



Standard Operating Procedure

GTAC Curtailments & Operational Flow Orders

September 2018

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First Gas Limited



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1. Overview

1.1. Introduction

This document sets out the current Standard Operating Procedures (SOP) describing how First Gas, as the Transmission System Owner will initiate curtailments as set out in the Gas Transmission Access Code (GTAC). This SOP covers how curtailments and Operational Flow Orders (OFOs) will be executed by First Gas.

1.2. Definitions

Definitions for words used in this SOP are as per the definitions given in GTAC.

1.3. Critical Contingency

First Gas is subject to the provisions of the Gas Governance (Critical Contingency Management) Regulations 2008 (“the Regulations”). Instructions from the Critical Contingency Operator (CCO) will take precedence over this SOP.

Please also note that, during a Critical Contingency (CC) First Gas may not act as contemplated or as provided for by this Standard Operating Procedure. This may be for a number of reasons, including circumstances affecting specific locations on the Transmission System or where multiple adverse events are occurring.

Section 45 of the Regulations defines the concept of a “regional” CC. Under the Regulations a CC is designated as being “regional” in the event of:

- a. a substantial reduction to, or total loss of, the supply of gas to a part of the Transmission System; and
- b. complete or partial isolation of that part of the Transmission System from any significant source of gas supply.

When the CCO declares a CC it will provide guidance in the declaration notice as to whether the CC constitutes a Regional Critical Contingency, or otherwise.

Whether a CC event is determined to be “regional” or not by the CCO will impact the operational response taken by First Gas pursuant to the GTAC and applicable SOPs.

1.4. End-user Shut Down Quantities

There may be end-users that require a quantity of gas to shut down their plant. Shippers serving these end-users must notify First Gas of the required shut down quantities in accordance with section 9.6 of the GTAC, and update these quantities if they change. First Gas will maintain a list of quantities and will request updates from Shippers each year by 30 June. First Gas will accommodate these notified shut down quantities when curtailing flows where practicable.

In the event of a Critical Contingency any shutdown quantities notified to First Gas in accordance with section 9.6 of the GTAC will not be used. The designations approved under the Gas Governance (Critical Contingency Management) Regulations 2008 will be recognised by the Critical Contingency Operator and First Gas in a CC.

Users of the system should be aware that a CC designation and a notification to First Gas under section 9.6 of the GTAC are separate notifications, and must be treated as such. Users may notify the same shut down quantities to the CCO and First Gas but these are separate notifications.

1.5. Actions Outside the SOP

There may be times where First Gas may need to act outside of the specific details of this SOP due to an unusual combination of circumstances on the Transmission System. First Gas will at all times, however, act in accordance with the general intent of this SOP.

During a CC First Gas will follow all legal instructions issued by the CCO, which may vary from this SOP.

1.6. Curtailment Types

This SOP covers two different types of curtailments that may occur, these are:

1. Capacity Check Initiated Curtailments which are outlined in Section 2 of this document.
2. Operations Initiated Curtailments and Operational Flow Orders which are outlined in Section 3 of this document.

1.7. Running Mismatch Data

Shippers and OBA Parties will have access in OATIS to view their estimated current Running Mismatch (RM) position and their estimated forecast end of Day RM positions. This OATIS data will be produced by considering hourly flow data (including expected Shipper allocations at given points, using the default rule if necessary as per section 6.11 of the GTAC), nominations and predicted flow through to the end of the Day.

First Gas will use estimated current RM positions and estimated forecast end of Day RM position data for Shippers and OBA Parties when carrying out actions in this SOP.

1.8. Changes to this SOP

First Gas may amend and update this operational SOP from time to time due to operational changes. First Gas will give 30 Business Days' notice of any SOP changes to all Parties. A draft will be published on OATIS. All Shippers and OBA Parties will be welcome to comment on this draft. First Gas will consider any comments prior to publishing a Final revised SOP at the end of the 30 day notice period.

2. Capacity Check Initiated Curtailments

2.1. Capacity Check Overview

At each nomination cycle First Gas will complete a capacity check in relation to the proposed delivery zone/delivery point NQs. This capacity check will be modelled and automatically processed by OATIS.

