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<input checked="" type="checkbox"/> Back-office - Futures	<input checked="" type="checkbox"/> Regulation

CIRCULAR 134-17
September 22, 2017

REQUEST FOR COMMENTS

INTRODUCTION OF NEW DAILY PRICE LIMITS ON OPTIONS

INTRODUCTION OF ARTICLE 6636.2 AND AMENDMENTS TO ARTICLES 6388, 6393, 6393A, 6767.12, 6776, 6789.11, 6796.11, 15707, 15741, 15757, 15783.6, 15784.6, 15785.6, 15786.6, 15787.6, 15808, 15937, 15957, 15976, 15996.7 AND 15999.9 OF THE RULES OF BOURSE DE MONTREAL INC.

The Rules and Policies Committee of Bourse de Montréal Inc. (the “**Bourse**”) has approved the introduction of article 6636.2 and amendments to articles 6388, 6393, 6393A, 6767.12, 6776, 6789.11 and 6796.11 of the Rule Six of the Bourse and amendments to articles 15707, 15741, 15757, 15783.6, 15784.6, 15785.6, 15786.6, 15787.6, 15808, 15937 (French version only), 15957 (French version only), 15976, 15996.7 (French version only) and 15999.9 of the Rule Fifteen of the Bourse regarding the introduction of New Daily Price Limits on Options.

Comments on the proposed amendments must be submitted within 30 days following the date of publication of this notice, or on October 30, 2017 at the latest. Please submit your comments to:

M^e Alexandre Normandeau
Legal Counsel
Office of the General Counsel
Bourse de Montréal Inc.
Tour de la Bourse
800 Victoria Square, P.O. Box 61
Montréal, Québec H4Z 1A9
Email: legal@tmx.ca

A copy of these comments must also be forwarded to the *Autorité des marchés financiers* (the “**Autorité**”) to:

M^e Anne-Marie Beaudoin
Corporate Secretary
Autorité des marchés financiers
800 Victoria Square, 22nd Floor
P.O. Box 246, Tour de la Bourse
Montréal (Québec) H4Z 1G3
E-mail: consultation-en-cours@lautorite.qc.ca

Please note that comments received by one of these recipients will be transferred to the other recipient and that the Bourse may publish a summary of such comments as part of the self-certification process concerning this file.

Appendices

You will find in the appendices an analysis as well as the text of the proposed amendments. The implementation date of the proposed amendments will be determined by the Bourse, in accordance with the self-certification process as established by the *Derivatives Act* (CQLR, chapter I-14.01).

Regulatory Amendment Process

The Bourse is authorized to carry on business as an exchange and is recognized as a self-regulatory organization ("SRO") by the Autorité. The Board of Directors of the Bourse has delegated to the Rules and Policies Committee of the Bourse its powers to approve and amend the Rules, the Policies and the Procedures, which are thereafter submitted to the Autorité in accordance with the self-certification process as determined by the *Derivatives Act* (CQLR, chapter I-14.01).



INTRODUCTION OF NEW DAILY PRICE LIMITS ON OPTIONS

INTRODUCTION OF ARTICLE 6636.2 AND AMENDMENTS TO ARTICLES 6388, 6393, 6393A, 6767.12, 6776, 6789.11, 6796.11, 15707, 15741, 15757, 15783.6, 15784.6, 15785.6, 15786.6, 15787.6, 15808, 15937, 15957, 15976, 15996.7 AND 15999.9 OF THE RULES OF BOURSE DE MONTREAL INC.

TABLE OF CONTENTS

I. SUMMARY..... 3

II. ANALYSIS..... 3

 a. Background..... 3

 b. Description and Analysis of Market Impact 4

 c. Comparative Analysis 9

 d. Proposed Amendments..... 11

III. AMENDMENT PROCESS 11

IV. IMPACTS ON TECHNOLOGICAL SYSTEMS 12

V. OBJECTIVES OF THE PROPOSED ADMENDMENTS..... 12

VI. PUBLIC INTEREST 12

VII. EFFICIENCY..... 12

VIII. PROCESS..... 13

IX. ATTACHED DOCUMENTS 13

I. SUMMARY

Bourse de Montréal Inc. (the « Bourse ») is reviewing its price thresholds beyond which orders are rejected or prevented from trading (“Marketplace Thresholds”) on options.

Marketplace Thresholds are part of an integrated framework to prevent erroneous orders, preserve market integrity and reduce short-term price volatility. The Bourse already has multiple controls in place that play an important role in the overall market risk management. The review of the Bourse’s Marketplace Thresholds will reinforce this line of defense against short-term, unexplained price volatility and liquidity shifts.

The Bourse wishes to introduce new Daily Price Limits (“DPL”), using a newly developed functionality that will apply to options, starting with equity and ETF options first.

