

TMX EQUITIES

Incident Management
Guidelines for Toronto
Stock Exchange,
TSX Venture Exchange,
and TSX Alpha Exchange



Introduction

This document represents operational guidelines followed by TMX Markets in the event of a critical incident impacting the operations and availability of the Toronto Stock Exchange, TSX Venture Exchange, and/or TSX Alpha Exchange (collectively, a “TMX marketplace”) between 7:00am and 5:00pm EST on regular trading days (each, an “incident”). An incident is generally considered to be a significant service interruption to trading as a result of a system failure related to either the access or proper functioning of the trading systems or the related market data feeds.

Although the operational guidelines followed during an incident may vary depending on the specific nature and complexity of an incident, which can vary significantly, these guidelines are intended to provide pertinent information, transparency and a level of certainty around how a TMX marketplace will be managed during an incident. This document is intended to assist trading participants and stakeholders in their decision making, risk management, and responses during a TMX marketplace incident.

Incident Communications and Support

Effective communication to clients and stakeholders is critical and we will strive to share accurate and timely information as it becomes available. Notification of an Incident, and ongoing information updates, will be communicated through the following channels:

- Incident Update One-Way Conference Bridge
- Email Production Alerts
- Trader Support Dedicated Phone lines

Incident Update (“IU”) Conference Bridge

Upon a declaration of an incident by TMX, a dedicated one-way IU telephone bridge (the “IU Bridge”) will be initiated to provide information and updates to stakeholders. The IU Bridge will provide the most up-to-date, official source of information intended for all external stakeholders. By providing a one-way channel for updates, our goal is to keep the Market Operations phone lines open for Level 1 trader support and order/trade reconciliation and management assistance while providing the most up-to-date incident information to all clients simultaneously.

The initial email production alert notifying clients of the declaration of an incident will instruct stakeholders to join the IU Bridge and will contain the following the IU Bridge call-in details:

Local	(416) 933-8665
Toll Free	1 888 402-9166
Conference ID	8694845

Email Production Alerts

Production alerts provide email notifications related to the declaration, status, trade resumption, and other information updates of an Incident to email addresses on our Production alerts distribution list.

- 1 Service Interruption – Under Investigation** – Initial or early stage notification of a potential or identified issue or interruption that is under investigation. Subsequent status notices may be provided.
- 2 Incident Declaration** – Initial declaration of a confirmed Incident with IU Bridge details and information, if available or confirmed, related to the nature and scope of the incident, and impacted systems/markets. Subsequent update notices will be issued to provide any new information and status updates.
- 3 Technical Market Interruption – Declared** – Indicating a Technical Interruption has been declared. Subsequent update notices will be issued to provide any new information and status updates.
- 4 Technical Market Interruption – Revoked – Resumption of Trading** – Notification that trading will resume at a specified trading resumption time. Any relevant re-opening details will be communicated, including a reminder that a minimum of 15 minutes in pre-open will be provided to allow clients the opportunity to status and update orders before re-opening.
- 5 Technical Market Interruption – Pre Open Extended** – Indicating an extension to the Pre-Open time.
- 6 Incident Resolution** – Notice to confirm service has resumed to normal and the IU Bridge is closed.
- 7 Technical Market Interruption for the Remainder of the day** – Indicating Technical Interruption will remain in effect for the remainder of the Trading Day.
- 8 Incident Report** – Publication of the official Incident Report, summarizing the incident, impacted systems, root cause, and remedial actions.

Trader Support Dedicated Phone Lines

The following dedicated phone line is provided for trader support with priority given to inquiries specific to trade/order reconciliation, confirmation or management assistance:

Market Operations Support: (416) 947-4357 / (416) 947-4705

Participants seeking information related to the status of an Incident are encouraged NOT to use the Trader Support phone line and to refer to the Production Alerts or the IU Bridge to obtain that information.

Declaration of an Incident

The following guidelines will apply once an Incident has been declared and communicated through the Production Alerts and IU Bridge, with consideration to the time of day the Incident occurs and TMX's assessment of the viability of and expected time to recovery.