All receipt point nominations and delivery point nominations where there is an OBA will be approved, curtailed or rejected by the relevant Interconnected Party. For all non-OBA receipt points, the Interconnected Party may confirm the nomination. If the Interconnected Party does not approve, curtail or reject the nomination within the time allowed, it will be assumed to be approved. First Gas will perform its capacity check after this confirmation.

The result of each capacity check must be 'pass' before the nominated capacity can be approved by First Gas.

The capacity check ensures that nominated delivery capacity does not exceed the operational capacity and that First Gas can provide the requested capacity without breaching operational limits, such as the Target Taranaki Pressure (TTP). The capacity check will include analysis of Agreed Hourly Profiles submitted by shippers on behalf of users with "peaky loads".

If the capacity check is not able to produce a 'pass' result even by altering relevant operational conditions, it will automatically initiate a process to curtail nominated capacity in the appropriate zone to the point where the capacity check can achieve a 'pass' result.

2.2. Capacity Check Operational Adjustment / Curtailment Process

If the Capacity Check is not able to achieve a 'pass' result, the Capacity Check system will propose operational adjustments that achieve a 'pass' result. First Gas will determine if the operational adjustments are practicable. If operational adjustments proposed are not able to be implemented, a Curtailment process will be initiated automatically by OATIS. (Note: OATIS will only progressively curtail to the extent required in order to achieve a 'pass' result from the Capacity Check when it is re-run automatically in an iterative manner. This may result in a partial or full curtailment of one or more of the capacity types listed below.)

The system will curtail all delivery points / zones downstream of the point where the capacity check failed, as follows:

- Revised AHPs where the alternative would be to curtail previously approved nominations; then
- Interruptible Capacity (if any) on a pro-rata basis; then
- Supplementary Capacity (If allowed for under the agreement) on a pro-rata basis; then
- Daily Nominated Capacity without Priority Rights (if Priority Rights have been issued at the time) on a pro-rata basis; then
- Daily Nominated Capacity on a pro-rata basis.

The curtailment will be iterative until such point as a 'pass' result is achieved when the Capacity Check is re-run by OATIS. This order of curtailment is as agreed in section 10.3 (b) of the GTAC.

3. Operations Initiated Curtailments and Operational Flow Orders

Important Note: In the event of a CC, any actions First Gas intends to take under this SOP during a CC should first be discussed with the Critical Contingency Operator before any action is taken.

Section 9 of the GTAC describes the reasons why First Gas may operationally need to execute a curtailment. First Gas may curtail the injection of gas at a receipt point, the flow of gas through the Transmission System or the offtake of gas at a delivery point as it determines necessary.

First Gas will use the tools outlined in the Pipeline Balancing and Line Pack Management SOP to try to avoid curtailment, however there may be circumstances where curtailments are necessary.

If a curtailment is required, it will be executed by First Gas by issuing an Operational Flow Order (OFO). Generally, an OFO will be issued to Shippers and/or Interconnected Parties who are contributing to the cause of the problem. An OFO may also be issued without being associated with a curtailment and should be treated as an operational instruction that requires the party receiving the OFO to take appropriate action(s).

First Gas will identify contributors to the adverse situation by reviewing estimated current RMs and estimated forecast RMs and identifying the Parties who:

- are currently estimated to be exceeding their Running Mismatch Tolerance (RM Tolerance) in the same direction of the adverse situation: and/or
- are forecast to be in excess of their RM Tolerance at the end of the Day in the same direction of the adverse situation; and
- are operating in the receipt or delivery point / zone(s) impacted.

There are six general pipeline conditions that may necessitate the need for First Gas to execute curtailments or issue OFOs. These conditions and the steps First Gas may take to alleviate the adverse situation are described in the paragraphs below:

- Issue at an individual receipt point
- Issue at an individual delivery point
- Regional high pressure in the receipt zone due to over-injection by producers
- Shortage of gas in a delivery location or low line pack due to overtaking by users
- Regional high pressure in the receipt zone due to undertaking by users
- Shortage of gas in a delivery location or low line pack due to under-injection by producers

The high-level decision-making framework in each situation is outlined in the flow chart in Figure 1 below.