II. ANALYSIS

a. Background

Regulatory requirements

Regulation 23-103 respecting Electronic Trading and Direct Electronic Access to Marketplaces (“Regulation 23-103”) seeks to address areas of concern and risks, such as credit and market integrity risk, related to electronic trading.

The Bourse is subject to Regulation 23-103 and must comply with its provisions. Section 8 of Regulation 23-103 requires that a marketplace must not allow the execution of orders exceeding price and volume thresholds. These price and volume thresholds are expected to reduce erroneous orders and price volatility by preventing the execution of orders that could interfere with a fair and orderly market.

These thresholds must be established either by a marketplace regulation services provider or the marketplace itself if it is a recognized exchange that directly monitors the conduct of its members and enforces requirements set under subsection 7.1(1) of Regulation 23-101 respecting Trading Rules. Since the Bourse is a recognized exchange that directly monitors the conduct of its participants, it has the authority to set these thresholds.

Current controls

Marketplace Thresholds are part of an integrated approach to prevent erroneous transactions, preserve market integrity and manage intraday sudden and unexplained market volatility. Each of the Bourse’s controls play an important role in the overall risk mitigation process.

Some of the controls currently in effect on the Bourse are:

- The requirement of approved participants to implement and maintain appropriate supervisory controls and procedures (pursuant to articles 3011 and 6366 of the Rules of the Bourse);

- An order price filter that validates incoming orders based on their price (current Marketplace Thresholds);
- For derivatives the underlying of which is exchange-traded, an automatic trading halt mechanism based on the circuit-breaker policy of the underlying's exchange;
- A discretionary authority granted to market supervisors to halt trading upon sudden and unforeseeable events that may affect market integrity (pursuant to article 6007 of the Rules of the Bourse);
- Procedures for the cancellation or adjustment of trades that allow market supervisors to quickly cancel trades or adjust trades prices;
- Maximum volume thresholds that validate incoming orders based on their size.

Current limitations on order prices

The Bourse currently computes and disseminates the different Marketplace Thresholds via its market data feed for every listed product traded on the Bourse. Current limits for options are static and are set at 0.01 - 999.99 regardless of strike price, moneyness, and expiry date.

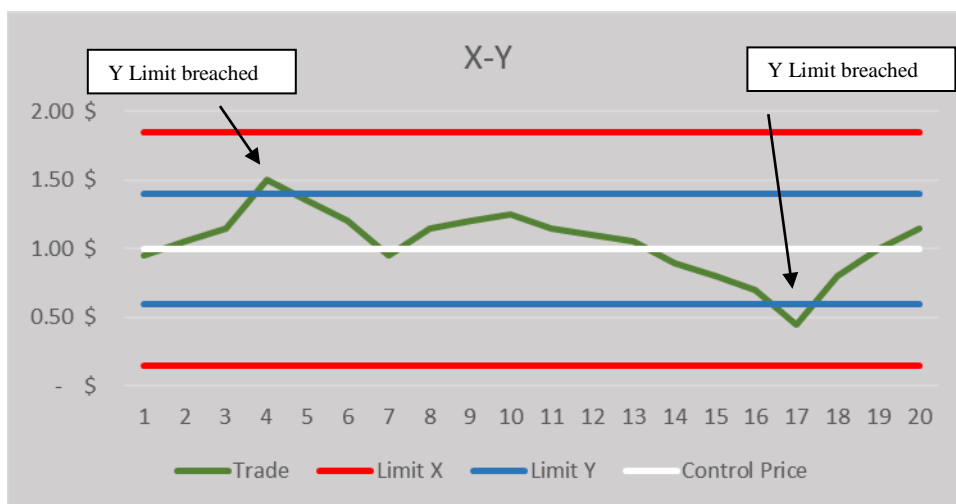
b. Description and Analysis of Market Impact

The Bourse will introduce the DPL functionality to enhance the granularity of its Marketplace Thresholds. The DPL functionality will allow a better control of mispriced orders and an improved management of short-term volatility on options.

The DPL functionality is comprised of two levels of control:

- 1- (X) which is a price limit based on a control price that filters incoming orders based on their price; and
- 2- (Y) which is a price limit based on a control price that validates the potential execution price of the next executable order.

Both the (X) and (Y) limits for a given product are based on the same control price.



Calculation of the control price

The control prices for (X) and (Y) will be calculated daily prior to market opening while taking into consideration the characteristics of each derivative, such as moneyness, implied volatility and expiry date, using a generalized version of the Black-Scholes algorithm for American style options and Barone–Adessi for the European style options (SXO). The Bourse will then apply a predetermined percentage to the control price to determine the upper and lower limits of the (X) and (Y) limits.

Control prices can be changed at the market supervisor’s discretion to ensure orderly trading should the price of an option’s underlying security be subject to an important movement, in order to avoid restraining clients from entering orders on such instrument. Modifications in market conditions can be caused by a variation of volatility, major news on the underlying or any major change in market expectations.

