

PROCEDURE

OPERATIONAL FLOW ORDER HANDLING

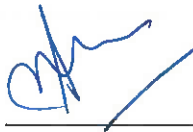
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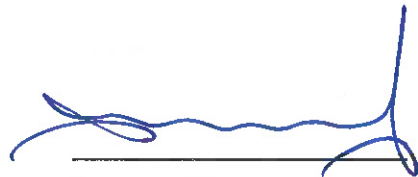
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I. PURPOSE

To provide Operational Flow Orders (OFO) handling guideline to Gas Malaysia Distribution Sdn. Bhd. (GMD). OFO means an order to alter gas receipt and delivery, if in the GMD's opinion, such gas may cause imbalance or adverse operating conditions of the distribution pipeline. This procedure has been prepared pursuant to paragraph 6.5.11 of the Third Party Access Code for Malaysian Distribution Pipelines (TPA Code).

II. SCOPE

1. This OFO Handling Procedure governs GMD's operational procedures with respect to an OFO action. This document sets out:
 - 1.1 communication and notification protocols during an OFO;
 - 1.2 mechanisms established to pre-empt and minimise occurrences of an OFO;
 - 1.3 capacity curtailment principles and methodologies during an OFO;
 - 1.4 the system restoration cost calculation methodology after an OFO; and
 - 1.5 the system restoration cost allocation mechanism (TPA Code, 6.5.11).

III. REFERENCE DOCUMENTS

1. The details of the procedure described in this document are constrained by the regulatory obligations on GMD set out in the regulatory documents. In addition, GMD is required to make operational details relevant to external parties available to them, for example through the Access Arrangement for Natural Gas Distribution System (GMD AA) published on GMD's website. The procedure will reflect these regulatory documents, they are:
 - 1.1 Gas Supply Act 1993 (Act 501)
 - 1.2 Gas Supply (Amendment) Act 2016 (Act 1515)
 - 1.3 Third Party Access Code for Malaysian Distribution Pipelines
 - 1.4 Access Arrangement for Natural Gas Distribution System

IV. MINIMISE OFO OCCURENCES

1. GMD has established the following to minimise the occurrences of an OFO.
 - 1.1 Pipeline inspection;
 - 1.2 Supervision of third party work in the vicinity of distribution pipelines;
 - 1.3 Comprehensive preventive maintenance programs;
 - 1.4 Fencing gas facilities;
 - 1.5 Installation of sign boards, markers and warning signs;
 - 1.6 Online Distribution Network monitoring through Supervisory Control And Data Acquisition (SCADA);
 - 1.7 Joint drill with authorities; and
 - 1.8 Awareness program with authorities and third party.

V. APPROACH DURING AN OFO**1. Code Provisions**

1.1 A distribution licensee shall monitor the imbalances which may adversely impact on the stability of the distribution pipeline. In adverse circumstances, the distribution licensee has the right, in its discretion, to control the shipping licensees' gas flow in order to safeguard the reliability, safety and integrity of the distribution pipeline by imposing an OFO (which may include suspension of Nominations from shipping licensees) which shipping licensees are required to follow. (TPA Code, 6.5.1)

1.2 A distribution licensee will issue an OFO, when:

- (a) the safe and reliable conveyance of gas in the distribution pipeline is at risk;
- (b) the maintenance of safe and reliable pressures in the distribution pipeline is at risk;
or
- (c) there exist such other circumstances affecting the distribution pipeline that would or are reasonably likely to constitute a gas emergency. (TPA Code, 6.5.2)

2. Procedure Trigger

GMD will initiate an OFO when acting in its role as a Reasonable and Prudent Operator it considers that any of the circumstances listed as per paragraph V.1.2 have been satisfied.

3. Description

3.1 GMD will take all reasonable steps to avoid curtailment that do not jeopardise the safety of the Distribution Network.