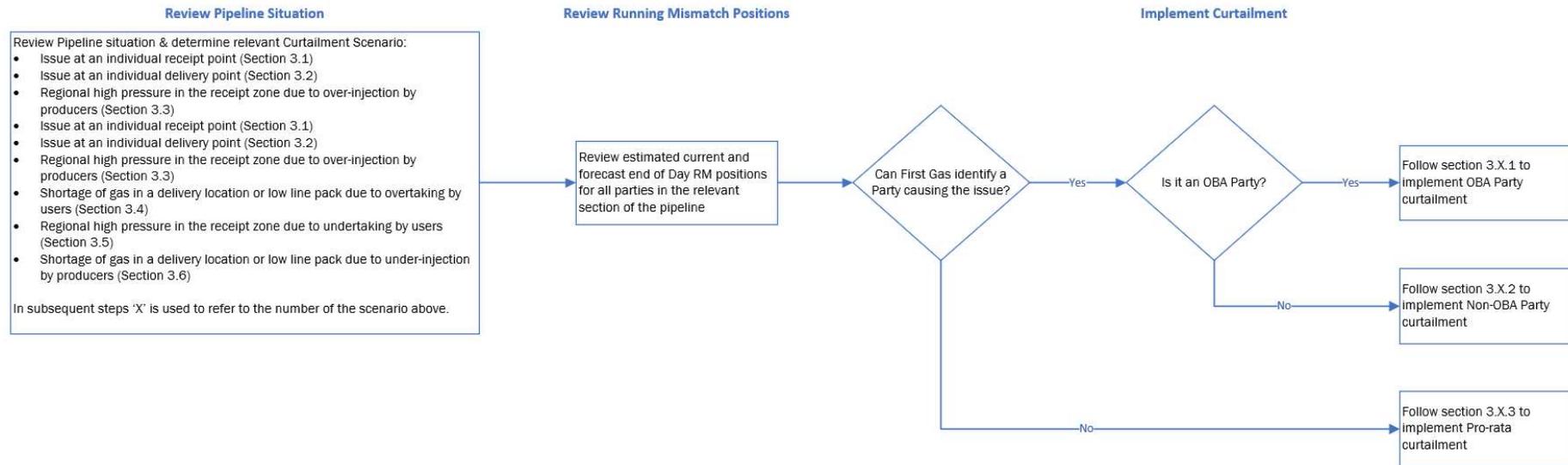


Figure 1: Curtailment decision-making process.

3.1. Issue at an individual Receipt Point

Important Note: In the event of a CC, any actions First Gas intends to take under this SOP during a CC should first be discussed with the Critical Contingency Operator before any action is taken.

This situation is likely to occur due to the following situations:

- a. Non-specification gas being injected;
- b. Equipment failure;
- c. Other emergency or a safety issue

In this case First Gas would curtail flow at the receipt point. If there is an issue of specification or emergency First Gas would do so without further consideration in order to protect lives and other users of the pipeline.

The steps First Gas will take when executing a curtailment in this situation are:

1. Determine the injection quantity reduction required.
2. Issue an OFO to the Interconnected Party of the need to reduce their injection of gas in accordance with the curtailment.
3. Reduce Shipper(s) nominated quantities at the receipt point in OATIS as required.
4. Issue an OFO to Shippers using that receipt point to request that they adjust their mismatch position to account for the reduction in receipts.

3.2. Issue at an individual Delivery Point

Important Note: In the event of a CC, any actions First Gas intends to take under this SOP during a CC should first be discussed with the Critical Contingency Operator before any action is taken.

This type of adverse situation is likely to occur due to the following situations:

- a. Non-specification gas is likely to be delivered to a delivery point
- b. Equipment failure
- c. Other emergency or a safety issue

In this case First Gas would curtail flow at the delivery point. If there is an issue of specification or emergency First Gas would do so without further consideration in order to protect lives and other users of the pipeline.

The steps First Gas will take when executing a curtailment in this situation are:

1. Determine the offtake quantity reduction required.
2. Issue an OFO to the Interconnected Party and/or Shippers of the need to reduce their flow in accordance with the OFO and adjust their receipt nominations to balance their mismatch as required.
3. Adjust delivery nominations at the delivery point accordingly.