Operation of the DPL functionality

1- (X) Limit

This limit, referred to as (X), validates incoming order prices against a predetermined control price. The (X) limit is the only control that automatically rejects orders. Any order above or below the limit price will be automatically rejected and a message to that effect will be sent to the market participant who entered the order. This order price validation should avoid transactions at prices that would be deemed detrimental to the market integrity.

The limits of (X) are sufficiently wide range to enable market participants to enter orders at the price they wish to trade and that wouldn’t trigger an intervention from the Bourse based on its Procedures for the cancellation or adjustment of trades. (X) is the widest control and shouldn’t impair market depth by rejecting reasonable orders. It is aimed at preventing obviously erroneous orders (fat fingers).

The (X) limits will be effective during the pre-opening phase and regular trading session.

A limit order that has a limit price outside the (X) limits but can nonetheless be partially executed will be rejected.

A resting order originally priced within the (X) limits that falls outside of such limits after a control price modification by the Bourse or following a new calculation of the control price at the opening of a new trading session will stay in the trading book but it will not be tradable until its price goes back within the (X) and (Y) limits.

The price limits of the (X) will be entered daily into the SOLA trading engine and disseminated to the market via the Bourse’s data feed prior to the opening of trading. Intraday changes to limits will be communicated to participants via the Bourse’s data feed.

Below is an example of how (X) operates:

Equity Option:	XYZ August 19, 2017, Strike Price 55.00
Control Price:	\$2.30
Percentage for applicable (X) limits:	50% ¹
Lower/Upper Band for (X):	\$1.15 – \$3.45 (2.30 +/- (50% X 2.30))
Bid/Ask:	\$2.15 – \$2.60

Scenario:

During the trading session a market participant enters an order to sell 10 contracts at \$1.14.

Result:

The incoming order is outside the (X) price limit and is therefore rejected. The Bourse through its order entry and drop copy protocols, sends an electronic message to the market participant's trading application informing him that the order has been rejected.

2- (Y) Limit

This limit, referred to as (Y), is narrower than the (X) limit and validates the potential execution price against the same control price predetermined by the Bourse for each instrument. Any order priced within (X)'s limits is allowed in the electronic trading system. The DPL functionality will intervene if the potential execution price of an order exceed the (Y)'s limits. (Y)'s limits aren't as wide as (X)'s thus exercising a closer control on order prices.

Opening Stage

At the opening, a theoretical opening price outside the (Y) limits triggers a trading halt in the derivative instrument for a predetermined period of time. The instrument will attempt to automatically re-open through the process of a volatility auction. If the reopening price is within the (Y) limits, trading resumes normally. However, if the reopening price is outside the limits, the derivative instrument stays halted. A market supervisor can intervene and extend the trading halt if the derivative instrument cannot reopen within the (Y) limits after a few attempts.

The trading halt will place the instrument in a special state call "reserved state." During that state, all clients can modify or cancel their orders as well as enter new orders, but no trading is possible until the reopening of the instrument.

The market will be notified in real-time of any trading halt caused on an instrument by a breach to the (Y) limits and will be informed when trading resumes after the reopening of such instrument.

¹ Percentage may not reflect actual chosen thresholds.

Regular trading session

During regular hours, any participant can enter a passive order that would be priced outside the (Y) limits but within the (X) limits. However, the DPL functionality will intervene if the potential execution price of an incoming order is outside the (Y) limits. In such a situation, the functionality will eliminate the incoming order, preventing the trade. A message to that effect will be sent to the market participant who entered the incoming order.

Limit orders that have a price limit outside (Y) and can be executed in part can be entered in the trading system. A limit order can drill through the liquidity up until the next lot is priced outside (Y). The remaining quantity of the order will remain in the trading system as a limit order priced at the applicable (Y) limit.

The (Y) limit aims at limiting the price fluctuation of a derivative instrument during a trading session and has no impact on market depth or liquidity. It is meant to assure that a derivative instrument's price will not increase or decrease unreasonably during a trading session.

The percentages of the (Y) limits will be made publicly available.

Below are examples of how (Y) operates:

Equity Option:	XYZ August 19, 2017, Strike Price 55.00
Control Price:	\$2.30
Lower/Upper Band for (X):	\$1.15 – \$3.45 (2.30 +/- (50% X 2.30))
Percentage for applicable limit (Y):	40% ²
Lower/Upper Band for (Y):	\$1.38 – \$3.22 (2.30 +/- (2.30 X 40%))
Bid/Ask:	\$1.37 – \$2.45

Scenario A:

During the pre-opening phase, a market participant enters an order to sell 10 contracts at \$1.37, which causes the theoretical opening price to be calculated at \$1.37.

Result A:

The incoming order is within the (X) price limit, therefore it is not rejected and placed in the central limit order book ("CLOB"). However, holding everything else constant, the DPL functionality calculates that the order will cause the theoretical opening price to be \$1.37. As a result, the instrument will enter into a reserved state because of the violation of the (Y) limit and will remain in such state for a period of time defined by the Bourse.