3.2 If required, the following order of curtailment will be followed:

- (a) if such curtailment was caused by a particular Shipping Licensee(s), the delivery of Gas by such Shipping Licensee(s) will be reduced to the extent required;
- (b) for Reserved Capacity using Interruptible Capacity, the delivery of Gas will be reduced to the extent required;
- (c) for Reserved Capacity at Exit Points in respect of which the Connected Parties are identified as Non-Critical Connected Parties, and for this purpose, GMD shall curtail in the following order:
 - i. Non-Critical Connected Parties from a lateral line;
 - ii. Non-Critical Connected Parties from a feeder line; and
 - iii. Non-Critical Connected Parties from a distribution line,

provided always that GMD shall use all reasonable endeavours to curtail Shippers on a pro-rata basis to their Reserved Capacity in such Distribution Network and, for such purpose, each relevant Shipper shall identify to GMD the order to curtail its Non-Critical Connected Parties within each category identified above a curtailment arrangement which such Shipper shall maintain with GMD (and may update from time to time); and

- (d) for Reserved Capacity at Exit Points in respect of which GMD at its sole discretion, determines the Connected Parties are Critical Connected Parties, and for this purpose, GMD shall use all reasonable endeavours to curtail Shippers on a pro-rata basis to their Reserved Capacity in such Distribution Network and, for such purpose, each Shipper's curtailment arrangement with GMD shall be entitled to determine which Shipper and in respect of which Exit Point to be curtailed.

3.3 GMD will established list of affected Connected Parties with its curtailed volume constituting sufficient load to mitigate the shortfall in gas.

4 Timeline

As soon as necessary to preserve the safety and reliability of the Distribution Network. Curtailment may occur under the following circumstances:

- 4.1 Planned curtailment applies to times where shortfall are predicted by GMD or where curtailment is notified by GMD in advance of the gas day.
- 4.2 Emergency curtailment applies to times where Emergencies occur in the Distribution Network as identified by the GMD or where curtailment is notified to GMD within the Gas Day.

VI. COMMUNICATION AND NOTIFICATION PROTOCOLS

1. Code Provisions

- 1.1 When the distribution licensee wishes to raise an OFO, it must raise an OFO Notice. The OFO Notice, which shall specify:
 - (a) the time at which the OFO commences;
 - (b) the estimated number of Days affected by the OFO; and
 - (c) reasonable details of the event or of the existence of circumstances which have resulted in the OFO (TPA Code, 6.5.3).
- 1.2 The distribution licensee will notify the Commission of the OFO Notice (TPA Code, 6.5.4).
- 1.3 During the entire period of an OFO, the distribution licensee will keep the parties reasonably informed about the progress of elimination of the adverse (TPA Code, 6.5.5).

2. Procedure Trigger

- 2.1 The communication and notification protocols begins when GMD wishes to raise an OFO.
- 2.2 GMD may raise an OFO:
 - (a) if an event of Force Majeure occurs and, as a result of this event, the Reserved Firm Capacity is constrained so that GMD cannot transport the quantities of gas scheduled;

- (b) If GMD considers, in its discretion, it is necessary to curtail deliveries of gas to Shippers in order to safeguard the reliability, safety and integrity of the Distribution Network, irrespective of the cause giving rise to the need to curtail;
- (c) If GMD considers, in its discretion, that it is necessary to curtail deliveries of gas to Shippers by reason of an Emergency, irrespective of the cause giving rise to the need to curtail.

2.3 In relation to paragraph VI.2.2:

- (a) Force Majeure has the same definition as in GMD AA.; and
- (b) Emergency has the same definition as in GMD AA, and is a situation where GMD determines that the safety of human lives and/or the destruction of public or private property is imminently threatened. The existence of an Emergency will be determined by GMD, in its discretion, irrespective of the cause of Emergency or GMD or any other person may have caused, or contributed to the said.

3. Description

3.1 Issue OFO Notice

- (a) GMD will, as soon as practicable after raise an OFO, issue an OFO Notice to all affected Shippers, all affected Connected Parties and Suruhanjaya Tenaga (ST).
- (b) OFO Notices will be issued to all affected Shippers, all affected Connected Parties and ST, through the GMS and/or by email.
- (c) An OFO Notice must contain:
 - i. the time at which the OFO commences;
 - ii. the estimated number of days affected by the OFO;
 - iii. if the OFO relates to action to be undertaken on the current day, any adjustments to the quantity of gas which can continue to be injected or off-taken at the Distribution Network;
 - iv. if the OFO relates to action to be undertaken on a future day, any adjustments to the Reserved Capacity, Maximum Hourly Quantity (MHQ) and/or Final Operating Schedule for Shippers at the Exit Point; and
 - v. where possible, reasonable details of the event or circumstances which have resulted in the OFO, noting that there may be limited information available at the time of the issuance of OFO Notice.

