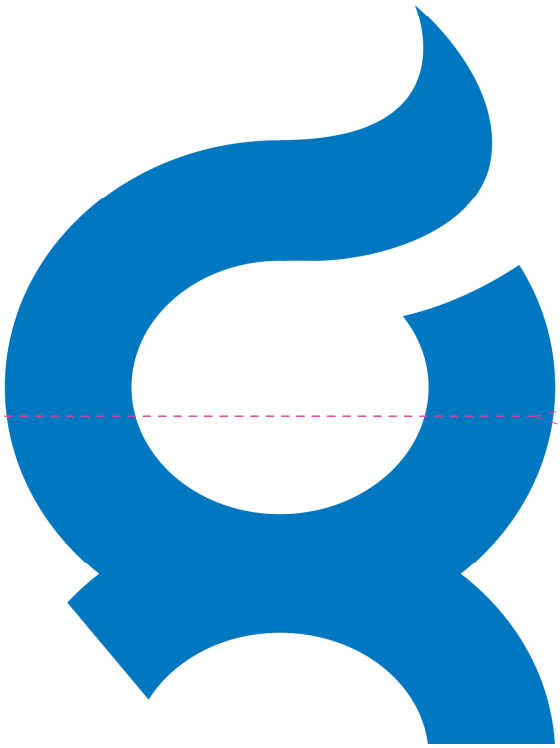
Critical Contingency Management Plan

Prepared in accordance with the
Gas Governance (Critical Contingency Management) Regulations 2008



First Gas Limited
October 2019

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Version Control

This document is uncontrolled

Control	Details
Owner	Ryan Phipps, Transmission Operations Manager
Version	12.0
Department	Transmission Services
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Preparer	John Blackstock, Senior Commercial Advisor

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History

Version	Date	Summary of changes	Preparer
7.0	18/12/2009	First issue for publication	
8.0	09/05/2012	Revised to update the CCOs contact details	
9.1	11/09/2012	Revised to reflect the recommendations made in the December 2011 and April 2012 Performance Reports, and amendment to Critical Contingency Imbalance Methodology	
9.0	25/02/2014	Revised to update TSO and CCO contact details with effect from 1 March 2014	
10.0	14/05/2014	Revised to reflect amendment to the Gas Governance (Critical Contingency Management) Regulations 2008, and the appointment of a new CCO	
10.1	17/12/2014	Minor corrections and amendments made to ensure consistency with the CCO's amended Communications Plan	
10.2	23/05/2016	Adapted to First Gas Limited business branding with minor updates in formatting	Rebecca Pendrigh
10.3	16/06/2016	Revised to reflect the sale of the Maui Pipeline asset to First Gas Limited and consequently removal of references to MDL and other necessary contextual amendments	John Blackstock
11.0	20/02/2017	Revised to become sole CCMP document for all of the Transmission System and to incorporate suggested amendments from previous critical contingency test exercises	John Blackstock
12.0	01/10/2019	Revised to accommodate the commencement of the Gas Transmission Access Code (GTAC) that replaced the Maui Pipeline Operating Code (MPOC) and Vector Transmission Code (VTC)	John Blackstock

Approval

Version	Date	Approved	By
10.2	23/05/2016		Ryan Phipps
10.3	16/06/2016		Ryan Phipps
11.0	21/02/2017		Ryan Phipps
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1. Introduction

1.1. Purpose

This Critical Contingency Management Plan (**CCMP**) has been prepared by First Gas Limited (**First Gas**) in compliance with its obligations as the Transmission System Owner (**TSO**) under the Gas Governance (Critical Contingency Management) Regulations 2008 and amendments (the **Regulations**).

The stated purpose of the Regulations is "to achieve the effective management of critical gas outages and other security of supply contingencies without compromising long-term security of supply"[1].

1.2. Scope

The content to be included in a CCMP is specified in Regulation 25 and comprises:

(a) Thresholds that will be used by the Critical Contingency Operator (CCO) to determine whether a Critical Contingency should be declared;

(b) A description of the events which First Gas considers may result in a breach of the thresholds;

(c) Actions that First Gas could take to remedy a breach of the thresholds;

(d) A process based on Schedule 2 of the Regulations outlining the manner in which curtailment and restoration arrangements will be implemented during a Critical Contingency;

(e) A communications plan which includes a description of the types, mode, and timing of communications initiated and received by First Gas before and during a Critical Contingency;

(f) Contact details of suitably qualified personnel at First Gas who will be responsible for receiving communications from the CCO and giving directions in accordance with the CCMP;

(g) A description of the circumstances under, and reasons why, First Gas considers it may be desirable for the CCO to restore supply to the transmission system in an order different from that described in the curtailment arrangements specified in the Regulations;

(h) A process based on Regulations 73 to 82 outlining the manner in which Critical Contingency imbalances will be calculated for each affected party;

(i) A list of contact details for the parties specified in Regulation 25(1)(i);

(j) A description of how transmission system information referred to in Regulation 38 will be provided by First Gas to the CCO; and

(k) Any other items appropriate to give effect to the purpose of the Regulations.

1.3. Relationship with Transmission System Codes

This CCMP must be consistent with all applicable Transmission Codes. From 01 October 2019 the Gas Transmission Access Code (GTAC) will be the single Transmission Code and will replace the Maui Pipeline Operating Code (MPOC) and the Vector Transmission Code (VTC).

The GTAC must be read subject to the Regulations and if any obligation or liability in respect of the same matter is provided for in both the GTAC and the Regulations then to the extent there is any inconsistency the Regulations prevail.[3]

Critical Contingency Imbalance and Mismatch are considered equivalent terms. Accordingly, any payment under the Regulations in relation to a Contingency Imbalance discharges any payment obligation in respect of the same Contingency Imbalance in the GTAC (i.e. Excess Running Mismatch Charges).[4]

[1] Regulation 3
[3] Regulation 13
[4] Regulation 81

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Deleted: This currently includes Vector Transmission Code (VTC) and the Maui Pipeline Operating Code (MPOC).

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1.4. Roles During a Critical Contingency

The roles of the CCO and First Gas during a critical contingency are described in the Regulations. First Gas as a TSO during a critical contingency is required to "comply with the directions of the CCO", and based on those directions, First Gas must "issue directions to Retailers and Large Consumers" in accordance with the Regulations, and in a manner consistent with this CCMP and the communications plan contained within.[5]

First Gas may also have a separate role during a critical contingency as the owner of an asset (i.e. the gas Transmission System) the failure of which has caused or contributed to the declaration of a Critical Contingency. The obligations of an "Asset Owner" are explored in further detail in section 4.4 of the CCMP.

The roles and responsibilities of the following important stakeholders are also described in the Regulations:

- Retailers;
- Large Consumers;
- Gas Distributors; and
- Gas Producers (including Gas Storage Operators).

First Gas has developed "Quick Reference Guides" that are designed to set out the key responsibilities, activities and expectations relating to these particular stakeholders prior to and during a critical contingency event. These short guides provide stakeholders with a more focused summary of the key processes and information flows for their particular group, including communications with both the TSO and the CCO. The guides are able to be viewed and downloaded from the "Critical Contingency" section of the Publications menu on OATIS.[6]

1.5. Terminology

All capitalised terms in this CCMP have the same meaning as those terms in the Regulations. Any GTAC terminology will be supported by the appropriate GTAC reference where required

2. Pre-Critical Contingency

2.1. Prior to a Critical Contingency Declaration

The GTAC and its supplementary documentation sets out First Gas', rights and obligations as TSO ahead of, and to some extent during, a Critical Contingency.

First Gas' remedial actions prior to the declaration of a critical contingency may include purchasing balancing gas, maximising throughput through use of First Gas' compressors, reconfiguration of the Transmission System, calling on interruptible contracts, operational flow orders (OFO's), curtailments and shutdowns.

Section 2.2 sets out the type of events that may feasibly result in the declaration of a critical contingency by the CCO. If it is likely that any of those events may result in a breach of a critical contingency pressure threshold for any part of the Transmission System then First Gas will inform the CCO in accordance with the CCO Communication Plan and section 3 of this CCMP.

The CCO may issue a potential Critical Contingency notice to give warning that Transmission System conditions have deteriorated to a point where a Critical Contingency is likely to occur.

When a potential Critical Contingency has been resolved First Gas will inform the CCO in accordance with the CCO Communication Plan and section 3 of this CCMP.

[5] Regulation 54(a) and 54(b)(ii)

[6] As noted in section 3.2.1, the Open Access Transmission Information System (OATIS) will be replaced by TACOS when the GTAC comes into force on 01 October 2019. Prior to 01 October 2019, the Quick Reference Guides are accessible at: https://www.oatis.co.nz/Ngc.Oatis.UI.Web.Internet/Common/Publications.aspx.

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Commented [JB1]: The revised URL for the location of these documents will be provided prior to 01 October 2019. They will also be updated (where required) to reflect the commencement of GTAC and TACOS.

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If a Critical Contingency is declared by the CCO these remedial actions may continue to be taken, if appropriate, in combination with instructions from the CCO.[7]

2.2. Events that may cause threshold breaches and remedy actions

The following are events First Gas considers may feasibly result in a breach of a Critical Contingency threshold[8]:

- Loss or reduction of supply from a gas producer or interconnected pipeline
- A failure by an interconnected party or Shipper to respond to an operational flow order
- Loss or reduction in compression capacity
- Sabotage
- Pipeline defect causing temporary de-rating of pipeline
- Interruption to supply due to operational issues (e.g. stuck PIG)
- Pipeline defect or damage causing loss of containment
- Shippers or Delivery Points with an OBA taking more than the quantity of gas they are contractually entitled to under the GTAC
- Main line valve malfunction causing isolation of downstream pipeline
- Natural disaster including earthquakes, tsunami and volcanic eruption

The introduction of off-specification gas or loss/reduction in odorant injection are considered to be credible system threats. However, it is unlikely that either of these events would give rise to a critical contingency threshold breach. First Gas employs a number of controls and monitoring procedures to protect against these types of events occurring and has plans and equipment available to deal with such events.

First Gas has comprehensive emergency response plans, which are activated by a variety of scenarios including physical damage or limitations to the system and unplanned supply interruptions. First Gas operates a 24/7 Gas Operations Control Centre (**GOCC**) which is also used as an emergency control centre when emergency response plans are activated. Emergency response capability is tested and evaluated by either a trial exercise or training exercise on a regular basis.