The time lapse will permit market participants to adjust their orders so that the trade price does not violate the (Y) price limit. If this occurs, the DPL functionality will automatically re-open the instrument and allow the new established transaction to occur at a price within the (Y) price limit. If the order price is not adjusted such that the transaction price is within the (Y) price limits then the instrument will remain in a Reserved State.

² Percentage may not reflect actual chosen thresholds.

Scenario B:

During the regular trading session, a market participant enters an order to sell 10 contracts at \$1.37 which would result in a potential transaction.

Result B:

As the potential execution price of this incoming order is outside the (Y) price limit, such incoming order is eliminated by the system. The Bourse through its order entry and drop copy protocols, sends an electronic message to the market participant's trading application informing him that the order has been eliminated.

Impact on market makers

Bulk quote orders from market makers will not be subject to the (X) limits.

Market makers' quoting obligations are not linked to the (X) or (Y) limits. While market makers' bulk quotes priced outside of the (X) and (Y) limits will be allowed in the system, the execution of a trade with an off-limit price will be prevented as the limits will not allow an incoming order, including through other bulk quotes, to be executed against such market makers' bulk quotes.

During regular trading hours, an order from a bulk quote triggering a potential transaction outside the (Y) limits on a specific instrument will not be allowed to trade: the system will reject the bid and offer order specifically for such instrument and let all other orders from the initial bulk quote reach the order book.

Market Impacts

Activating the DPL functionality on options may cause some impacts on the market and bear some risks, which the Bourse will actively monitor and mitigate. As a first phase, the Bourse intends to activate the DPL functionality on equity and ETF options. The aforementioned risks are as follows.

As mentioned above, the Bourse will calculate the control prices for each instrument on a daily basis, and in the event that market conditions importantly affect the movement of a specific underlying instrument, the Market Operations Department will move the (X) and (Y) limits to ensure orderly trading of options on such instrument. To do so and to prevent trading disruption, the Market Operations Department will closely monitor the movement of all underlying instruments of the options that are subject to the (X) and (Y) limits, and will trigger a recalculation of control price(s) and adjustment of limits when needed.

There is also a risk of trade disruption when the (Y) limit is breached during the pre-opening phase and a specific instrument is placed in a reserved state, as participants will not be able to trade such instrument until it reopens for trading. While the breach will trigger a trading halt, the Bourse deems it reasonable as it serves the objectives justifying the activation of the limits: preventing erroneous trading and limiting short-term, unexplained price volatility and liquidity shifts. The Bourse believes that in such circumstances, the benefits outweigh potential impacts on the market. Proper mitigation for such risk involves setting up the (Y) limits at the right levels to avoid unnecessary trading halts while still reaching such objectives.

In the same vein, the Bourse understands that there is some risk in the process of setting up the percentages of the limits at appropriate levels where they would achieve its goals while not disrupting orderly trading. The Bourse is currently testing multiple scenarios to mitigate such risk, analysing the effects of various percentage ranges with actual market data. The course of action chosen by the Bourse upon activation of the DPL functionality is to err on the side of larger (X) and (Y) limits initially to prevent market disruption, and adjust such limits over some period of time to reach the most effective balance point.

The Bourse will closely monitor the market impacts related to the DPL functionality activation, and make appropriate corrections to the system calibrations where and when required to ensure orderly trading.

c. Comparative Analysis

Comparable exchanges

For the purpose of the comparative analysis, the Bourse has considered four large equity option exchanges. The comparable exchanges selected for comparison are the Chicago Board Options Exchange, NYSE AMEX (NYSE Group), Borsa Italiana (LSE Group), and Australian Securities Exchange (ASX Group). Such exchanges were chosen based on their size and respective regional importance.

Comparable functionalities

We have reviewed and compared the various functionalities offered (or not) by the comparable exchanges based on the presence of:

- (X) The exchange validates incoming order prices against a predetermined control price.
- (Y) The exchange validates the potential execution price against a control price predetermined by the exchange.

	NYSE AMEX ³	CBOE ⁴	BORSA ITALIANA ⁵	ASX ⁶
Presence of (X)	Yes	Yes	Yes	No
Presence of (Y)	Yes	Yes	Yes	Yes

Presence of (X) on comparable exchanges:

NYSE AMEX applies a concept called “NBBO too executable” where an order price too far from the National Best Bid and Offer is rejected from reaching the central book of order.

CBOE applies a concept called ‘Limit Order Price Reasonability Checks’ where an order price too far from the National Best Bid and Offer is rejected from reaching the central book of order.

BORSA ITALIANA applies a concept similar to the one that the Bourse wishes to introduce. The price parameter of any incoming limit order is validated against the Static Control Price plus/minus a percentage range called (X).

