actions					
10	<p>Study and analyze next worst contingencies for affected regional areas and Bulk Electric System.</p> <ul style="list-style-type: none"> • Consider path and transfer capabilities and limitations for procurement of energy and reserves • If appropriate, refer to applicable Bulk and/or Regional procedures for studied operating scenarios and requirements • Prepare market contingencies, nomograms and displays as appropriate 				

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11	<p>Provide input regarding requirements and adjustments for inputs to the Day-Ahead Market or Real-Time Market as applicable to Shift Supervisor and appropriate operators which may include:</p> <ul style="list-style-type: none"> • Planned Generating Units on line • Day-Ahead data inputs if appropriate • Adjustments needed to maintain reliability and gas fuel curtailments • Generating Units commitments needed for reliability <ul style="list-style-type: none"> ○ Rule of thumb 1 MCF = one thousand CF = one million Btu = one Dekatherm = 0.13 MWh at 7.7 MMBtu/MWh heat rate ○ Potential flexibility for the CAISO to divert gas from less efficient to more efficient Generating Units, or increase output from non-gas Generating Units in the relevant area(s).
Step	CAISO System Operations Actions
12	<p>Continue to coordinate planning and communications prior to and throughout reduction/ outage implementation timeframe.</p>

3.4 MNS Scripts The following are sample Market Notification System (MNS) messages for the Shift Supervisor to consider when sending market message to participants through MNS:

CAISO Shift Supervisor Actions
<p>Notification, in advance of the Day-Ahead Market:</p> <p>The CAISO has confirmed with [Gas Pipeline] that the gas delivery system outage of [broad description of aggregated outage area] is scheduled to commence at [date, time] for a period of [outage period – hours/days]. Please ensure your Day-Ahead Market Bids are consistent with this outage.</p>
<p>Notification, after the Day-Ahead Market but before Real-Time Market</p> <p>The CAISO has been notified by [Gas Pipeline] that a gas delivery system outage of [broad description of aggregated outage area] is scheduled to commence at [date, time] for a period of [outage period – hours/days]. Please ensure your Real-Time Market Bids are consistent with this outage and that your unit(s) availability is updated using a SLIC ambient not due to temperature (cause code 9130) derate card.</p>
<p>Notification, during Real-Time Market:</p> <p>The CAISO has been notified by [Gas Pipeline] of a gas delivery outage. The outage is estimated to be for a period of [outage period – hours/days, if</p>

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known]. Please ensure your Real-Time Market Bids are consistent with this outage and that your unit(s) availability is updated using a SLIC ambient not due to temperature (cause code 9130) derate card.

Notifications, during Real-Time Market due to gas supply insufficiency:

Due to [issue] in [broad description of aggregate outage area], the CAISO is repositioning the generation fleet to prepare for the evening ramp. Restricted Maintenance has been declared for HE [xx] until HE [xx] as a result of this issue.

Due to [issue] in [broad description of aggregate outage area], the CAISO is extending the Restricted Maintenance Operations until HE [xx].


Note: To the extent that the Gas Pipeline is willing to assist in providing the "description of aggregate outage area" the shift supervisor should consult and consider their proposal for wording. Examples of a "broad description outage area" are "San Diego" or "SP 15."

4. Supporting Information

Operationally Affected Parties None

References Resources studied in the development of this procedure and that may have an effect upon some steps taken herein include but are not limited to:

CAISO Operating Procedure	3210 Scheduled and Forced Outages
CAISO Operating Procedure	4110 System Operations Emergency Preparation, Notifications and Reporting
CAISO Operating Procedure	4420 System Emergency
CAISO Operating Procedure	4510 Load Management Programs and Underfrequency Load Shedding


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Definitions Unless the context otherwise indicates, any word or expression defined in the Master Definitions Supplement to the CAISO Tariff shall have that meaning when capitalized in this Operating Procedure.