Initial Declaration and Decision to Interrupt the Market

- As a general principle, after the initial identification of a service interruption and any subsequent declaration of an Incident, a 'fix and move forward/re-open' approach is taken, with the objective of resuming service as quickly as possible.
- **Incident Declared: 9:00 - 15:00 EST**

Within 15 minutes of declaring an incident, one of the following decisions will be made based on the available information and assessed impact:

 - **No Market Interruption:** If there is reasonable certainty that the issue has been identified and resolved, or can be resolved such that regular service can resume with minimal additional market disruption, a decision to allow trading to continue will be made and communicated externally.
 - **Market Interruption:** If there is uncertainty around the nature, scope, and impact of the issue, the necessary 'fix' or service resumption time is unclear, or TMX believes the fair and orderly functioning of a TMX marketplace is compromised, a decision to invoke symbol(s) specific or a market-wide interruption (as appropriate based on the nature and scope of the Incident) will be made and communicated externally.
 - **Disaster Recovery:** If at any time during a market interruption TMX determines that it will be unable to resume service by 13:00 ET, a decision to move to Disaster Recovery Site ("DR") will be made and communicated. Resumption of service starting with a pre-open session on DR is expected within 1.5 hours.
 - **Market Interruption for the Remainder of the Day:** If at any time during a market interruption TMX does not implement DR or DR is unsuccessful and TMX determines that it will be unable to resume service by 15:00 ET, a decision to remain interrupted for the remainder of the trading day will be made and communicated externally.
 - The TSX / TSXV Market on Close ("MOC") facility will not run and TSX / TSXV will utilize the Alternative Closing Price methodology to calculate the official closing price.
 - Communication of the official closing price will be made through a Production Alert email and posted on the TMX website at: <https://www.tsx.com/trading/toronto-stock-exchange/member-notices/equities-trading-notices>
- **Market Interruption at 15:00 ET**
 - If at 15:00 EST the TMX marketplace continues to be interrupted from an earlier market declaration where a Resumption of Trading decision has not already been made and communicated or DR has not been implemented, a decision to remain interrupted for the remainder of the trading day will be made and communicated externally.
 - As a result, no resumption of trading for that trading day should be expected and the MOC facility will not run. TSX / TSXV will utilize the Alternative Closing Price methodology to calculate the official closing price.
 - Communication of official closing prices for any impacted symbols will be made through a Production Alert email and posted on the TMX website at: <https://www.tsx.com/trading/toronto-stock-exchange/member-notices/equities-trading-notices>
- **Incident Declared: 15:00 - 16:00 ET**

Within 15 minutes of declaring an incident, one of the following decisions based on the available information and assessed impact:

 - **No Market Interruption:** If there is reasonable certainty that the issue has been identified and resolved, or can be resolved, such that regular service can resume with minimal additional market disruption, a decision to allow trading to continue will be made and communicated externally.
 - **Market Interruption for the Remainder of the Day:** If there is uncertainty around the nature, scope, and impact of the incident, the necessary 'fix' or service resumption time is unclear, or TMX believes the fair and orderly functioning of a TMX marketplace is compromised, a decision will be made to invoke symbol(s) specific or a market-wide technical interruption (as appropriate based on the nature and scope of the Incident) for the remainder of the trading day and will be communicated externally.

- The MOC facility will not run and TSX / TSXV will utilize the Alternative Closing Price methodology to calculate the official closing price.
- Communication of the official closing price will be made through a Production Alert email and posted on the TMX website at: <https://www.tsx.com/trading/toronto-stock-exchange/member-notices/equities-trading-notices>

• **Incident Declared: 16:00 - 16:30 ET - TSX and TSX Venture Market on Close**

In the event the MOC facility fails in one or more securities preventing the successful operation of MOC at 4:00pm, TMX will invoke the following contingency MOC process:

- Affected MOC books will be locked such that order entry on all securities will be inhibited to prevent the addition of new orders and the cancellation of orders in the MOC book.
- An incident will be declared and communicated through the incident communication channels (Production Alert, IU Bridge).
- The start time for affected MOC symbols will be rescheduled.
- MOC for affected symbols will be rerun between 16:00 and 16:30 ET.
 - TMX will not attempt to rerun MOC on a non major rebalance day after 16:30 ET.
 - TMX will not attempt to rerun MOC on a major rebalance day after 17:00 ET.
- In the event MOC can not be facilitated through our contingency process the Alternative Closing Price methodology will be utilized to calculate the official closing price for the day.
- All MOC/LOC orders will be removed from the MOC book as part of the end of day batch process.

• **Operational Considerations During a Market Interruption:**

In the event of a Market Interruption, an attempt will be made to cease all order entry traffic from the onset as to minimize the impact. Please note that a minimum of 15 minutes will be set for an additional pre-open session before any attempt is made to reopen the market. During this time, market participants will be able to status their orders and make the necessary adjustments if required. The pre-open time will vary depending on the incident itself.

Resumption of Trading and Closing the Incident

If regular service can be resumed following an incident:

- A Production Alert will provide notification that trading will resume at a specified trading resumption time
- TMX will always schedule a minimum of 15 minutes in pre-open to allow clients the opportunity to status and update orders before re-opening. Depending on the magnitude of the incident and customer feedback, the pre-open period may be extended.
- An end of day Production Alert will be published the evening of the incident which will include:
 - Any information related to the expected market status for the following trading day.
 - An Official Incident Report.



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