Note that the applicable critical contingency thresholds required under r25 (1) (a) are described further in Section 5.2.

Deleted: Prior to any breach of a Critical Contingency threshold, each of these events will be dealt with in accordance with the respective transmission system codes. Accordingly remedial actions may include, where practicable, increasing the volume of gas taken from other injecting or interconnected parties (including through tendering for gas injection), maximising throughput through other compressors, calling on interruptible contracts, operational flow orders, curtailments and shutdowns.¶

Deleted: If a Critical Contingency is declared by the CCO these remedial actions may continue to be taken, if appropriate, in combination with load curtailment instructions from the CCO.¶

[7] See in particular section 9.11 GTAC

[8] Reg 25(1)(b). Information relating to Critical Contingency thresholds is provided in Section 5

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3. Communications Plan

3.1. Purpose and objective

The purpose of this communications plan is to describe the notices that First Gas as TSO will issue to affected parties during a Critical Contingency event, the reciprocal communications and the timeframes under which those communications will take place.

The overriding objective of the plan is to meet the requirements of Regulations 25(1)(e), (f), (i), (j).

3.2. Contacts & Target audience

3.2.1. *First Gas IT systems*

The Transmission Access Commercial Operations System (TACOS) is the online, interactive IT system that will underpin GTAC contact requirements. TACOS is built on Tieto's Energy Components (EC) platform.

Under GTAC, Shippers and Interconnected Parties will use TACOS to manage transmission system capacity and gas flows in accordance with GTAC requirements. Where the GTAC refers to the Open Access Transmission Information System (OATIS) it will be deemed to refer to TACOS.

TACOS is complemented by a public-facing website (referred to as the GTAC public website), which will provide data to users without a login and in an open data format. The website will also contain a link to the TACOS login page.

First Gas will use functionality in both TACOS and the GTAC public website to meets its requirements under the CCMP and the Regulations.

3.2.2. *Target audience*

The target audience for communications under the CCMP is defined in Regulations 25(e) and (i) and includes the following:

- CCO
- Interconnected Parties
- Large Consumers
- Operators of gas storage facilities
- Shippers
- Retailers
- Gas distributors
- Operators of gas production facilities

The individual parties that currently fall within the ambit of these target audience categories are set out in Appendix 4.

3.2.3. *Stakeholder Contact Details*

The contact details for these groups are contained in TACOS. The target audience listed above contains both stakeholders that will use TACOS on a regular basis (e.g. Shippers) and some that will only access TACOS very infrequently (e.g. gas distributors). A TACOS user login is required for stakeholders to manage their contact details that will be used by First Gas for notification purposes under this CCMP. Contact details will include email addresses and cell-phone numbers for SMS notification purposes.

Reminders for stakeholders to check and confirm, or advise of changes to, their contact details in TACOS will be sent by email on a monthly basis.

First Gas will also contact stakeholders on a 6-monthly basis to share the contact details that are currently stored in TACOS and request that they are reviewed and updated where necessary.

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3.2.4. First Gas Contact Details

First Gas must nominate a person who will be responsible for giving communications to the CCO under the CCO Critical Contingency Communications Plan.[9] The details for this person are provided in Appendix 6.

First Gas must also nominate a person who will be responsible for giving directions in accordance with the CCMP.[10] First Gas nominates the Gas Transmission Duty Manager, or such other persons nominated and authorised by First Gas from time to time to issue directions on behalf of First Gas.[11]

Contact details for the Gas Transmission Duty Manager are provided in Appendix 6.

3.3. Communication of notices

3.3.1. TACOS Distribution Lists

TACOS uses distribution list functionality to capture all stakeholders that will need to be notified by email and SMS when any notices are issued by First Gas in accordance with First Gas CCMP. All stakeholders on the distribution list must have a TACOS user log-in, which provides them with the ability to manage their individual contact details.

First Gas will manage and maintain a "critical contingency" distribution list in TACOS that will be updated when requested by individual stakeholders and after biannual review by First Gas.

3.3.2. Normal method for issuing Notices

Notices from the CCO to First Gas will be issued in accordance with the CCO Communications Plan. The CCO will use reasonable endeavours to consult First Gas before issuing notices.

All notices issued by First Gas in accordance with this CCMP will be published:

- on the GTAC public website;
- in a PDF format;
- using the proforma templates set out in the CCO Communications Plan (reproduced in Appendix 5);
- within 30-minutes of receiving them from the CCO;
- to the critical contingency distribution list set up in TACOS; and
- with an accompanying email and SMS notification to the members of that critical contingency distribution list.

Notices may be issued in this manner at any time. Stakeholders are expected to be able to receive and act on such notices in a timely manner.

Notices are classified as either urgent or ordinary. According to the circumstances urgent notices[12] will either be given in writing or will be given orally by telephone[13] and confirmed in writing. Written confirmation will be sent by electronic transmission as described in regulation 21(1)(d) or (e). Ordinary notices will be sent by electronic transmission[14].

3.3.3. Alternative methods for issuing Notices

If the notice functionality on TACOS or the GTAC public website is unavailable, First Gas will use standard PC applications to communicate written notices as soon as reasonably practicable.

[9] Regulation 25(1)(f)(i)
[10] Regulation 25(1)(f)(ii)
[11] Other such persons may include the Systems Control Manager, Gas Controller, Duty Scheduler, Senior Management and communications personnel.
[12] Communication of Urgent notices is described in regulation 23
[13] An "urgent notice may be given orally where the person issuing a notice considers that the urgency of the situation means the notice should not be given in writing.
[14] Communication of Ordinary notices is described in regulation 21 (1) (d,e).

Deleted: *OATIS stores contact details by contact group and party. Members of the target audience who are regular users of OATIS (e.g. shippers, Maui pipeline interconnected parties etc.) have separate OATIS contact groups from those who do not use OATIS regularly (e.g. gas distributors, retailers etc.). This enables First Gas to send notifications (via SMS and e-mail) to each relevant OATIS contact group when necessary. ¶*
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For parties that do not have access to OATIS and any changes not caught by the monthly check by parties with OATIS access, First Gas will check/update all contact details every six months or at other times considered appropriate by First Gas.

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Deleted: First Gas uses the operational contact details contained in the 'Contact Details' screen of OATIS which includes the 'Operational Contact', 'Email Address', 'SMS' and 'Telephone Number' fields for the purpose of communicating notices. …

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If the communication of notice alerts by SMS text message and email is unavailable via TACOS, First Gas will utilise alternative SMS text messaging and email communication using standard PC applications.

In the event that standard PC applications are unavailable to First Gas, First Gas will communicate notices by telephone and provide written confirmation as soon as reasonably practicable afterwards. If land line and cell phone services are unavailable to First Gas, First Gas will use its satellite phone service to communicate notices by telephone.

3.3.4. ***General Critical Contingency Notice Conditions***

Notices will be considered received by the recipient on the date and at the time the email and/or SMS notification is generated in TACOS.

All notices issued are pursuant to the arrangements contained in this section 3 – Communications Plan of the First Gas CCMP.

3.4. Communication of Potential Critical Contingency

If the CCO issues a Notice of Potential Critical Contingency or a Notice of Termination of Potential Critical Contingency to First Gas, First Gas will communicate the Notice to all the parties listed in Appendix 4 in accordance with the process described in section 3.3.

3.4.1. ***Notice of Potential Critical Contingency***

The purpose of this notice is to advise that the CCO has determined that a potential Critical Contingency situation exists. The notice will give details of the areas of the transmission system that are affected.

3.4.2. ***Notice of termination of potential Critical Contingency***

The purpose of this notice is to advise that the CCO has determined that a potential Critical Contingency situation has been terminated.

3.5. Communications on Declaration of Critical Contingency

When the CCO issues a Notice of Declaration of Critical Contingency to First Gas in accordance with Regulation 49, First Gas will communicate the notice to all the parties listed in Appendix 4 in accordance with the process described in section 3.3.

3.5.1. ***Notice of Declaration of Critical Contingency***

The purpose of this notice is to advise that the CCO has declared a Critical Contingency. The notice will give details of the areas of the transmission system that are affected and advise that CCO and TSO directions must be complied with.

The notice will also state whether the Critical Contingency is a Regional Critical Contingency as determined by the CCO in accordance with Regulation 52A(1) and (2), or whether that determination has not yet been made.

A process flow chart is included in Appendix 1 illustrating the process for communications during a Critical Contingency declaration.

3.6. Communications during a Critical Contingency

This section describes the notices that may be issued during a Critical Contingency. A process flow chart is included in Appendix 2 illustrating the process for communications during a Critical Contingency.

When the CCO issues notices to First Gas in accordance with Regulation 53, First Gas will communicate the notice to all the parties listed in Appendix 4 in accordance with the process described in section 3.3.

All notices will be sent to all parties listed in Appendix 4 regardless of whether or not they may be affected by a Critical Contingency. It will be the responsibility of these parties to determine what actions they may need to take as result of receiving a notice.

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If First Gas deems that complying with any direction issued by the CCO would unreasonably endanger the life or safety of any person it will give urgent notice to the CCO and any other affected parties by telephone and confirm the details in writing as outlined in section 5.1.

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If at any time during or after a Critical Contingency First Gas becomes aware of, or obtains information pertaining to, the non-compliance with directives to curtail demand, revise demand curtailment or restore demand, it will inform the CCO in writing.

3.6.1. ***Notice of Direction to Curtail Demand***

The purpose of this notice is to give directions in accordance with the directive issued by the CCO to curtail demand to stabilise the affected parts of the transmission system. The directive will be in accordance with the curtailment bands described in Section 5.4. The notice may contain directions to curtail subsets of demand within a curtailment band or subsets of geographically located demand within a curtailment band.

3.6.2. ***Notice of Direction to Revise Demand Curtailment***

The purpose of this notice is to give directions in accordance with the directive issued by the CCO to revise demand curtailment for the purpose of further stabilising the transmission system. The directive will be in accordance with the curtailment bands described in section 5.4. The notice may contain directions to curtail subsets of demand within a curtailment band or subsets of geographically located demand within a curtailment band.

For the avoidance of doubt the most recently issued notice applies and will include all demand previously directed for curtailment and all additional demands that require curtailment.