3.2 Issue OFO Updates

- (a) During an OFO period, GMD will issue OFO Updates to all affected Shippers, all affected Connected Parties and ST.
- (b) An OFO Update may contain
 - i. any progress made in eliminating the conditions which gave rise to the issuance of the OFO, since the OFO Notice;
 - ii. the estimated number of days that will continue to be affected by the OFO;

- iii. if the OFO relates to the current Gas Day, any adjustments to the Final Operating Schedule, to the extent these adjustments differ from those set out in the OFO Notice or a preceding OFO Update;
 - iv. if the OFO relates to future Gas Days, any limits to contracted Reserved Capacity or MHQ for Shippers at the Exit Point, to the extent these adjustments differ from those set out in the OFO Notice or a preceding OFO Update;
 - v. reasonable details of the event or circumstances which have resulted in the OFO, to the extent that these have not been provided in the OFO Notice or a preceding OFO Update.
- (c) OFO Updates will be issued to all affected Shippers, all affected Connected Parties and ST through the GMS and/or by email.

3.3 Issue OFO Completion Notice

- (a) On the OFO System Restoration Day, GMD will issue an OFO Completion Notice to all affected Shippers, all affected Connected Parties and ST. The OFO System Restoration Day is the Gas Day on which Distribution Network capacity is restored to a level of Reserved Firm Capacity of the Distribution Network.
- (b) An OFO Completion Notice shall contain:
- i. the OFO System Restoration Day;
 - ii. reasonable details of the event or circumstances which have resulted in the OFO, to the extent that these have not been provided in the OFO Notice or a preceding OFO Update;
 - iii. a statement that GMD will calculate System Restoration Cost, and determine the allocation of those costs, in accordance with this OFO Handling Procedure.
- (c) OFO Completion Notices will be issued to all affected Shippers, all affected Connected Parties and ST through the GMS and/or by email.

4. Timeline

4.1 Table 1 summarises the time frame for this work area.

Process	Time Frame
Issue OFO Notice	As soon as practicable after deciding to raise an OFO.
Issue OFO Update	At every critical event, from the issue of the OFO Notice, until such time that GMD issues an OFO Completion Notice for that OFO
Issue OFO Completion Notice	As soon as practicable after a OFO System Restoration Day, but no later than 24 hours following the OFO System Restoration Day

Table 1: Time frame for notification protocols

- 4.2 For the avoidance of doubt, GMD may issue an OFO Notice after commencing an OFO action if it believes, in its discretion, that the time taken to issue the OFO Notice may put at risk the safety and/or integrity of the Distribution Network or any person.

VII. SYSTEM RESTORATION COST

1. Code Provisions

1.1 At the end of OFO period, the distribution licensee must determine the System Restoration Cost, including:

- (a) capacity usage charges;
- (b) implementation costs of OFO processes;
- (c) replacement and repair costs of distribution pipeline assets;
- (d) other costs (TPA Code, 6.5.6)

2. Procedure Trigger

Determination of OFO costs begins on the OFO Work Completion Day, which is the day on which all work directly related to an OFO is completed by GMD. For the avoidance of doubt, the OFO Work Completion Day may be after the OFO System Restoration Day.