ASX does not use an automatic order rejection concept similar to the Bourse's proposed (X): ASX does have procedures to cancel orders that are placed in an Extreme Trade Range, and applies a concept called Anomalous Order Threshold (“AOT”) which is closer to the Bourse's proposed (Y), where orders outside a predefined limit cannot be matched.

Presence of (Y) on comparable exchanges:

NYSE AMEX applies a concept called “Collar protections” (“collar logic”). This functionality helps prevent scenarios in which aggressive orders immediately trade up or down to an extreme price.

CBOE applies the “Limit Up-Limit Down (LULD) Plan”, in line with the *Regulation NMS Plan to Address Extraordinary Market Volatility* in the US. When the underlying security on a Stock-option order is in a limit up-limit down state, such order will only execute if the calculated stock price is within the permissible Price Bands.

BORSA ITALIANA applies a concept similar to the one that the Bourse wishes to introduce. Prior to executing a trade, the trading system validates its potential execution price. The potential

³ Intercontinental Exchange Group, Inc. (2015). *Options Pre-Trade and Post-Trade Risk Controls NYSE Amex Options & NYSE Arca Options*. [online] Available at: https://www.nyse.com/publicdocs/nyse/markets/amex-options/US_Options_Risk_Controls_Client_Document.pdf [Accessed 13 Jun. 2017]

⁴ Chicago Board Options Exchange (2016). *CBOE Rules – Chapters 1 - XXIX*. [online] Available at: http://wallstreet.cch.com/CBOETools/PlatformViewer.asp?searched=1&selectednode=chp_1_1_6_1_22&CiRestriction=6%2E12&manual=%2FCBOE%2FRules%2Ffcboe-rules%2F [Accessed 13 Jun. 2017]

⁵ Borsa Italiana S.p.A. (2017). *IDEM: Guide to the Trading System*. [online] Available at: http://www.borsaitaliana.it/borsaitaliana/gestione-mercati/migrazioneidem/idem-guidetothe tradingsystemv38.en_pdf.htm [Accessed 13 Jun. 2017]

⁶ ASX Limited (2017). *ASX Operating Rules Procedures*. [online] Available at: http://www.asx.com.au/documents/rules/asx_or_procedures.pdf [Accessed 13 Jun. 2017]

execution price is validated against the Static Control Price plus/minus a percentage range call (Y). If the price is outside this range, the transaction is rejected and the instrument will be halted. After a period of time, defined by the exchange, the instrument will go back into a normal trading state.

ASX applies the concept of Anomalous Order Threshold (“AOT”). An order triggering a potential transaction outside a predefined range will not be matched and an auction will be conducted in the relevant order book.

Presence of a dynamic limit on comparable exchanges:

The Bourse is aware that a few comparable exchanges also use a dynamic price limit concept, which is another set of limits that moves in real-time based on trade prices. Given the dynamics of its market, the Bourse believes that the implementation of the (X) and (Y) limits is sufficient to meet the objectives stated herein. If and as market realities evolve, the Bourse may consider other types of limits in the future.

Conclusion of the comparative analysis

The Bourse considers that by offering the proposed DPL functionality, it remains consistent with other exchanges offering similar functionality. The DPL functionality will further refine the existing level of protection against market risks.

d. Proposed Amendments

The Bourse proposes the following amendments:

- Most of the amendments are meant to introduce the DPL functionality within the Bourse’s Rule 6 (Trading) as well as anchor such functionality within the already existing general rules pertaining to daily and trading price limits:
 - Under Rule 6388, to allow other daily price limits in the Rules;
 - Under Rules 6393 and 6393A, to broaden the reach of trading price limits;
 - To introduce new Rule 6636.2, which sets forth the DPL functionality applicable to options.
- Most of the amendments to Rule 6 and Rule 15 are meant to harmonize the language used throughout the Bourse’s Rules: Rules 6767.12, 6776, 6789.11, 6796.11, 15707, 15741, 15757, 15783.6, 15784.6, 15785.6, 15786.6, 15787.6, 15808, 15937 (French version only), 15957 (French version only), 15976, 15996.7 (French version only) and 15999.9.

The proposed amendments to the Bourse’s rules are attached to this analysis.

III. AMENDMENT PROCESS

The Bourse will improve overall market integrity by enhancing the granularity of the Marketplace Thresholds applicable to options. The DPL functionality will increase the overall protection against market risks and prevent undue price fluctuations.

IV. IMPACTS ON TECHNOLOGICAL SYSTEMS

Development work by the Bourse has been done and is completed to implement the DPL functionality.

The Bourse expects that the DPL project will have no technological impacts on independent software vendors or participants given that the (X) limits will be disseminated in the same way as current Marketplace Thresholds.

V. OBJECTIVES OF THE PROPOSED ADMENDMENTS

The Bourse believes that DPL will complement and refine its tools to prevent erroneous transactions, preserve market integrity and manage intraday sudden and unexplained market volatility by reducing the potential of transactions with an unreasonable price on the options market as well as the need for the Bourse to intervene through the application of its Procedures for the cancellation or adjustment of trades.