3.3. Upper Line Pack Limit breach or regional high pressure in the receipt zone, due to over-injection by producers

Important Note: In the event of a CC, any actions First Gas intends to take under this SOP during a CC should first be discussed with the Critical Contingency Operator before any action is taken.

This situation would occur where the Upper Line Pack Limit and/or Target Taranaki Pressure is breached (or has the potential to be breached) and all flows in the delivery zone(s) are generally as per the nominations. It may also occur in situations where a Party is storing gas in the pipeline without an Approved Hourly Profile (AHP).

First Gas will first attempt to find a causer of the high pressure situation in order to target the curtailment. If no Party can be identified as causing the issue, a pro-rata curtailment will commence.

3.3.1. OBA Party Identified for Curtailment

If First Gas identifies OBA Party receipt points which have exceeded estimated current Excess Running Mismatch (ERM) their allowable RM Tolerance in a positive direction and, for each of these OBA Parties, First Gas will:

1. Issue an OFO to the OBA Party which instructs the Party to reduce their ERM, over the timeframe specified in the curtailment, in order to bring the Party back within their RM Tolerance.
2. The OBA Party that the curtailment is issued to will take appropriate action(s) in order to reduce their ERM to within their allowed RM Tolerance within the timeframe specified in the curtailment.

3.3.2. Non-OBA Party Identified for Curtailment

If the over-injecting Party is not an OBA Party, First Gas will curtail that receipt point by:

1. Determining the curtailment quantity on a pro-rata basis for all Shippers receiving gas from that receipt point. The size of the curtailment will be determined by First Gas by considering the quantity that has been over-injected and the quantity required to alleviate the current high line pack / high pressure condition.
2. Issue an OFO to Shippers at that receipt point requesting them to adjust their nominations to address the over-injection and ensure their RM is within Tolerance.
3. The Shipper(s) receiving the OFO will respond in the next ID cycle to direct the curtailment to the right receipt point.

3.3.3. Pro-rata Curtailment

If there is no obvious Party causing the high pressure situation, then First Gas will curtail all Interconnected Parties injecting gas in the receipt zone on a pro-rata basis in order to alleviate the problem.

The steps First Gas will take when executing a curtailment in this situation are:

1. Determine the quantity of gas which needs to be reduced from the pipeline in order to alleviate the high line pack / high pressure and the timeframe within which this reduction needs to occur
2. Issue an OFO to notify the Interconnect Parties injecting gas in the receipt zone of the need to reduce their receipt quantities in accordance with the OFO.
3. The Interconnected Parties will notify all Shippers receiving gas from the affected receipt points and Shippers will adjust their receipt and delivery nominations in OATIS as required.

3.4. Regional shortage of gas in a delivery location due to overtaking by users or Low Line Pack

Important Note: In the event of a CC, any actions First Gas intends to take under this SOP during a CC should first be discussed with the Critical Contingency Operator before any action is taken.

This situation is likely to occur when a Low Line Pack Limit is breached somewhere on the Transmission System (or has the potential to be breached) and all flows in the receipt zone are as per the scheduled quantities. It is likely to occur when there are Party(s) who are overtaking gas in relation the quantities nominated. It may also occur in situations where a Party is borrowing gas from the pipeline without an Approved Hourly Profile (AHP).

It should be noted that with this type of situation there is the potential for a Critical Contingency to occur. First Gas will act as much as reasonably practicable in order to avoid a CC.

First Gas will first attempt to find a causer of the shortage of gas in order to target the curtailment. If no Party can be identified as causing the issue, a pro-rata curtailment will commence.

3.4.1. OBA Party Identified for Curtailment

If First Gas identifies OBA Party delivery points which have exceeded their allowable RM Tolerance in a negative direction and, for each of these OBA Parties, First Gas will:

1. Issue an OFO to the OBA Party which instructs the OBA Party to reduce their ERM, over the timeframe specified in the OFO, in order to bring the Party back within their RM Tolerance.
2. The OBA Party the OFO is issued to will take appropriate action(s) in order to reduce their ERM to within their allowed RM Tolerance within the timeframe specified in the OFO.