3. Description

3.1 After the OFO Work Completion Day, GMD will determine the System Restoration Cost associated with the OFO.

3.2 The System Restoration Cost for an OFO will be calculated in accordance with the formula below:

System Restoration Cost

$$= \text{Repair and replacement costs} + \text{Third party costs} + \text{Distribution charge} + \text{Gas costs} + \text{Incremental GMD staff costs} + \text{Investigation costs} + \text{other costs}$$

Where:

- **Repair and replacement costs** – the cost of repairing or replacing any facility damaged by the conditions which gave rise to the OFO, whether those facilities are owned by GMD or other party. This may include, without limitation, the cost of repairing distribution pipes, service station, valve chamber and etc.;
- **Third party costs** – the cost of engaging external contractors to implement OFO processes and/or undertake any repair or replacement works;
- **Distribution Network charge** – the total of Distribution Network charges that Shippers would otherwise have been required to pay if the OFO event did not occur
- **Gas costs** – this will include the cost of gas lost due to the circumstances which gave rise to the OFO, and the cost of purging and gas-in distribution pipeline as part of an OFO action;

- **Incremental GMD staff costs** – the cost of GMD staff that are directly attributable to an OFO, and which will not be recovered through existing network tariffs. This may include, without limitation, any overtime and allowances payable to staff that were not included in GMD's operating expenditure allowance for the current regulatory period;
- **Investigation cost** – the cost of investigation either conducted by GMD or/and an expert and the incremental cost to GMD from preparing the OFO Cost Allocation Report, which will not be recovered through existing network tariffs. This may include, without limitation, overtime and allowances payable to staff, and transportation costs, that were not included in GMD's operating expenditure allowance for the current regulatory period; and
- **Other costs** – this will include any other costs incurred by GMD to eliminate the conditions which gave rise to the issuance of the OFO, and to implement OFO processes, which are not otherwise captured by the preceding paragraphs, and will not be recovered through existing network tariffs.

3.3 System Restoration Cost for an OFO should be directly attributable and will not include any consequential losses.

3.4 There will be no suspension of Distribution Network charges during an OFO. For the avoidance of doubt, during an OFO, Shippers will be required to pay in full any Distribution Network charges that they would otherwise have been required to pay if the OFO event did not occur, irrespective of whether capacity of Distribution Network is curtailed and GMD is unable to provide services to the Shippers.

4. Timeline

Table 2 summarises the time frame for this work area.

Process	Time Frame
Determine System Restoration Cost	As soon as practicable after the OFO Work Completion Day (investigation by GMD) or after appointment of expert (investigation by expert).

Table 2: Time frame for communication protocols

VIII. ALLOCATION AND RECOVERY OF SYSTEM RESTORATION COST

1. Code Provisions

1.1 If the occurrence of an OFO was:

- (a) the fault of a shipping licensee(s), the distribution licensee is entitled to recover the costs from the shipping Licensee(s) (TPA Code, 6.5.7)
- (b) the fault of the distribution licensee, the distribution licensee is not entitled to recover the costs from the shipping licensees (TPA Code, 6.5.8)

(c) was neither the shipping Licensees' nor the distribution licensee' fault, the distribution licensee shall bear the costs and recover such costs through the tariffs (TPA Code, 6.5.9)

1.2 The distribution licensee must appoint an independent expert to conduct an investigation to find the circumstances and reasons for such an OFO situation. The Commission may review the outcome of such investigations (TPA Code, 6.5.10).

2. Procedure Trigger

The allocation and recovery of System Restoration Cost work area begins upon GMD calculating the System Restoration Cost for an OFO event.

3. Description

3.1 Investigating the cause of an OFO

- (a) GMD will undertake its own investigation of the circumstances and reasons which caused the issuance of the OFO.
- (b) if the investigation report disputed by the related party, GMD will appoint an independent expert to investigate the circumstances and reasons which caused the issuance of the OFO; and
- (c) An independent expert referred to in paragraph VIII.3.1.(b) is a person who:
 - i. is not a director, officer, employee or agent of an entity holding a re-gas licence, transportation licence, distribution licence, shipping licence, private gas licence, or retail licence;
 - ii. is not subject to any actual or perceived conflicts of interest;
 - iii. holds a relevant engineering qualification from an institution approved by GMD;
 - iv. possesses at least 10 years of working experience in the gas sector in Malaysia, or other countries approved by GMD;
- (d) GMD will select an expert to investigate a given OFO event through a tendering process.
- (e) The outcome of any investigation into the circumstances and reasons which caused the issuance of an OFO, whether conducted by an independent expert or by GMD, must be presented in a written report (the OFO Cost Allocation Report. This report must set out:
 - i. the methodology adopted to undertake the investigation;
 - ii. a comprehensive description of the circumstances and reasons which caused the issuance of the OFO;
 - iii. all the entities that contributed, in full or in part, to the circumstances and reasons which caused the issuance of the OFO; and
 - iv. an appropriate allocation in percentage terms of the System Restoration Cost amongst the parties identified in the preceding paragraph.