VI. PUBLIC INTEREST

The Bourse considers that the present initiative is in the interest of the public since its goal is to reduce potential unreasonable price swings. The proposed launch of the DPL functionality will improve the quality of the Bourse's options markets by enhancing the risk management tools offered by the Bourse to mitigate the risks associated with order entry errors and ensure that market participants have an increase degree of protection when executing transactions. In addition, the procedural changes proposed should further reduce the frequency with which the Bourse has to intervene in the market to make trade price adjustments.

VII. EFFICIENCY

*"Market efficiency refers to the ability of market participants to transact business easily and at a price that reflects all available market information. Factors considered when determining if a market is efficient include liquidity, price discovery and transparency."*⁷

The Bourse is of the view that the present initiative will improve market efficiency: these price thresholds are expected to reduce erroneous orders and price volatility by preventing the execution of orders that could interfere with a fair and orderly market, thus encouraging market participants to trade at a price that reflects reliable available information.

⁷ IOSCO (2011). *Regulatory Issues Raised by the Impact of Technological Changes on Market Integrity and Efficiency*. [online] Available at: <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD354.pdf> [Accessed 14 Jul. 2017]

VIII. PROCESS

The proposed amendments, including this analysis, must be approved by the Bourse's Rules and Policies Committee and submitted to the Autorité des marchés financiers, in accordance with the self-certification process, and to the Ontario Securities Commission for information purposes.

IX. ATTACHED DOCUMENTS

Proposed amendments to the Bourse's rules.

RULE SIX

TRADING

A. GENERAL FRAMEWORK AND PROCEDURES

[...]

Section 6365- 6401

Electronic Trading of Derivatives Instruments Traded on the Bourse

[...]

6388 Daily Price Limits

(25.09.00, 24.09.01, 29.10.01, 00.00.00)

Unless otherwise specified in the Rules, ~~the~~ Bourse establishes for each derivative instrument a daily price limit, based on a percentage, with respect to the previous day's settlement price and there shall be no trading above or below that limit. ~~The daily price limit percentage is established on a monthly basis in collaboration with the clearing corporation.~~

[...]

6393 Trading Price Limits

(25.09.00, 24.09.01, 29.10.01, 00.00.00)

In order to minimize errors of the approved participant during order entry in the electronic trading system, trading price limits are ~~in place~~established for each instrument. ~~This will~~These limits protect the approved participant from entering a wrong price, which could move the market dramatically.

The approved participant who has placed an order which is not in the trading price limits, will receive a specific message that his order has been rejected.

Unless otherwise specified in the Rules, ~~t~~The trading price limits will be set at the start of trading based on the previous day's settlement price (plus or minus). These limits will be adjusted by the Market Supervisor of the Bourse during the trading day, based on the movement of the market. The Bourse will be responsible to make sure the limits will not affect trading in any way. The new limits will be broadcasted to the market. ~~Once the trading price limit has reached the daily price limits, the daily price limits are effective.~~

The Bourse will advise the approved participants of any change to the spread of the trading price limits.

6393A Other Trading Price Limits

(18.09.09, 00.00.00)

Unless otherwise specified in the Rules, ~~A~~a range of trading price limits (up and down) will also be established in trading sessions during which the underlying exchange-traded products are not open for trading. Such ~~a~~-trading ~~range-price limits~~ will be established by the Bourse based on the previous day's settlement price at the beginning of that particular trading session and will not be readjusted intra-session.

[...]

C. OPTIONS

[...]

Section 6621 - 6650 Trading – Options

[...]

6636.1 Triggering of a Circuit-Breaker on the Underlying Interest (28.07.14)

Trading halts on equity, exchange-traded funds or income trust units options shall be coordinated with the trading halt mechanism of the underlying interest.

6636.2 Daily Price Limits on Options (00.00.00)

For the purpose of this article:

- a) “control price” means a price calculated for each options using a generalized version of the Black-Scholes algorithm for American style options and Barone–Adessi for the European style options.
- b) “X limits” means price limits based on a percentage of the control price under and above which an order is not allowed to register in the central limit order book.
- c) “Y limits” means price limits based on a percentage of the control price under and above which an incoming order would not be executed and would be eliminated, or under and above which a theoretical opening price would put the derivative instrument into a reserved state.
- d) “reserved state” means a trading halt triggered by a theoretical opening price under or above the Y limits at the opening of a given instrument.