3.6.3. ***Retailer & Large Consumer Compliance Updates***

In accordance with Regulations 55(2) and 56(3), Retailers and Large Consumers are to provide regular compliance updates to First Gas as TSO. These should be provided by email to First Gas at intervals recorded on the notices of demand curtailment or revised demand curtailment. Compliance updates should use the template posted on OATIS and in accordance with the instructions contained within that template. First Gas will provide these updates to the CCO in a consolidated form.

3.6.4. ***Notice of Direction to Restore Demand***

The purpose of this notice is to give directions in accordance with the directive issued by the CCO. The CCO will have determined that the transmission system has stabilised to the extent that demand can be restored. Demand restoration will normally occur in the reverse order in which it was curtailed. However, the notice may contain directions to restore demand in an alternative order. The notice may also contain directions to restore demand in accordance with the requirements of the Civil Defence Emergency Management Act 2002 (CDEMA).

For the avoidance of doubt, the most recently issued notice applies and will include all demand previously directed for restoration and any additional demands that can now be restored.

3.6.5. ***Notice of Direction to TSO to undertake Reconfiguration***

The CCO may consult with the TSO as to whether reconfiguration of the transmission system is feasible and would contribute to achieving the purpose of the Regulations. The CCO may then issue a notice to the TSO directing the TSO to undertake that reconfiguration.

3.7. Communications at the termination of a Critical Contingency

When the CCO issues a Notice of Termination of Critical Contingency to First Gas in accordance with Regulation 61, First Gas will communicate the notice to all the parties listed in Appendix 4 in accordance with the process described in section 3.3.

3.7.1. ***Notice of Termination of Critical Contingency***

The purpose of this notice is to advise that the CCO has determined that the Critical Contingency has been terminated. The notice will contain details on the time and date that the Critical Contingency terminated.

A process flow chart is included in Appendix 3 illustrating the process for communications during a Critical Contingency termination.

Deleted: In accordance with Regulations 55(2) and 56(3), Retailers and Large Consumers are to provide regular compliance updates to First Gas. These should be provided by email to First Gas at intervals advised by First Gas when issuing the directive from the time the first direction to curtail demand is issued. Compliance updates should be provided using the template posted on OATIS. First Gas will provide these updates to the CCO.¶
In accordance with Regulation 54A, if any part of First Gas's transmission system has failed or been damaged, and that failure or damage has contributed to the critical contingency, it will publish the information required in Schedule 5 of the Regulations after a curtailment direction in respect of band 3 or above. If it is required to publish information in accordance with Regulation 54A, it will update that information regularly.¶

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3.8. Communication with CCO

First Gas will communicate with the CCO as set out in the CCO Communications Plan either in person, by telephone, and where written communications are required, by use of email using standard PC applications.

Where written communications are required and if standard PC applications are unavailable to First Gas as TSO, First Gas will communicate with the CCO by telephone and provide written confirmation by email as soon as reasonably practicable afterwards, or First Gas may elect to hand deliver written communications.

If land line and cell phone services are unavailable to First Gas, First Gas will use its satellite phone service to communicate by telephone or use in person communications if possible.

First Gas has given permission for the CCO to respond to the First Gas Control Room in order to manage a critical contingency event from that location if the circumstances suit. The benefits from both the TSO and CCO working from the same location include:

- CCO being able to view real-time SCADA screens to monitor system conditions;
- Face to face communications between CCO and TSO minimising and potential delays and reducing the risk of miscommunication;
- Reducing the time delays associated with the SCADA Data Transfer process.

3.9. Communication with Retailers and Large Consumers

Retailers and Large Consumers are to provide regular compliance updates to First Gas at the intervals specified on the relevant critical contingency notices. In the interest of efficiency and avoiding duplication of processes, First Gas have developed a standard, combined Retailer and Large Consumer compliance update template to be sent to the First Gas email addresses listed on the update template. Large Consumer representatives will populate the "Large Consumers" tab of the template, and Retailer representatives will populate the "Retailers" tab of the template. Retailers and Large Consumers are encouraged to familiarise themselves with the update template and the important notes contained in it regarding its use.[15]

The timely provision of accurately populated compliance updates is essential during any critical contingency event. The CCO uses this information, in conjunction with other information and analysis made available by the TSO, to assess the stability of the transmission system and better inform CCO decision-making during the critical contingency. Accordingly, First Gas requests that Retailers and Large Consumers ensure that their processes for notifying consumers as well as sourcing and providing compliance information are maintained and understood by all relevant staff. First Gas understands that such information and processes will be recorded by Retailers in the detailed "Retailer Curtailment Plans" required by section 43 of the Regulations. It is First Gas' expectation that all Retailers will act in accordance with their Curtailment Plans during a critical contingency event.

In order to increase efficiency and minimise any scope for confusion, First Gas requests that where possible, all compliance updates come from a single designated point of contact for each Retailer or Large Consumer.

[15] First Gas intends to explore the possibility of automating the Large Consumer and Retailer Update process to further improve efficiency.

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4. Information requirements

4.1. General

The information which First Gas is required to provide to the CCO is specified in Regulations 38 and 38A.

The CCO will have access to information contained in TACOS through a dedicated "CCO" role and will be able to access the GTAC public website. First Gas will provide the CCO with relevant information from the SCADA system. Any additional information not readily available, which may be required by the CCO under Regulations 38 and 38A will be requested in writing by the CCO.

4.2. Information systems

First Gas will provide the CCO with an appropriate level of access to TACOS, the GTAC public website and SCADA systems to allow compliance with the information provision set out in Regulations 38 and 38A.

4.3. Operational pipeline data to be provided to CCO

First Gas will provide information to the CCO to assist in the determination and declaration of a Critical Contingency, monitoring of conditions during the Critical Contingency and the determination to terminate the Critical Contingency. Such information includes metering and pressure data, technical pipeline information and notices issued by First Gas pursuant to the GTAC.

Outside of any potential or actual Critical Contingency, the CCO requires continuous access to Transmission System information. This information is intended to keep the CCO informed as to the status of the Transmission System and enable the CCO to maintain an appropriate state of readiness for any potential or actual Critical Contingency.

To achieve this, the CCO has developed a Communications Protocol with the TSO, which sets out the information requirements that apply to the TSO during normal system conditions as well as during abnormal system conditions which do not amount to a potential or actual Critical Contingency. These requirements are consistent with r38 and 38A of the Regulations. A summary of the Communications Protocol for information purposes, is provided in Appendix 11 of the CCO's Communications Plan.

It is noted here that under r38 (2) (b) this information must only be used by the CCO for the purpose of performing its obligations under The Regulations.

4.4. Publishing of Information by Asset Owner

In accordance with r54A and section (2) of Schedule 5 of the Regulations, every asset owner whose asset has become damaged or has failed and has caused or contributed to a Critical Contingency is required to ensure that information is published and updated regularly so that interested parties are informed about a Critical Contingency.

The most likely "asset owners" who would cause or contribute to a critical contingency are First Gas as the owner of the transmission system, owners of gas production or treatment facilities, and the owners of third party pipelines interconnected with First Gas' transmission system.

The affected asset owner (which may not be First Gas) must, after the curtailment of consumer installations in curtailment band 3, prepare a statement containing the information contained in Appendix 10.

Where failure of or damage to any part of First Gas' transmission system has caused or contributed to the Critical Contingency, First Gas will post the information required above on the First Gas website (www.firstgas.co.nz) and the GTAC public website.

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Deleted: The information to be provided may include all or some of the following:¶
Interconnection point data including pressure and volumes of gas transferred¶
Injecting production station data including pressure and volumes of gas being injected¶
Gas quality data from the injecting production stations in (b)¶
Scheduled, and nominated quantities of gas to be received into the system from (a) and (b)¶
Expected quantities and levels of system imbalance¶
Rate of change of imbalance¶
Expected time to reach the Pmin Critical Contingency threshold¶
Parts of the transmission system affected¶
Historical flow, Linepack and pressure data¶
Technical pipeline and equipment information¶
Performance and status of load shedding¶
Progress and status of event that triggered the Critical Contingency¶
Expected time until termination criteria are reached¶
Recovery of Linepack, pressure levels¶
Security of any supplies reinstated from Producers¶
Reinstatement of the nominations and scheduling processes¶
Expected gas demands upon termination of Critical Contingency¶
Historical flow rates, Linepack and pressure data

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5. Intra-Critical Contingency processes

5.1. Safety statement

If First Gas considers that compliance with any part of the Regulations or any direction issued by the CCO (or any other party) in pursuance of the Regulations would unreasonably endanger the life or safety of any person then First Gas may elect not to comply and/or take alternative actions deemed to be appropriate under the prevailing circumstances.

Should First Gas elect to not comply with the Regulations on the grounds of safety and to take alternative actions it will inform the CCO and any other affected parties. Information will be communicated by telephone and confirmed in writing giving reasons for not complying and details of appropriate alternative actions.

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5.2. Pipeline thresholds

The Critical Contingency thresholds for the transmission system are measured at the points in Table 1. The thresholds themselves are expressed both as a minimum pressure threshold (Pmin) and in terms of the time remaining to reach Pmin. The time thresholds are based on the need to allow sufficient time for load curtailment directives to be issued and complied with by the affected consumers in the selected curtailment bands during a Critical Contingency.

The pressure thresholds are selected to ensure that the transmission system and connected gas distribution networks continue to be supplied with gas in sufficient quantities to prevent pressure falling to dangerous or unsustainable levels and to continue to supply gas in sufficient quantities to domestic consumers.