The following additional terms are capitalized in this Operating Procedure when used as defined below:
 None

Version History


Version	Change	By	Date
Draft	Initiated draft	T. Johnstone	6/1/11
Draft	Split it into Day-Ahead and Real-Time. Minor changes made by Debi	M. Ludmer	9/19/11
1.0	Final comments/ Edits	P. Bleuss, G. Van Pelt	10/6/11
2.0	1) Changed term “Outage Management” to “Outage Coordination Office” to align with Tariff language 2) Incorporated edits as per conversation with PG&E: - The term Gas Company was changed to Gas Pipeline throughout the procedure. - Section 1. Responsibilities: <u>all responsibilities have been updated.</u> - Section 2.1 Background: updated and added clarification on Non Disclosure Agreement (NDA)s. - Section 2.2 Scope/Applicability: updated first paragraph and the list of Gas Pipelines, and clarified that “under normal circumstances, the <u>Generator or Scheduling Coordinator</u> is responsible for notifying the CAISO about these types of supply outages.” - Section 3.1 <u>Gas Pipeline Actions and Scheduling Coordinator Actions</u> have been significantly revised. -Section 3.1 Step 6 <u>CAISO Generation Dispatcher actions</u> has a minor change on the wording. -Section 3.1 Step 8 <u>CAISO Shift Supervisor and Generation Dispatcher Actions</u> : the “If” portion of the statement has been rephrased and changed “immediate gas reductions” to “unplanned pending or correct gas reduction”. - Section 3.1 Step 9: minor word change from “fuel gas”	M. Ludmer	2/1/12

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	<p>to “natural gas.”</p> <ul style="list-style-type: none"> -Section 3.1 Step 10 <u>CAISO OE Actions</u> has been revised (Rule of Thumb bullet equation). - Section 3.2 <u>Gas Pipeline and Scheduling Coordinator Actions</u> have been revised. -Section 3.2 Step 10 <u>CAISO OE actions</u> have been revised (rule of thumb bullet- formula). -Section 3.3 Gas Pipeline Actions have been revised. - Section 3.3 Step 4 <u>Scheduling Coordinator Actions</u>, “If,Then” statement revised to read “ Provide timely notification to CAISO” instead of “Notify CAISO”. -Section 3.3 Step 7 has been revised. Reference to the MSN messages has been deleted. - Secion 3.3 Step 10 <u>CAISO OE actions</u> have been revised (rule of thumb bullet- formula). - Section 3.4 MNS Scripts have been revised to read “broad description of aggregated outage area.” - Revised Attachments 4120A and 4120B: Changed term “Gas Company” to “Gas Pipeline and delted Huntington Beach units 3&4 		
2.1	Section 3.1 step 10, Section 3.2 steps 9-10, Section 3.3 steps 10-11: Changed action responsibility from ops engineering to ops planning.	R. Kozlov	2/17/12
2.2	Replaced references to 4220 Restricted Maintenance Operations to 4420 System Emergency since 4220 has been merged with 4420.	M. Ludmer	8/24/12

5. Periodic Review Procedure

Review Criteria	There are no specific review criteria identified for this procedure, follow instructions in Procedures 5510 and 5520.
Frequency	Review as recommended in Procedures 5510 and 5520.
Incorporation of Changes	There are no specific criteria for changing this document, follow instructions in Procedures 5510 and 5520.

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Technical Review

Reviewed By Content Expert	Signature	Date
Operating Procedures	Roman Kozlov*	2/17/12
Operations Planning	Dede Subakti*	1/18/12
Real-Time Ops	Greg Tillitson*	1/19/12
DA Operations & Scheduling Services	Brad Bouillon*	1/18/12
Outage Coordination	Duke Luu*	1/17/12

Approval

Approved By	Signature	Date
Director, System Operations	Nancy Traweek*	1/30/12
Director, Operations Engineering Services	Gary DeShazo*	1/23/12

*Signed previous version: changes were minor and did not require full signature.

Appendix

[4120A CAISO & Gas Pipelines Coordination Contact List](#)

[4120B CAISO & Gas Pipelines Power Plant Reference List](#)