3.2 Allocation of System Restoration Cost

If the occurrence of an OFO was, in whole or in part, the fault of:

- (a) **Shipper** – GMD is entitled to recover an amount of the System Restoration Cost for that OFO from the Registered Shipper. The maximum amount that will be recovered from the Registered Shipper will be equal to the proportion of fault attributed to the Registered Shipper in the OFO Cost Allocation Report, multiplied by the System Restoration Cost.
- (b) **Connected party** – GMD is entitled to recover an amount of the System Restoration Cost for that OFO from the connected party. The maximum amount that will be recovered from the connected party is equal to the proportion of fault attributed to the connected party in the OFO Cost Allocation Report, multiplied by the System Restoration Cost.
- (c) **Identifiable third party** – GMD will seek recovery an amount of the System Restoration Cost for that OFO from the third party. The maximum amount that GMD will seek to recover from the third party is equal to the proportion of fault attributed to the third party in the OFO Cost Allocation Report, multiplied by the System Restoration Cost.
- (d) **GMD** – GMD will not recover from other parties an amount of the System Restoration Cost that reflects the allocation of fault to GMD. The amount of costs that GMD will be required to bear is equal to the proportion of fault attributed to GMD in the OFO Cost Allocation Report, multiplied by the System Restoration Cost.

3.3 Recovery of System Restoration Cost

- (a) GMD will invoice parties for their proportion of System Restoration Cost, based on the allocation of fault attributed to each party in the OFO Cost Allocation Report.
- (b) An invoice to a party for recovery of OFO costs must:
 - i. provide a breakdown of the System Restoration Cost;
 - ii. set out the proportion of fault attributed to the party; and
 - iii. set out the total cost to be recovered from the party.

4. Timeline

Table 3 summarises the time frame for this work area.

Investigation	Process	Time frame
By GMD	Issue OFO Cost Allocation Report	As soon as practicable after GMD has calculated the System Restoration Cost
	Issue invoices	Next billing cycle after developing the OFO Cost Allocation Report
By appointing an expert	Issue Request for Tender for expert	As soon as practicable after receive dispute by related party
	Receive OFO Investigation Report and OFO Cost Allocation Report from expert	The reasonable duration of the study, as per the agreement between GMD and the expert
	Issue revised OFO Cost Allocation Report	As soon as practicable after GMD has receive final OFO Investigation Report from expert.
	Issue invoices	Next billing cycle after receipt of the OFO Cost Allocation Report