Deleted: Further rationale for the setting of critical contingency thresholds is provided in Appendix 9 of this CCMP.¶

Table 1 pipeline thresholds

Pipeline Name	Point of Measurement	P_{min} (barg)	Threshold Time (Hours to reach P_{min})
Maui	Rotowaro	32.0	3
Maui	Any other gas gate	30.0	3
South	Waitangirua	37.0	10
Hawkes Bay Lateral	Hastings	32.0	5
Frankley Road to KGTP	KGTP	35.0	3
Bay Of Plenty	Gisborne	30.0	5
Bay Of Plenty	Taupo	30.0	5
Bay Of Plenty	Tauranga	30.0	6
Bay Of Plenty	Whakatane	30.0	5
Morrinsville Lateral	Cambridge	32.0	5
Central (North)	Westfield	42.0	3
North	Whangarei	25.0	5
First Gas Pipeline	Any other gas gate	30.0	5

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In the event of pipeline damage or other major physical asset failure threshold time to reach P_{min} may be significantly shorter than the times indicated in the above table. It is also possible that critical contingency thresholds may be breached for short durations due to factors such as:

- high demand or system flow changes
- operation of compressors
- Station maintenance and instrumentation calibration
- start-up of Large Consumers
- monitoring system anomalies
- pipeline pigging

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Such temporary breaches will typically be as a result of transient system conditions. Further detail on the setting of contingency pressure thresholds and the steps that First Gas takes to manage transient system conditions is found in Appendix 9.

5.3. Declaration of a critical contingency

The process for declaring a critical contingency as described in the Regulations, is summarized below.

The CCO must make a determination that there is a critical contingency if:

- The CCO considers that a breach has occurred of 1 or more of the thresholds that are specified in a CCMP under r25 (1) (a); or

The CCO:

- Has a reasonable expectation that a breach of 1 or more of those thresholds is otherwise unavoidable; and
- Considers that the determination is necessary to achieve the purpose of these regulations

5.4. Curtailment arrangements

During a Critical Contingency First Gas will receive and follow the directions given by the CCO as specified under Regulations 50 and 54.

The CCO is responsible for ensuring its directions (including any curtailment directions) meet the objectives set out in Schedule 2 to the Regulations. The arrangements described in this plan for First Gas have been designed to complement CCO directions and are consistent with those objectives.

If First Gas believes any CCO issued curtailment direction is inconsistent with the objectives set out in Schedule 2 to the Regulations, it will immediately advise the CCO accordingly.

As soon as reasonably practicable following receipt of directions from the CCO, First Gas will issue notices to all parties listed in Appendix 4 in accordance with the process described in section 3.3.

The curtailment bands are specified in Schedule 3 to the Regulations and are reproduced in Appendix 11.

CCO curtailment notices may contain directions to curtail subsets of load within a curtailment band or subsets of geographically located load within a curtailment band. First Gas will assess these directives and suggest to the CCO any alternatives it feels would better serve the purpose of the Regulations.

For the avoidance of doubt, curtailment arrangements under the Regulations are separate from, and independent of, any curtailment carried out under the GTAC.

5.5. Normal demand restoration arrangements

Curtailed demand will normally be restored in the reverse order in which it was curtailed i.e. last to be curtailed is first to be restored.

If First Gas believes any CCO issued restoration direction is inconsistent with the objectives set out in Schedule 2 to the Regulations, it will advise the CCO accordingly.

During demand restoration First Gas will monitor the transmission system stability and capacity. Should the system be adversely affected First Gas will contact the CCO immediately and suggest actions to rectify the situation. Suggestions may include requirements for modifications to existing restoration directives or delays in issuing further restoration directives.

CCO directions to restore demand are based on the transmission system pressure and Linepack having stabilised to a level which will allow restoration. However restoration of demands on the downstream connected distribution systems will need to be managed by the gas distributor to ensure that the process takes place in a safe and orderly manner.

5.6. Alternative demand restoration arrangements

Curtailed demand will normally be restored in the reverse order in which it was curtailed i.e. last to be curtailed is first to be restored.

Deleted: ¶
<#>high demand or system flow changes;¶
<#>operation of compressors;¶
<#>individual Station maintenance and instrumentation calibration;¶
<#>start-up of Large Consumers;¶
<#>monitoring system anomalies; and¶
<#>pipeline pigging.¶

Deleted: First Gas takes a number of steps to ensure that such transient system conditions are appropriately managed and do not result in either the unnecessary declaration of critical contingency events, or contribute to an undue delay in declaring a critical contingency when the circumstances warrant it. For example, First Gas,¶

Deleted: <#>periodically reviews the calculation algorithm within SCADA that monitors the pressure thresholds and ensures that the time sampling frequency is set appropriately in order to minimise the occurrence of "nuisance" alarms;¶
<#>has developed a procedure for Gas Control Operators to follow when critical contingency thresholds alarm in SCADA for short durations; and¶
<#>maintains close communications with the CCO during potential critical contingency circumstances to ensure that all decisions are fully informed and based on the best available information.¶

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However, in certain circumstances First Gas might consider it desirable for restoration of supply to occur in a different order to the normal restoration order set out in the Regulations.

If First Gas considers that curtailed demand should be restored in an alternate order it will inform the CCO accordingly.

Following consultation between First Gas and the CCO, the CCO will issue demand restoration directives to First Gas. First Gas will issue directions based on the CCO directive to the parties listed in Appendix 4, in accordance with the process described in section 3.3.

Some circumstances where alternative demand restoration arrangements may meet the objectives in Schedule 2 are set out in Appendix 11.

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6. Critical Contingency Imbalance

6.1. Critical Contingency imbalance process

First Gas' CCMP is required to include a process, consistent with regulations 73 to 82, outlining how contingency imbalances will be determined for each affected party over the period of a critical contingency. This is to include:

- what information is to be used by First Gas to determine contingency imbalances;
- how First Gas is to allocate contingency imbalances to affected parties; and
- processes outlining how the information concerning those allocated contingency imbalances is to be provided to the GIC for the invoicing of those allocated contingency imbalances.

To ensure correspondence with the GTAC, contingency imbalances in this document are considered to be equivalent to Mismatch as defined in the GTAC. This information is set out in Appendix 8 to this CCMP.

6.2. Contingency imbalance period

The Regulations specify that contingency imbalances should be determined based on either a daily (whole-day) basis or using a sub-daily period[16]. First Gas currently uses a whole-day imbalance calculation period to calculate contingency imbalances.

The Regulations define a "whole day" as commencing at 0000 hours on the day on which the critical contingency was declared[17]. The day will conclude at 2400 hours on the day in which the critical contingency was terminated[18] This is the same as a "Day" as defined in the GTAC.

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Deleted: <#>Contingency imbalance calculation methodology¶
As a result of there currently being two distinct transmission system codes, two contingency imbalance calculation methodologies are required. First Gas' contingency imbalance calculation methodologies for both:¶
<#>the Maui Pipeline, and¶
<#>the Non-Maui part of the transmission system, are set out in Appendix 8 to this CCMP.¶

[16] Regulation 75 (a) and (b)
[17] Regulation 75 (b) (ii) (A).
[18] Regulation 75 (b) (ii) (B)

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7. CCMP Appendices

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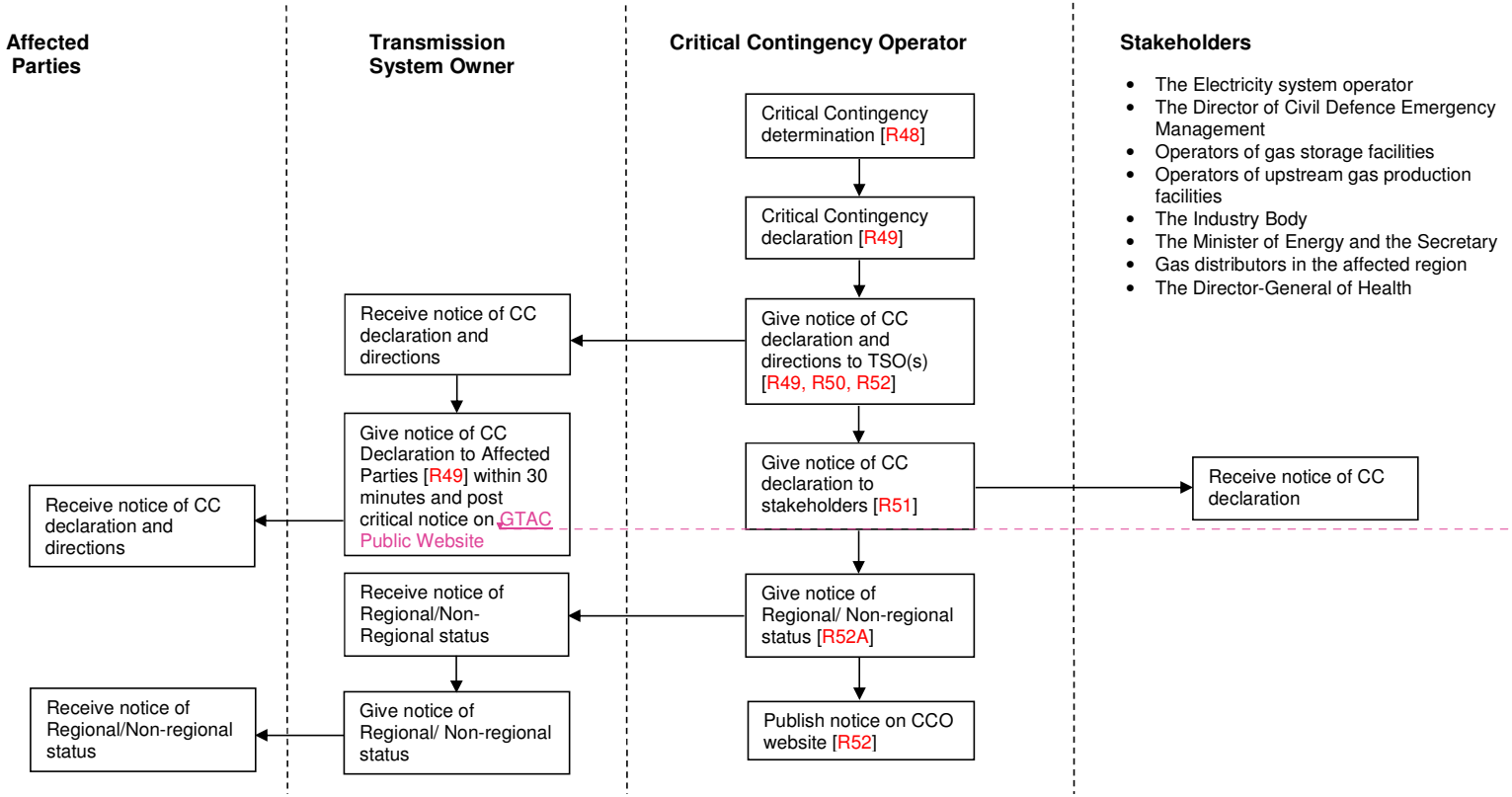
Appendix 1 - Process for declaration of Critical Contingency