The Bourse may subject options to the X limits and Y limits as follows:

- a) X limits: any order entered by a participant in breach of the X limits is automatically rejected by the trading system and a message is automatically sent to the participant to confirm such order rejection.
- b) Y limits
 - i) At the opening of an instrument, a theoretical opening price under or above the calculated Y limits causes the derivative instrument to enter into a reserved state.
 - ii) Participants can enter new orders and modify or cancel their orders on an instrument which is in reserved state.
 - iii) When an instrument is in reserved state, the trading system will attempt to automatically re-open the trading of such instrument through a volatility auction. Should the resulting reopening price be within the Y limits, trading on the instrument will resume. Should the resulting reopening price be outside the Y limits, the instrument will be maintained in a reserved state and another volatility auction will take place. Such process will

automatically take place until trading on the instrument resumes. The Bourse can extend the trading halt created by the reserved state to ensure orderly trading.

- iv) The Bourse will notify the market through its market data feed when an instrument enters into a reserved state and when trading is resumed for such instrument.
- v) During regular hours, passive orders priced outside the Y limits but within the X limits will be allowed in the trading system. Should the potential execution price of an incoming order be outside the Y limits, such incoming order will be eliminated, preventing the trade, and a message will be automatically sent to the participant to confirm such order elimination.
- vi) A limit order priced outside the Y limits that could otherwise be partially executed will be partially executed up until a lot is priced outside of the Y limits, and the remaining quantity of the order will be priced at the Y limit.

Control prices and percentages of the X limits and Y limits can be modified and Y limits can be temporarily lifted at the Bourse's discretion to ensure regular trading.

The X limits are disseminated to the market via the Bourse's market data feed daily prior to the opening of the market.

The X limits do not apply to bulk quotes entered by participants while acting as duly appointed market makers pursuant to article 6395.

[...]

OPTIONS ON THE S&P/TSX COMPOSITE INDEX BANKS (INDUSTRY GROUP)

6767 Application of Specific Rules (18.01.16)

In addition to articles 6571-6700 of the Rules, options on the S&P/TSX Composite Index Banks (Industry Group) shall be subject to the Rules contained in this section.

[...]

6767.12 ~~Price Limit~~ Trading Halts (18.01.16, 00.00.00)

Trading halts on options on the S&P/TSX Composite Index Banks (Industry Group) shall be coordinated with the trading halt mechanism of the underlying interest (circuit breaker).

[...]

OPTIONS ON THE S&P/TSX 60 INDEX

6771 Application of Specific Rules (07.09.99, 29.04.02, 18.12.12, 18.01.16)

In addition to articles 6571-6700 of the Rules, options on the S&P/TSX 60 Index shall be subject to the Rules contained in this section.

[...]

6776 ~~Daily Price Limit Trading Halts~~
(07.09.99, 29.04.02, 18.12.12, 28.07.14, 18.01.16, 00.00.00)

Trading halts on options on the S&P/TSX 60 Index are coordinated with the trading halt mechanism of the S&P/TSX 60 Index (circuit-breaker).

[...]

EQUITY OPTIONS

[...]

6789.11 ~~Daily Price Limit Trading Halts~~
(18.01.16, 00.00.00)

Trading halts on equity option contracts shall be coordinated with the trading halt mechanism of the underlying interest (circuit-breaker).

[...]

OPTIONS ON EXCHANGE-TRADED FUNDS

[...]

6796.11 ~~Daily Price Limit Trading Halts~~
(18.01.16, 00.00.00)

Trading halts on exchange-traded fund option are coordinated with the trading halt mechanism of the underlying interest (circuit-breaker).

[...]

RULE SIX

TRADING

A. GENERAL FRAMEWORK AND PROCEDURES

[...]

Section 6365- 6401

Electronic Trading of Derivatives Instruments Traded on the Bourse

[...]

6388 Daily Price Limits

(25.09.00, 24.09.01, 29.10.01, 00.00.00)

Unless otherwise specified in the Rules, the Bourse establishes for each derivative instrument a daily price limit, based on a percentage, with respect to the previous day's settlement price and there shall be no trading above or below that limit.

[...]

6393 Trading Price Limits

(25.09.00, 24.09.01, 29.10.01, 00.00.00)

In order to minimize errors of the approved participant during order entry in the electronic trading system, trading price limits are established for each instrument. These limits protect the approved participant from entering a wrong price, which could move the market dramatically.

The approved participant who has placed an order which is not in the trading price limits, will receive a specific message that his order has been rejected.

Unless otherwise specified in the Rules, the trading price limits will be set at the start of trading based on the previous day's settlement price (plus or minus). These limits will be adjusted by the Market Supervisor of the Bourse during the trading day, based on the movement of the market. The Bourse will be responsible to make sure the limits will not affect trading in any way. The new limits will be broadcasted to the market.

The Bourse will advise the approved participants of any change to the spread of the trading price limits.

6393A Other Trading Price Limits

(18.09.09, 00.00.00)

Unless otherwise specified in the Rules, a range of trading price limits (up and down) will also be established in trading sessions during which the underlying exchange-traded products are not open for trading. Such trading price limits will be established by the Bourse based on the previous day's settlement price at the beginning of that particular trading session and will not be readjusted intra-session.

[...]

C. OPTIONS

[...]

Section 6621 - 6650 Trading – Options

[...]