Table 3: Time frame from OFO Cost allocation Report until invoice issuance

IX. FLOWCHART OF OFO HANDLING

1. In general, OFO handling work area and process is explained in flowchart in Figure 1.

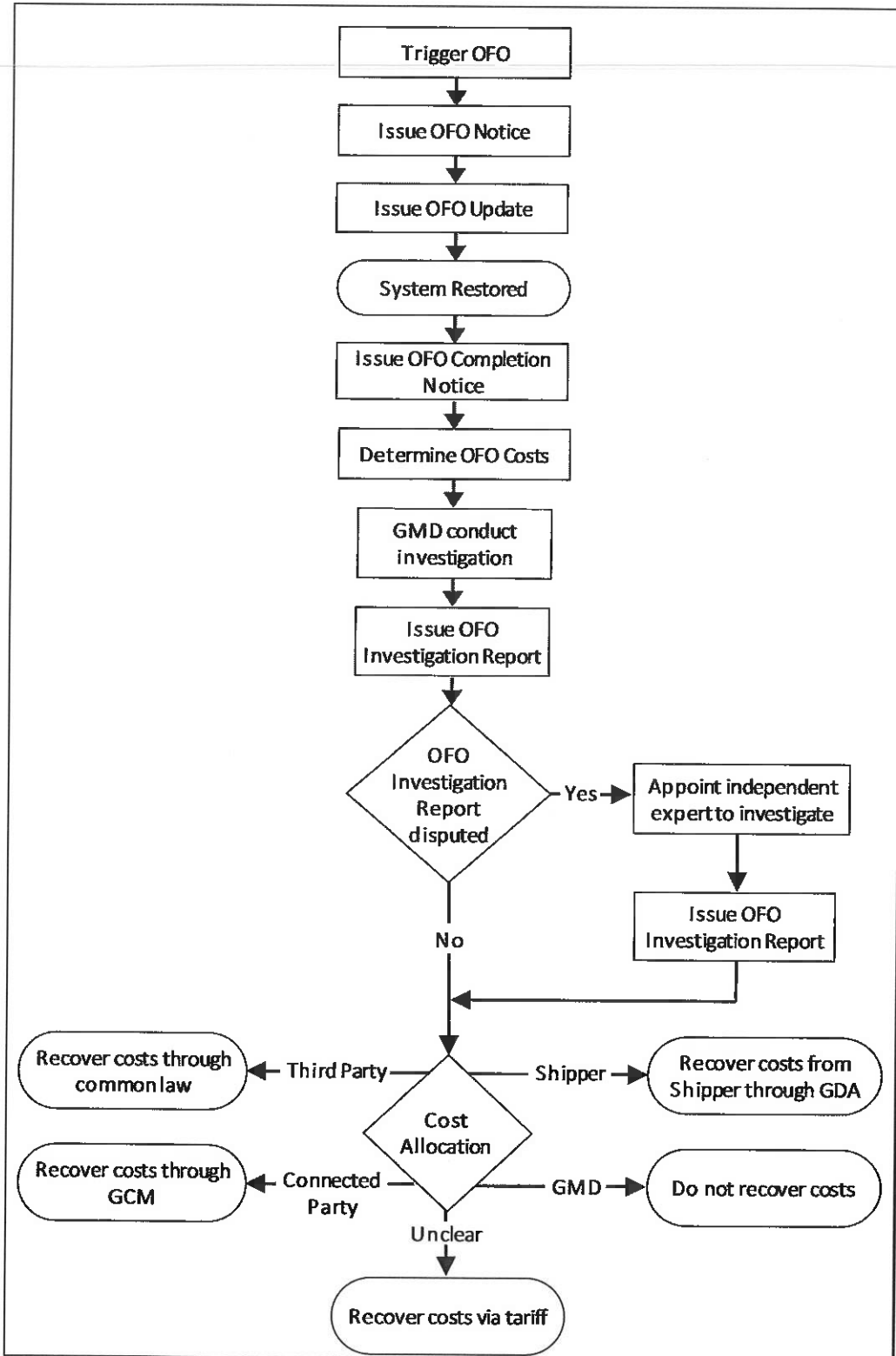


Figure 1: OFO handling procedure flowchart

2. The procedure begins when GMD decides that an OFO is necessary. This may happen when there is an event of Force Majeure or Emergency, or whenever GMD considers, in its discretion, that an OFO action is required to safeguard the reliability, safety and integrity of the Distribution Network.
3. GMD will, as soon as practicable after deciding to raise an OFO, issue an OFO Notice to all affected Shippers, all affected Connected Parties and ST.
4. During an OFO, GMD will keep all affected Shippers, all affected Connected Parties and ST updated about the progress and the conditions which gave rise to the issuance of the OFO. This will be undertaken by issuing OFO Update that will be provided at every critical event from the commencement of the OFO.
5. Once network capacity has been fully restored, GMD will issue an OFO Completion Notice to all affected Shippers, all affected Connected Parties and ST.
6. As soon as practicable after completing all work directly related to an OFO, GMD will determine the System Restoration Cost associated with the OFO.
7. GMD will conduct an investigation of the cause of the OFO and issue the OFO Investigation Report.
8. If the OFO Investigation Report being disputed by related parties, GMD may appoint an independent expert to investigate the circumstances and reasons which caused the issuance of the OFO.
9. System Restoration Cost together with the cost of investigation will be allocated to Shippers, Connected Parties and/or identifiable third parties on a fault basis. If fault cannot be established then the costs will be recovered via network tariffs.