3.4.2. Non-OBA Party Identified for Curtailment

If the Party is not an OBA Party, First Gas will curtail that delivery zone / point by:

1. Determining the curtailment quantity on a pro-rata basis for all Shippers using that delivery zone / point. The size of the curtailment will be determined by First Gas by considering the quantity that has been overtaken and the quantity required to alleviate the current Low Line Pack situation.
2. Issue an OFO to Shippers requesting that they adjust their nominations to reduce flow and bring their RM within tolerance.
3. The Shipper(s) will respond in the next ID cycle to address their RM position.

3.4.3. Pro-rata Curtailment

If there is no obvious Party or delivery point / zone causing the low line pack situation, then First Gas will curtail all OBA Parties and Shippers delivering gas in to the delivery zone(s) downstream of the adverse situation on a pro-rata basis in order to alleviate the problem.

The steps First Gas will take when executing a curtailment in this situation are:

1. Determine the offtake quantity of gas which needs to be reduced in order to alleviate the low line pack and the timeframe within which this offtake reduction needs to occur.
2. Issue an OFO to affected OBA Parties and Shippers of the need to reduce their offtake in accordance with the OFO:
 - a. The OBA Parties receiving the OFO will take appropriate action(s) in order to reduce their offtake quantities in accordance with the OFO and will notify the Shippers delivering gas to the affected delivery point. Affected Shippers will adjust their receipt and delivery nominations in OATIS as required.
 - b. The affected Shippers receiving the OFO will take appropriate action(s) in order to reduce their offtake quantities in accordance with the OFO and will adjust their receipt and delivery nominations in OATIS as required and correct their RM positions.

3.5. Regional high pressure in the receipt zone due to undertaking by users

Important Note: In the event of a CC, any actions First Gas intends to take under this SOP during a CC should first be discussed with the Critical Contingency Operator before any action is taken.

This situation would occur where the Upper Line Pack Limit and/or Target Taranaki Pressure is breached (or has the potential to be breached) and flows in the delivery zone(s) do not match nominations. It may also occur in situations where a Party is under-taking gas from the pipeline without an Approved Hourly Profile (AHP).

First Gas will first attempt to find a causer of the high pressure situation in order to target the curtailment. If no Party can be identified as causing the issue, a pro-rata curtailment will commence.

3.5.1. OBA Party Identified for Curtailment

If First Gas identifies an OBA Party delivery point(s) who have exceeded their allowable RM Tolerance in a positive direction and, for each OBA Party, First Gas will:

1. Issue an OFO which instructs the Party to reduce their ERM, over the timeframe specified in the OFO, in order to bring the Party back within their RM Tolerance.
2. The OBA Party the OFO is issued to will take appropriate action(s) in order to reduce their ERM to within their allowed RM Tolerance within the timeframe specific in the OFO. Actions are likely to include:
 - a. Increasing of offtake and/or;
 - b. Requesting Shippers delivering gas to the OBA Party to reduce their receipt quantity nominations in accordance with the timeframe specified in the OFO.
3. If a Shipper is requested to reduce their receipt quantity nominations by the OBA Party, as per step 2b above, First Gas may elect to issue an OFO to the Shipper in order to effect the required gas injection reduction.

3.5.2. Non-OBA Party Identified for Curtailment

Or, First Gas will identify Shippers who have exceeded their allowable RM Tolerance in a positive direction and, for each Shipper, First Gas will:

1. Issue an OFO which instructs the Shipper to reduce their ERM, over the timeframe specified in the OFO, in order to bring the Shipper back within their RM Tolerance.
2. The Shipper the OFO is issued to will take appropriate action(s) in order to reduce their ERM to within their allowed RM Tolerance within the timeframe specified in the OFO, this will generally be by reducing their nominated receipt quantities.

3.5.3. Pro-rata Curtailment

If there is no obvious Party causing the high pressure situation, then First Gas will curtail all Interconnected Parties injecting gas in the receipt zone on a pro-rata basis in order to alleviate the problem.