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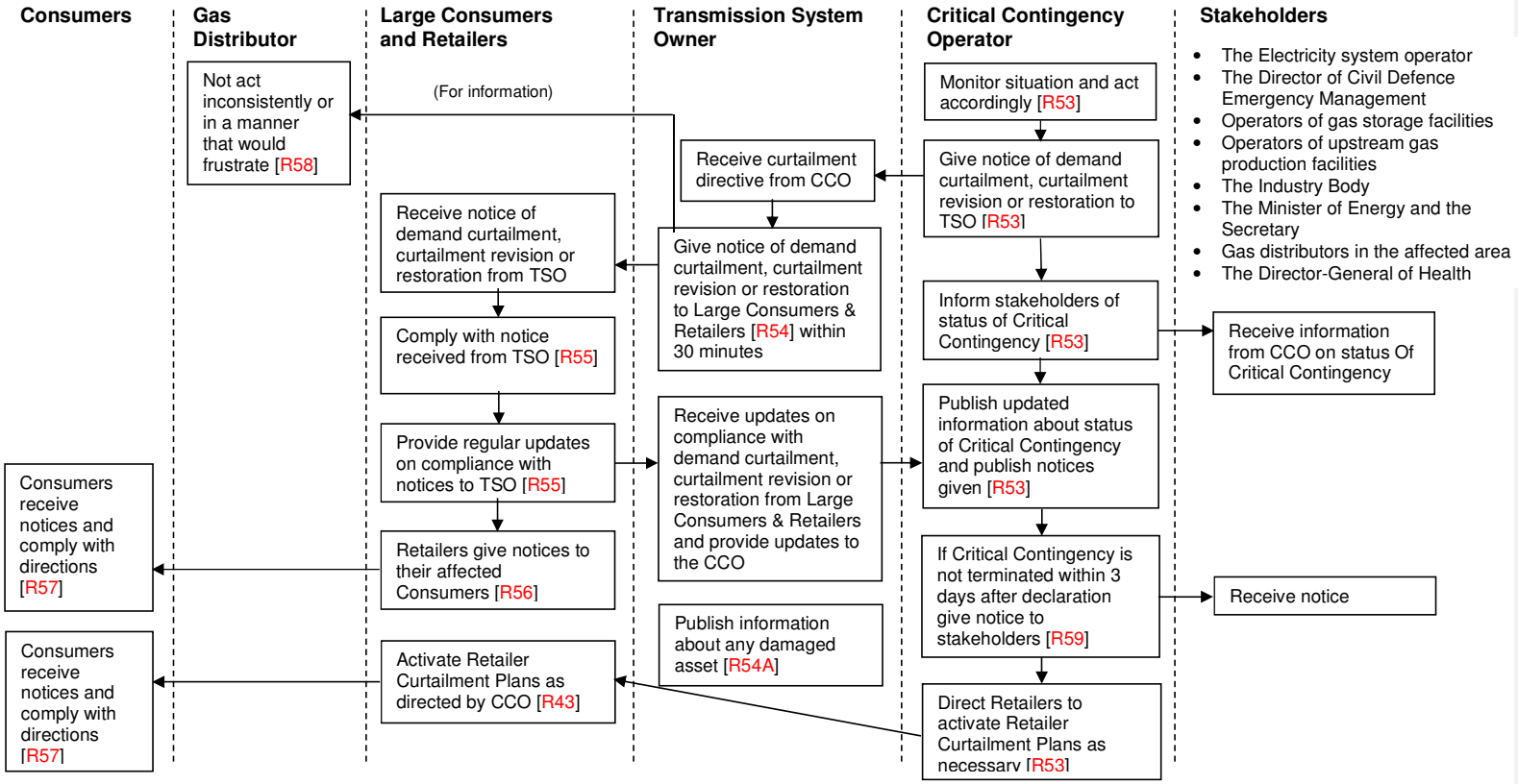
Appendix 2 - Process during a Critical Contingency



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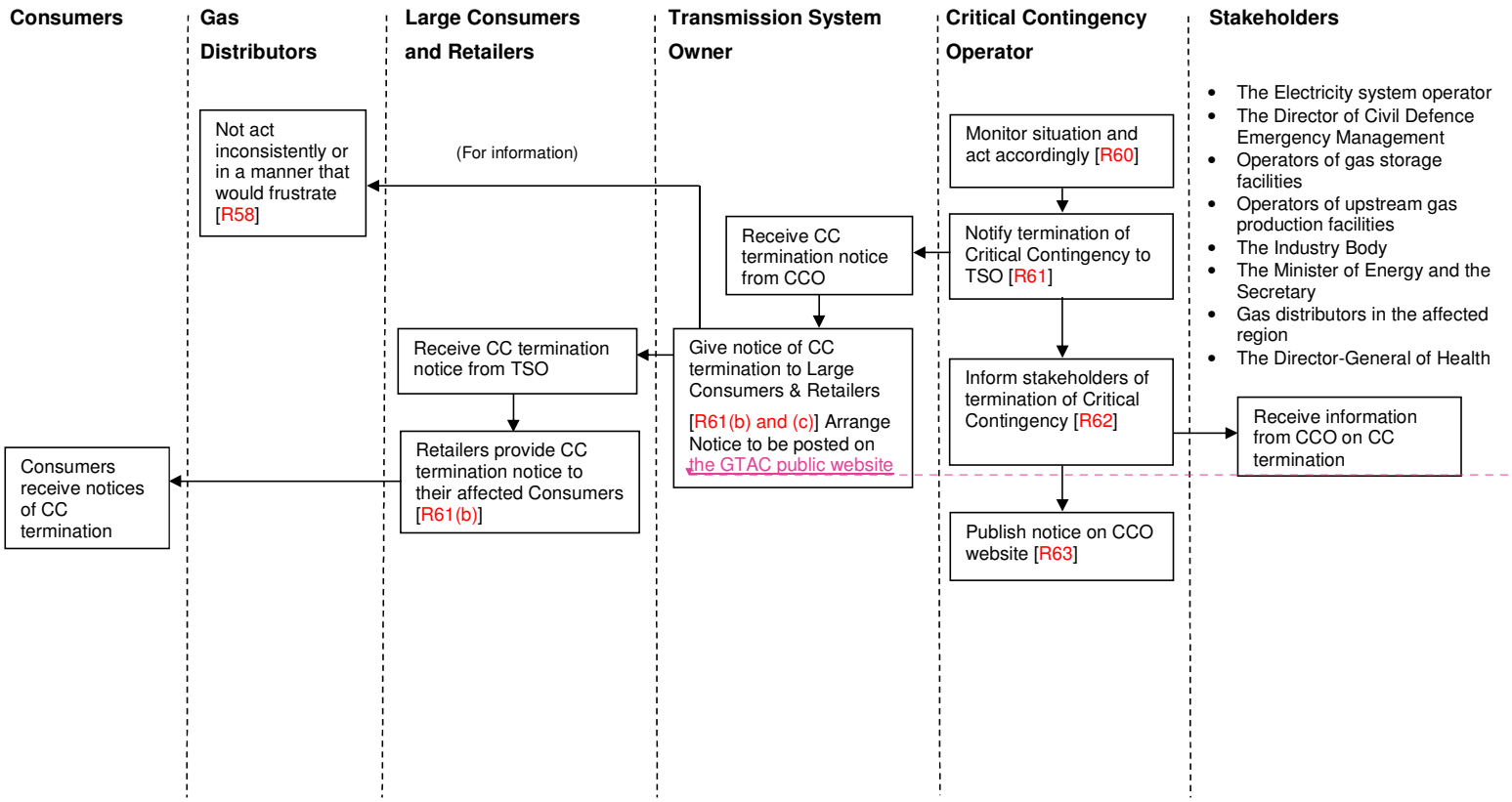
Appendix 3 - Process for termination of Critical Contingency



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Appendix 4 - Contact details

Contact details for affected parties are contained and updated within TACOS. It is the responsibility of the identified affected parties to maintain their contact details.

An updated TACOS contacts report is generated every day and these reports are stored outside of TACOS. In the event that TACOS is unavailable during a Critical Contingency the most recent contacts report will be used.

First Gas will regularly remind users to review their contact details and notify all stakeholders biannually of their details that are currently stored in TACOS including which users are included on the critical contingency distribution list that is maintained in TACOS.

The individual parties that fall within the ambit of the target audience categories set out in section 3.2 of the CCMP are listed below:

Category	Individual Organisations
Transmission System Owners	• First Gas is the sole TSO
Gas Distributors	• First Gas • Powerco • Vector • Nova Gas • Gasnet
Shippers	• Contact Energy Limited • Genesis Energy Limited • Greymouth Gas New Zealand Limited • Mighty River Power Limited • Nova Energy Limited • On Gas Limited • Vector Gas Trading Limited • Trustpower Limited • Methanex New Zealand Limited • Todd Energy Limited • OMV New Zealand Limited
Retailers	• Contact Energy • Genesis Energy • Trustpower Limited • Mercury Energy • Nova Gas • Bay of Plenty Energy • On Gas • Vector Gas Trading Limited • Greymouth Gas New Zealand Limited • Switch Utilities

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Deleted: check that contact details are completed in OATIS for each party prior to the go-live date and at six monthly intervals thereafter. Regular reminders will be issued to affected parties to check and amend their details as appropriate.…

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Wanganui Gas Limited (Trustpower)

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	• Pulse Energy
Gas Producers	• Vector Gas Trading Limited - Kapuni Gas Treatment Plant • Greymouth Gas New Zealand Limited- Turangi Production Station, Kowhai Mixing Station • Greymouth Petroleum Limited - Kaimiro Production Station, • Beach Energy Limited - Kupe Production Station • TAG Oil (NZ) Limited – TAG Receipt Point • Cheal Petroleum Limited – Cardiff Mixing Station • OMV Production Limited - Pohokura Production Station • OMV Taranaki Limited – Maui Production Station • Todd Pohokura Limited – Pohokura Production Station • Todd Energy Limited – McKee Production Station • Westside New Zealand Limited – Mokoia Mixing Station
Storage Facilities	• Gas Services New Zealand Limited - Ahuroa Storage Facility
Large Consumers	• Contact Energy Limited – Taranaki Combined Cycle (TCC) • Contact Energy – Stratford Peakers • Ballance Agri-Nutrients (Kapuni) Limited • Fonterra – Te Rapa Dairy Factory • Methanex New Zealand Limited – Motunui and Waitara Valley Methanol Plants and Faull Road Mixing Station • Genesis Energy Limited – Huntly Power Station • Refining NZ – Marsden 1

Deleted: Origin Energy Resources (Kupe) Limited

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Appendix 5 - Proforma notices

These proforma notices are in the form as set out in the CCO Communications Plan. They will be issued by First Gas in .pdf format.

A5.1: Potential Critical Contingency Notification

Date:	
Time:	
Notice Number:	
Notice Type:	**Potential Critical Contingency**
Notice Issued To:	**First Gas TSO**
Notice Copied To:	**Stakeholders listed in Information Guide**
Current Status:	The CCO has determined that a potential Critical Contingency situation exists.
CCO Instruction to TSO:	Issue notice of Potential Critical Contingency to Large Consumers and Retailers as soon as possible and ensure an appropriate critical notice is posted on the GTAC public website.
Event causing potential Critical Contingency:	
Summary of actions being taken to resolve event and estimated time to resolve:	
Areas of transmission system affected:	
Gas Gates Affected:	

The CCO will terminate the Potential Critical Contingency by either issuing a Notification of Termination of Potential Critical Contingency or declaring a Critical Contingency.

This notice is issued in accordance with the General Critical contingency Notice Conditions contained in the CCO Information Guide, CCO Communications Plan and First Gas CCMP.

The CCO will issue advice of this Notice of Potential Critical Contingency to the stakeholders listed in the CCO Information Guide and publish this notice on the CCO website at http://www.cco.org.nz

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A5.2: Potential Critical Contingency Termination

Date:	
Time:	
Notice Number:	
Notice Type:	**Termination of Potential Critical Contingency**
Notice Issued To:	**First Gas TSO**
Notice Copied To:	**Stakeholders listed in Information Guide**
Current Status:	The CCO has determined that the Potential Critical Contingency situation has been terminated.
CCO Instruction to TSO:	Issue notice of Termination of Potential Critical Contingency to Large Consumers and Retailers as soon as possible and ensure an appropriate notice is posted on the GTAC public website.

This notice is issued in accordance with the General Critical Contingency Notice Conditions contained in the CCO Information Guide, CCO Communications Plan and First Gas CCMP.

The CCO will issue advice of this Notice of Termination of Potential critical Contingency to the stakeholders listed in the CCO Information Guide and publish this notice on the CCO website at http://www.cco.org.nz

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A5.3: Critical Contingency Declaration Notice

Date:	
Time:	
Notice Number:	
Notice Type:	**Declaration of Critical Contingency**
Notice Issued To:	**First Gas TSO** **Stakeholders listed in Information Guide** **Interested Parties**
CCO Instruction to TSO:	A Critical contingency has been declared. Communications under the Communication Plan are to commence immediately. Issue notice of Declaration of Critical Contingency to Large consumers and Retailers within 30 minutes of receiving this notice. Ensure an appropriate notice is posted on the GTAC public website as soon as reasonably practicable. The CCO will determine demand curtailment requirements and advise accordingly.
Critical Contingency Declaration Time and Date:	
Event causing Critical Contingency:	
Summary of actions being taken to resolve event and estimated time to resolve:	
CCO determination on Regional Critical Contingency Status:	
Areas of transmission system affected:	

This notice is issued pursuant to **Regulation 49** of the Gas Governance (Critical Contingency Management) Regulations 2008 and amendments. All directions issued by the CCO pursuant to this declaration must be complied with.

This notice is issued in accordance with the General Critical Contingency Notice Conditions contained in the CCO Information Guide, CCO Communications Plan and First Gas CCMP.

The CCO will issue advice of this Notice of Declaration of Critical Contingency to the stakeholders listed in the CCO Information Guide and publish this notice on the CCO website at http://www.cco.org.nz

The CCO will advise persons who have notified their interest in receiving advice of critical contingency declarations in accordance with **Regulation 51(2)**.

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A5.4: Direction to Curtail Demand Notice

Date:	
Time:	
Notice Number:	
Notice Type:	**Direction to Curtail Demand**
Notice Issued To:	**First Gas TSO**
Notice Copied To:	Stakeholders listed in Information Guide
CCO Instruction to TSO:	Within 30 minutes of receiving this notice, issue notice of Direction to Curtail Demand to Large Consumers and Retailers in accordance with the Demand Curtailment Directions set out below. Ensure an appropriate notice is posted on the GTAC public website as soon as reasonably practicable.
Critical Contingency Declaration Time and Date:	
Event causing Critical Contingency:	
Summary of actions being taken to resolve event and estimated time to resolve:	
CCO determination on Regional Critical Contingency Status:	
Areas of transmission system affected:	
Demand Curtailment Compliance Updates Frequency:	

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Demand Curtailment Directions

Band	Approved Designation	Gate #	Gas Gate Name	Curtailment Direction
0				
1				
2				

Band	Approved Designation	Description	Curtailment Direction
3	None	Industrial and commercial consumers **>10 TJ/annum**	
	Critical Processing	Industrial and commercial consumers **>10 TJ/annum** with approved designations	
4	None	Medium-sized industrial and commercial consumers **>250 GJ/annum**	
	Critical Processing	Medium-sized industrial and commercial consumers **>250 GJ/annum** with approved designations	
5	Essential Services	Consumers **>2 TJ/annum** with approved designation	
6	Not Applicable	Small commercial customers **< 250 GJ/annum**	
7	Critical Care	Consumers of any size consumption with approved designation	

Gas Gates Affected by Curtailment Direction for Bands 3-7		
Gas Gate Name	**Gas Gate Code**	**Pipeline Sub-System**

This notice is issued pursuant to **Regulation 53(1)(d)(i)** of the Gas Governance (Critical Contingency Management) Regulations 2008 and amendments. All directions issued by the CCO must be complied with.

This notice is issued in accordance with the General Critical Contingency Notice Conditions contained in the CCO Information Guide, CCO Communications Plan and First Gas CCMP.

The CCO will issue advice of this Notice of Direction to Curtail Demand to the stakeholders listed in the CCO Information Guide and publish this notice on the CCO website at http://www.cco.org.nz

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A5.5: Direction to Revise Demand Curtailment Notice

Date:	
Time:	
Notice Number:	
Notice Type:	**Direction to Revise Demand Curtailment**
Notice Issued To:	**First Gas TSO**
Notice Copied To:	Stakeholders listed in Information Guide
CCO Instruction to TSO:	Within 30 minutes of receiving this notice, issue notice of Direction to Revise Demand Curtailment to Large Consumers and Retailers in accordance with the Demand Curtailment Directions set out below. Ensure an appropriate notice is posted on the GTAC public website as soon as reasonably practicable. For the avoidance of doubt this notice supersedes the original Notice of Direction to Curtail Demand and any previous notice(s) of Direction to Revise Demand Curtailment. It includes all demand previously directed for curtailment and all additional demands to be curtailed.
Critical Contingency Declaration Time and Date:	
Event causing Critical Contingency:	
Summary of actions being taken to resolve event and estimated time to resolve:	
CCO determination on Regional Critical Contingency Status:	
Areas of transmission system affected:	
Demand Curtailment Compliance Updates Frequency:	

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Demand Curtailment Directions

Band	Designation	Gate #	Gas Gate Name	Curtailment Direction
0				
1				
2				

Band	Approved Designation	Description	Curtailment Direction
3	None	Industrial and commercial consumers **>10 TJ/annum**	
	Critical Processing	Industrial and commercial consumers **>10 TJ/annum** with approved designations	
4	None	Medium-sized industrial and commercial consumers **>250 GJ/annum**	
	Critical Processing	Medium-sized industrial and commercial consumers **>250 GJ/annum** with approved designations	
5	Essential Services	Consumers **>2 TJ/annum** with approved designation	
6	Not Applicable	Small commercial customers **< 250 GJ/annum**	
7	Critical Care	Consumers of any size consumption with approved designation	

Gas Gates Affected by Curtailment Direction for Bands 3-7		
Gas Gate Name	**Gas Gate Code**	**Pipeline Sub-System**

This notice is issued under **Regulation 53(1)(d)(ii)** of the Gas Governance (Critical Contingency Management) Regulations 2008 and amendments. All directions issued by the CCO must be complied with.

This notice is issued in accordance with the General Critical Contingency Notice Conditions contained in the CCO Information Guide, CCO Communications Plan and First Gas CCMP.

The CCO will issue advice of this Notice of Direction to Revise Demand Curtailment to the stakeholders listed in the CCO Information Guide and publish this notice on the CCO website at http://www.cco.org.nz

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A5.6: Direction to Restore Curtailed Demand Notice

Date:	
Time:	
Notice Number:	
Notice Type:	Direction to Restore Curtailed Demand
Notice Issued To:	First Gas TSO
Notice Copied To:	Stakeholders listed in Information Guide
CCO Instruction to TSO:	Within 30 minutes of receiving this notice, issue notice of Direction to Restore Curtailed Demand to Large Consumers and Retailers in accordance with the Demand Restoration Directions set out below. Ensure an appropriate notice is posted on the GTAC public website as soon as reasonably practicable. For the avoidance of doubt this notice supersedes any previous notice(s) of Direction to Restore Demand. It includes all demand previously directed for restoration.
Critical Contingency Declaration Time and Date:	
Event causing Critical Contingency:	
Summary of actions taken to resolve event:	
CCO determination on Regional Critical Contingency Status:	
Areas of transmission system affected:	

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Demand Restoration Directions

Band	Approved Designation	Gate #	Gas Gate Name	Restoration Direction
0				
1				
2				

Band	Approved Designation	Description	Restoration Direction
3	None	Industrial and commercial consumers **>10 TJ/annum**	
	Critical Processing	Industrial and commercial consumers >**10 TJ/annum** with approved designations	
4	None	Medium-sized industrial and commercial consumers **>250 GJ/annum**	
	Critical Processing	Medium-sized industrial and commercial consumers **>250 GJ/annum** with approved designations	
5	Essential Services	Consumers **>2 TJ/annum** with approved designation	
6	Not Applicable	Small commercial customers **< 250 GJ/annum**	
7	Critical Care	Consumers of any size consumption with approved designation	

Gas Gates Affected by Restoration Direction for Bands 3-7		
Gas Gate Name	**Gas Gate Code**	**Pipeline Sub-System**

This notice is issued pursuant to **Regulation 53(1)(e)** of the Gas Governance (Critical Contingency Management) Regulations 2008 and amendments. All Directions issued by the CCO must be complied with.