The steps First Gas will take when executing a curtailment in this situation are:

1. Determine the quantity of gas which needs to be reduced from the pipeline in order to alleviate the high line pack / high pressure and the timeframe within which this reduction needs to occur.
2. Issue an OFO to Interconnect Parties injecting gas in the receipt zone of the need to reduce their injection quantities in accordance with the OFO.
3. The affected Parties will notify all Shippers receiving gas from the affected receipt points and Shippers will adjust their receipt and delivery nominations in OATIS as required.

3.6. Shortage of gas in a delivery location due to under-injection by producers, or Low Line Pack, or Low Pressure

Important Note: In the event of a CC, any actions First Gas intends to take under this SOP during a CC should first be discussed with the Critical Contingency Operator before any action is taken.

This situation would occur where the Low Line Pack Limit and/or Target Taranaki Pressure is breached (or has the potential to be breached) and flows in the delivery zone(s) do not match nominations. It may also occur in situations where a Party is under-taking gas from the pipeline without an Approved Hourly Profile (AHP).

First Gas will first attempt to find a causer of the Low Line Pack/low pressure situation in order to target the curtailment. If no Party can be identified as causing the issue, a pro-rata curtailment will commence.

3.6.1. OBA Party Identified for Curtailment

If First Gas identifies an OBA Party receipt point(s) who have exceeded their allowable Mismatch Tolerance in a negative direction and, for each OBA Party, First Gas will:

1. Issue an OFO which instructs the Party to reduce their ERM, over the timeframe specified in the OFO, in order to bring the Party back within their RM Tolerance.
2. The OBA Party the OFO is issued to will take appropriate action(s) in order to reduce their ERM to within their allowed RM Tolerance within the timeframe specified in the curtailment. Actions are likely to include:
 - a. Increasing of injection and/or;
 - b. Requesting Shippers receiving gas from the OBA Party to reduce their receipt quantity nominations in accordance with the timeframe specified in the OFO and/or;
 - c. Request or provision of an Extra ID cycle as per GTAC section 4.18 and 4.19 of the GTAC.
3. If a Shipper is requested to reduce their receipt quantity nominations by an OBA Party they are receiving gas from, as per step 2b above, the Shipper will:
 - a. Reduce their receipt quantity nominations within the timeframe specified in the OFO issued to the OBA Party.
 - b. Amend their delivery quantities accordingly, to effect the gas offtake reduction proportionate with their receipt quantity nomination reduction.

3.6.2. Non-OBA Party Identified for Curtailment

If First Gas will identifies Shippers who have exceeded their allowable RM Tolerance in a negative direction and, for each Shipper, First Gas will:

1. Issue an OFO which instructs the Shipper to reduce their ERM, over the timeframe specified in the OFO, in order to bring the Shipper back within their RM Tolerance.
2. The Shipper the OFO is issued to will take appropriate action(s) in order to reduce their ERM to within their allowed RM Tolerance within the timeframe specified in the OFO, this will generally be by adjusting their nominated receipt quantities.

3.6.3. Pro-rata Curtailment

If there is no obvious Interconnected Party in the receipt zone causing the low line pack situation, then First Gas will curtail all Shippers delivering gas to all delivery zones / points on a pro-rata basis in order to alleviate the problem.

The steps First Gas will take when executing a curtailment in this situation are:

1. Determine the quantity of gas which needs to be increased in the pipeline in order to alleviate the low line pack / low pressure and the timeframe within which this increase needs to occur.
2. Issue an OFO to notify the Shippers delivering gas in all delivery points / zones of the need to reduce their delivery quantities in accordance with the OFO.
3. The affected Shippers will:

- a. Reduce their receipt quantity nominations within the timeframe specific in the OFO.
- b. Amend their delivery quantities accordingly, to effect an actual gas offtake reduction proportionate with their receipt quantity nomination reduction.

4. Extra Intra-Day Cycles

To assist with ensuring nomination quantities can be updated in OATIS, Extra ID cycles can be requested by Shippers or Interconnected Parties, or provided by First Gas without a request, as outlined in sections 4.18 - 4.21 of the GTAC.

Appendix 1: Notification Templates

This section is yet to be developed.