This notice is issued in accordance with the General Critical Contingency Notice Conditions contained in the CCO Information Guide, CCO Communications Plan and First Gas CCMP.

The CCO will issue advice of this Notice to Restore Curtailed Demand to the stakeholders listed in the CCO Information Guide and publish this notice on the CCO website at http://www.cco.org.nz

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A5.7: Critical Contingency Termination Notice

Date:	
Time:	
Notice Number:	
Notice Type:	**Critical Contingency Termination**
Notice Issued To:	**First Gas TSO** **Stakeholders listed in Information Guide** **Interested Parties**
CCO Instruction to TSO	The Critical Contingency has been terminated. Issue notice of Termination of Critical Contingency to Large Consumers and Retailers within 30 minutes and ensure an appropriate notice is posted on the GTAC public website and direct retailers to advise their consumers that the critical contingency has been terminated.
Critical Contingency Termination Time and Date:	
Current Status:	
Event that caused Critical Contingency:	
Details of Event resolution:	
CCO determination on Regional Critical Contingency Status	
Areas of transmission system affected:	

This notice is issued pursuant to **Regulation 60** of the Gas Governance (Critical Contingency Management) Regulations 2008 and amendments. All directions issued by the CCO pursuant to this declaration must be complied with.

This notice is issued in accordance with the General Critical Contingency Notice Conditions contained in the CCO Information Guide, CCO Communications Plan and First Gas CCMP.

The CCO will issue advice of this Notice of Critical Contingency Termination to the stakeholders listed in the CCO Information Guide and publish this notice on the CCO website at http://www.cco.org.nz

The CCO will advise persons who have notified their interest in receiving advice of critical contingency terminations in accordance with **Regulation 62(2)**.

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A5.8: Direction to TSO to undertake Reconfiguration

Date:	
Time:	
Notice Number:	
Notice Type:	**TSO to undertake Reconfiguration**
Notice Issued To:	**First Gas TSO**
Notice Copied To:	**Stakeholders listed in Information Guide**
CCO Instruction to TSO:	After consultation with the TSO the CCO has determined that a reconfiguration would contribute to achieving the purpose of the Regulations. Undertake reconfiguration of the transmission system [insert details of reconfiguration to be undertaken]
Event causing potential Critical Contingency:	
Summary of actions being taken to resolve event and estimated time to resolve:	
Areas of transmission system affected:	
Gas Gates affected:	

This notice is issued pursuant to **Regulation 53(1)(dc)** of the Gas Governance (Critical contingency Management) Regulations 2008 and amendments. All directions issued by the CCO must be complied with.

This notice is issued in accordance with the General Critical Contingency Notice Conditions contained in the CCO Information Guide, CCO Communications Plan and First Gas CCMP.

The CCO will issue advice of this Notice to the stakeholders listed in the CCO Information Guide and publish this notice on the CCO website at ***http://www.cco.org.nz***

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Appendix 6 - Designated TSO representative details

Role	Individual	Email address	Cell phone number	Direct dial number
Responsible for giving (a) communications to the CCO under the Communications Plan (Regulation 25(f)(i)); and (b) directions in accordance with the CCMP (Regulation 25(f)(ii))	Gas Transmission Duty Manager (contactable 24/7 via Gas Operations Control Centre)	gas.control@firstgas.co.nz duty.officer@firstgas.co.nz	027 442 9051	06 755 0811 or 06 759 6499 or 0088 162 141 3928 (satellite phone)

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Appendix 7 - CCO Contact Details

Email Address	cco@cco.org.nz
Internet Site	http://www.cco.org.nz
24/7 Contact Phone Number	0800 226 267

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Appendix 8 - Imbalance Calculation Methodology

Introduction

First Gas' CCMP is required to include a process, consistent with regulations 73 to 82, outlining how Contingency imbalances will be determined for each affected party over the period of a critical contingency. This is to include:

- what information is to be used by First Gas to determine contingency imbalances;
- how First Gas is to allocate contingency imbalances to affected parties; and
- processes outlining how the information concerning those allocated contingency imbalances is to be provided to the GIC for the invoicing of those allocated contingency imbalances.

First Gas is required to determine the negative or positive Contingency Imbalances for each affected party over the period of the Critical Contingency (Regulations 74(1) and (2)).

Italicised terms in this section refer to definitions set out in the GTAC.

First Gas considers an "affected party" for Contingency Imbalance purposes to be:[19]

- *Shippers*;
- *OBA Parties*; and
- First Gas.

First Gas will determine the Contingency Imbalances based on GTAC Running Mismatch during the period of the Critical Contingency.

Contingency Imbalance Calculation Methodology

First Gas will take the following steps to determine the Contingency Imbalances for Shippers and OBA Parties ("affected parties") over the period of a critical contingency[20] as soon as possible after the critical contingency has been terminated so that business as usual under the GTAC can resume.

First Gas uses a whole-day calculation period to calculate Contingency Imbalances. First Gas will note the closing Running Mismatch position (as of 00:00 on the Day a Critical Contingency was declared) of each affected party. This is the position that the affected party will "resume from" once GTAC "business as usual" provisions recommence (as at 24:00 on the Day that a Critical Contingency is terminated). During this critical contingency period:

- GTAC ERM Fees will be set to $0/GJ as the Contingency Imbalance of the affected party will be subject to the Critical Contingency Price calculated by the Industry Expert in accordance with the Regulations; and
- First Gas will calculate Critical Imbalance quantities for all affected parties under the steps below as soon as possible after First Gas receives validated data for the relevant Day(s).[22] The Contingency Imbalances are based on GTAC Running Mismatch during the period of the Critical Contingency.

As the Critical Imbalance is subject to the pricing regime under the Regulations, First Gas needs to "remove" that figure from the Running Mismatch positions of affected parties, to ensure that it is also not subject to the GTAC incentives regime. First Gas will use system functionality within TACOS to carry out this step.

[19] First Gas considers that interconnected parties injecting Gas into the First Gas Transmission System pursuant to a Gas Transfer Agreement (GTA) are not intended to be treated as "interconnected parties" under the Regulations. The GIC has acknowledged that any under or over injection at interconnection points subject to GTAs is captured by Shipper Mismatch

[20] Price and imbalance provisions do not apply to regional critical contingencies (regulation 82)

[22] This is generally by 2pm on the next Business Day. If such validated data is not received by that time First Gas may determine quantities by using "best available information" as noted in steps 1 and 2 below.

Deleted: Purpose¶
Describe the business process that First Gas Limited (**First Gas**), as Transmission System Owner (**TSO**), will use to integrate the Contingency Imbalance regime prescribed by the Gas Governance (Critical Contingency Management) Regulations 2008 (**Regulations**) with the business-as-usual balancing regime operated by First Gas as TSO, pursuant to section 8 of the First Gas Transmission Code (GTAC).¶
This Appendix does not apply to Regional Critical Contingencies.¶
Background . ¶

Deleted: The Gas Industry Company (**GIC**) is required under the Regulations to determine and resolve Contingency Imbalances that arise out of a Critical Contingency (Regulations 73 to 82). The GIC must ensure that its functions under this part of the Regulations achieve the objectives of ensuring that fair, effective, and transparent arrangements are implemented to accurately determine Contingency Imbalances and allocate them to affected parties (Regulation 73). ¶
TSOs

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Deleted: Contingency Imbalances for OBA Parties will be calculated in accordance with the methodology set-out in the earlier section of Appendix 8 entitled "Contingency Imbalance Calculation Methodology – OBA Parties".

Deleted: **– *OBA Parties***

Deleted: Italicised terms in this section refer to definitions set out in the GTAC.¶

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Deleted: Transmission Pipeline affected party

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Deleted: In particular but without limitation, First Gas will calculate quantities for all OBA Party under steps 1 to 8 as soon as possible after First Gas receives validated data for the relevant Day/(s). This is generally by 12 noon on the next succeeding Business Day. If such validated data is not received by that time First Gas may determine quantities by using "best available information" as noted in steps 1 and 2 below. A reference to the "quantity calculation time" shall be read accordingly. First Gas uses a whole-day calculation

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At the conclusion of the critical contingency period all affected parties will be able to see their Running Mismatch position that will be subject to business as usual GTAC provisions. At this time, the ERM fee will be reinstated to the prevailing rate.

In calculating Contingency Imbalances First Gas will:

1. Retrieve the closing Running Mismatch[25] positions for affected parties as recorded in TACOS. If TACOS data is unavailable, then "best information available" will be used.
2. If necessary, proportionally adjust quantities in accordance with r75 (d).[27]
3. Calculate the volume of each contingency imbalance for each affected party in gigajoules in accordance with r74 (2) (a) & (b).
4. Calculate the aggregate positive contingency imbalance.
5. Calculate the aggregate negative contingency imbalance.
6. If the aggregate negative contingency imbalance exceeds the aggregate positive contingency imbalance, this difference will be treated as a positive contingency imbalance to be allocated to First Gas in accordance with r74 (2) (c) and r75 (f) (i).
7. If the aggregate negative contingency imbalance is less than the aggregate positive contingency imbalance, adjust the allocation for each affected party with a positive contingency imbalance in accordance with r75 (f) (ii)
8. Post affected parties calculated Contingency Imbalance on the GTAC public website.
9. When then the critical contingency imbalance quantities have been identified these must be removed from TACOS so that the affected parties' Running Mismatch position only reflects quantities subject to GTAC provisions and return the system to business as usual. First Gas will use TACOS functionality to remove the Contingency Imbalances for affected parties.
10. Receive the critical contingency price in dollars per gigajoule from the industry expert. The timing for First Gas to receive the critical contingency price from the industry expert is described in r72(4).
11. Calculate the value of each contingency imbalance in accordance with r75(h) using the specified formula.
12. Send the contingency imbalance amounts (volume and value) to the industry body in accordance with r77 (1) (a) & (b). This information will be sent in spreadsheet format via electronic transmission[29].
13. If r80(1) applies as regards First Gas, as TSO, then First Gas will advise the industry body as required by r80 of The Regulations.

On the Day after the Critical Contingency is terminated all balancing provisions will resume. This means that ERM Charges, Balancing Gas Charge and/ or Credit will resume but based on Running Mismatch positions that do not include Contingency Imbalances.

[25] This includes daily wash up allocations

[27] this step enables First Gas to proportionally adjust quantities on the basis of any evidence that interconnected parties, retailers, and shippers, or their consumers, did not comply with curtailment instructions.

[29] If a metering error of a kind for which a correction is required to be computed and made under the GTAC is discovered and corrected in the ordinary course before step 11 occurs, First Gas will recalculate any affected imbalances in accordance with r74 and r75.

Deleted: closing quantity of gas contractually agreed to inject or entitled to take by all interconnected parties[23] at their interconnected point(s). This would include *Scheduled Quantities* for an *OBA Party* accessed via TACOSRunning [24]

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Deleted: Retrieve the measured quantities for all interconnected parties at their interconnected point(s). This would include validated injection and off-take gas flow quantities accessed via TACOS, or "best information available" at all *OBA Points*. In the event that TACOS is not available then "best information available" may include raw gas flow data from *Receipt Points*. This information would be collected and converted to energy units manually.¶

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Deleted: Contingency Imbalance Calculation Methodology – Non-OBA Parties¶
¶
Note: While all reasonable endeavours have been used to develop the methodology set out in this Appendix 8 in accordance with Regulations 73 to 82, it has become apparent that this methodology is not consistent with the Regulations for all Critical Contingency events. For example, the methodology is not consistent with the Regulations where the Pipeline Linepack has increased during a Critical Contingency event and there is a negative Operational Imbalance at the First Gas Delivery Points. Accordingly, for each Critical Contingency Imbalance calculation, First Gas will consider whether the methodology in this Appendix 8 is consistent with the Regulations. If First Gas as a TSO (acting reasonably) determines that the methodology is not consistent with the Regulations for a Critical Contingency event, First Gas will consult with the industry body on an alternative method and after that consultation, First Gas may apply an alternative methodology to calculate Contingency Imbalances in a manner consistent with the Regulations.¶

Deleted: Definitions¶
In this Appendix:¶
~~BPP Account~~ ~~has the meaning given to it by the VTC;~~
Mismatch Account? Means the balancing account for shippers and First Gas for transactional purposes ¶
~~Allocation Day~~ ~~has the meaning given to it by the VTC;~~¶
~~BPP Trustee~~ ~~has the meaning given to it by the VTC;~~¶
CC Day means a Day on which a Critical Contingency is in effect;¶
CC Month means a month containing a CC Day;¶
CC Period (or CCP) means, in respect of each Critical Contingency, the period starting on CCP_{Start} and ending on CCP_{End};¶
$CCP_{Start-1}$ means, in respect of each Critical Contingency, the Day before the Day on which a Critical Contingency is declared;¶
CCP_{Start} means, in respect of each Critical Contingency, the Day on which a Critical Contingency is declared;¶
CCP_{End} means, in respect of each Critical Contingency, Day on which the Critical Contingency was terminated;¶ ... [1]

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Appendix 9 – Critical Contingency Threshold Rationale

CCM Regulations Requirements

Schedule 1 of the Regulations sets out:

(a) a list of pipeline names that correspond to key parts of the transmission system;

(b) a minimum operating pressure range for each of those pipelines;

(c) both a minimum and maximum time before minimum operating pressure is reached on each of those pipelines; and

(d) a point of measurement tied to a particular location or gas gate on each of those pipelines.

Section 25(1)(a) of the Regulations lists the requirements First Gas as TSO must take into account when setting the respective pressure thresholds to be recorded in its CCMP. Namely, each selected threshold at the required locations must:

(a) be within the limits set out in Schedule 1;

(b) be specified in terms of the projected number of hours remaining before the minimum operating pressure is reached; and

(c) specify the minimum operating pressure.

Section 25(1)(a) states that the "minimum operation pressure" means the minimum pressure that is required to maintain the supply of gas across the relevant part or parts of the transmission system and to avoid disruptions of distribution systems connected to the transmission system. It is also noted that the minimum operation pressure must be measured at the points of the transmission system specified in Schedule 1.

General Principles

It is considered that in addition to the requirements set out in the CCM Regulations, there are a number of general principles that apply to the setting of the critical contingency pressure thresholds. Outlined below is a list of some of those general principles that First Gas believes need to be taken into account when setting the pressure thresholds:

(a) The minimum operating pressures reflect the physical characteristics of the system and are unlikely to change significantly over time;

(b) Delivery Point station equipment is provided with sufficient inlet pressure to allow safe and satisfactory operation. Minimum pressures are to be selected to maintain satisfactory pressure differentials across the station equipment;

(c) Calculation of the trigger level in hours will depend on the nature of the load which would be curtailed if a critical contingency were triggered. For example, points supplying networks with large loads (that are relatively quick to curtail) will tend to require shorter lead times for curtailment than points supplying networks containing only smaller loads (which are more numerous and, therefore, take longer to curtail);

(d) Estimates of the total number of consumers in each curtailment band (0-7) and the sensitivity of the location on the transmission system;

(e) Thresholds need to be set at such a level that they are not going to be breached under normal or moderately abnormal operating conditions. Thresholds may be breached for short durations due to transient conditions. The details of such transient breaches are documented in section 5.2 of the CCMP;

(f) Non-linear line pack depletion and consequently pressure reduction occurring due to diurnal swing and curtailment actions taken in accordance with transmission codes;

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(g) Historical data on actual system demands at different times of year;

(h) The use of compressors to during the time preceding a Critical Contingency to maximise available line pack and pressure in the affected parts of the system.

Specific Thresholds

While there are a number of general principles that apply to the setting of any of the critical contingency pressure thresholds prescribed in Schedule 1, it is also important to assess each threshold on an individual basis due to the diversity of customers, load, geography and operating conditions across different parts of the transmission system. First Gas has developed an internal process pertaining to the rationale for individual pressure thresholds. First Gas will continue to revisit and update this process on a periodic basis, or if required due to material changes to the transmission system or operating parameters.

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Transient System Conditions

First Gas takes a number of steps to ensure that transient system conditions such as those set out in section 5.2 of the CCMP are appropriately managed. This ensures that such events do not result in either the unnecessary declaration of critical contingency events, or contribute to an undue delay in declaring a critical contingency when the circumstances warrant it. For example, First Gas:

(a) periodically reviews the calculation algorithm within SCADA that monitors the pressure thresholds and ensures that the time sampling frequency is set appropriately in order to minimise the occurrence of "nuisance" alarms;

(b) has developed a procedure for Gas Control Operators to follow when critical contingency thresholds alarm in SCADA for short durations; and

(c) maintains close communications with the CCO during potential critical contingency circumstances to ensure that all decisions are fully informed and based on the best available information.

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Appendix 10 – Statements by Asset Owners

The affected asset owner who caused or contributed to a critical contingency (which may not be First Gas) must after the curtailment of consumer installations in curtailment band 3, prepare a statement containing the information:

(a) a description of the damaged or failed asset and the cause of the damage or failure;

(b) what actions are being taken by the asset owner to effect repairs;

(c) the likely duration of each step of the repair process, including any testing and certification required before the asset can be restored to service;

(d) the asset owner's best estimate of the time at which the asset will be returned to service

(e) if the asset will be temporarily restored to a reduced level of service, information about the reduced capacity and likely duration of reduced capacity;

(f) an assessment of the likely accuracy of the times provided in paragraphs (c), (d) and (e) as well as a description of the identified risk factors and the likely effects that each would be expected to have on those times.

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Appendix 11 – Additional Demand Curtailment & Restoration Information

Curtailment Bands

Band	Consumption in Tera Joules (TJ)	Description
0	N/A	Gas off taken for injection into gas storage
1	More than 15TJ per day	Consumers (excluding essential service providers) supplied directly from the transmission system who have an alternative fuel capability
2	More than 15TJ per day	Consumers (excluding essential service providers) supplied directly from the transmission system who do not have an alternative fuel capability
3	More than 10TJ per annum and up to 15TJ per day	Large industrial or commercial consumer installation
4	More than 250 GJ per annum and up to 10 TJ per annum	Medium-sized industrial or commercial consumer installation
5	More than 2TJ per annum	Any consumer installation (whether or not in bands 0-4) to the extent that an essential services designation applies to the installation
6	250 GJ or less per annum	Small commercial consumer installation
7	Any	Any consumer installation (whether or not in bands 0-6) to the extent that a critical care designation applies to the installation

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Alternate Demand Restoration Arrangements

Some circumstances where alternative demand restoration arrangements may meet the objectives in Schedule 2 of the Regulations include:

(a) Partial restoration of consumers in curtailment bands 1, 2 and 3 ahead of, or at the same time as consumers in bands 4 - 7. This would allow large consumers to make preliminary preparations for a return to full production (for example performing a "cold start" on large plant). The individual circumstances and requirements of each large consumer would be considered by First Gas in conjunction with the CCO.

(b) Full or partial restoration to electricity generation facilities classified as large consumers ahead of curtailment bands 3 - 7. This may be required in circumstances where the Electricity System Operator requests support from gas fired generation facilities to prevent widespread electricity outages. The decision would be made in conjunction with the CCO and the Electricity System Operator.

(c) Consumers in bands 0, 1, 2 and 3 being restored ahead of consumers in bands 4 - 7. This could occur where technical and operational issues have resulted in a longer term outage on a discrete section of the pipeline located downstream from the main gas supply, leaving some parties unaffected by the outage. The decision would be made in conjunction with the CCO.

(d) In the event of non-specification gas having entered the system, demand to consumers in bands 0, 1, 2 and 3 may be restored ahead of bands 4 – 7 if the non-specification gas can be consumed safely and efficiently by these consumers. In these circumstances venting of large quantities of non-specification gas may be avoided.

The possible alternative arrangements above could better achieve the purpose of The Regulations by ensuring efficient use of gas, "minimising the net public cost", and "ensuring the effective operational management of a critical contingency". These are objectives specified in Schedule 2 of the Regulations.

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