6636.1 Triggering of a Circuit-Breaker on the Underlying Interest (28.07.14)

Trading halts on equity, exchange-traded funds or income trust units options shall be coordinated with the trading halt mechanism of the underlying interest.

6636.2 Daily Price Limits on Options (00.00.00)

For the purpose of this article:

- a) “control price” means a price calculated for each options using a generalized version of the Black-Scholes algorithm for American style options and Barone–Adessi for the European style options.
- b) “X limits” means price limits based on a percentage of the control price under and above which an order is not allowed to register in the central limit order book.
- c) “Y limits” means price limits based on a percentage of the control price under and above which an incoming order would not be executed and would be eliminated, or under and above which a theoretical opening price would put the derivative instrument into a reserved state.
- d) “reserved state” means a trading halt triggered by a theoretical opening price under or above the Y limits at the opening of a given instrument.

The Bourse may subject options to the X limits and Y limits as follows:

- a) X limits: any order entered by a participant in breach of the X limits is automatically rejected by the trading system and a message is automatically sent to the participant to confirm such order rejection.
- b) Y limits
 - i) At the opening of an instrument, a theoretical opening price under or above the calculated Y limits causes the derivative instrument to enter into a reserved state.
 - ii) Participants can enter new orders and modify or cancel their orders on an instrument which is in reserved state.
 - iii) When an instrument is in reserved state, the trading system will attempt to automatically re-open the trading of such instrument through a volatility auction. Should the resulting reopening price be within the Y limits, trading on the instrument will resume. Should the resulting reopening price be outside the Y limits, the instrument will be maintained in a reserved state and another volatility auction will take place. Such process will automatically take place until trading on the instrument resumes. The Bourse can extend the trading halt created by the reserved state to ensure orderly trading.
 - iv) The Bourse will notify the market through its market data feed when an instrument enters into a reserved state and when trading is resumed for such instrument.

- v) During regular hours, passive orders priced outside the Y limits but within the X limits will be allowed in the trading system. Should the potential execution price of an incoming order be outside the Y limits, such incoming order will be eliminated, preventing the trade, and a message will be automatically sent to the participant to confirm such order elimination.
- vi) A limit order priced outside the Y limits that could otherwise be partially executed will be partially executed up until a lot is priced outside of the Y limits, and the remaining quantity of the order will be priced at the Y limit.

Control prices and percentages of the X limits and Y limits can be modified and Y limits can be temporarily lifted at the Bourse's discretion to ensure regular trading.

The X limits are disseminated to the market via the Bourse's market data feed daily prior to the opening of the market.

The X limits do not apply to bulk quotes entered by participants while acting as duly appointed market makers pursuant to article 6395.

[...]

OPTIONS ON THE S&P/TSX COMPOSITE INDEX BANKS (INDUSTRY GROUP)

6767 Application of Specific Rules (18.01.16)

In addition to articles 6571-6700 of the Rules, options on the S&P/TSX Composite Index Banks (Industry Group) shall be subject to the Rules contained in this section.

[...]

6767.12 Trading Halts (18.01.16, 00.00.00)

Trading halts on options on the S&P/TSX Composite Index Banks (Industry Group) shall be coordinated with the trading halt mechanism of the underlying interest (circuit breaker).

[...]

OPTIONS ON THE S&P/TSX 60 INDEX

6771 Application of Specific Rules (07.09.99, 29.04.02, 18.12.12, 18.01.16)

In addition to articles 6571-6700 of the Rules, options on the S&P/TSX 60 Index shall be subject to the Rules contained in this section.

[...]

6776 Trading Halts

(07.09.99, 29.04.02, 18.12.12, 28.07.14, 18.01.16, 00.00.00)

Trading halts on options on the S&P/TSX 60 Index are coordinated with the trading halt mechanism of the S&P/TSX 60 Index (circuit-breaker).

[...]

EQUITY OPTIONS

[...]

6789.11 Trading Halts

(18.01.16, 00.00.00)

Trading halts on equity option contracts shall be coordinated with the trading halt mechanism of the underlying interest (circuit-breaker).

[...]

OPTIONS ON EXCHANGE-TRADED FUNDS

[...]

6796.11 Trading Halts

(18.01.16, 00.00.00)

Trading halts on exchange-traded fund option are coordinated with the trading halt mechanism of the underlying interest (circuit-breaker).

[...]

**RULE FIFTEEN
FUTURES CONTRACTS SPECIFICATIONS**

[...]

S&P/TSX 60 INDEX STANDARD FUTURES

[...]

15707 ~~Price Limits/Trading Halts~~
(07.09.99, 18.01.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breakers).

In the event that trading in the securities market resumes after a trading halt, trading in the S&P/TSX 60 Index standard futures shall resume only after a percentage (as determined by the Bourse from time to time) of the interest underlying the S&P/TSX 60 Index have re-opened.

[...]

S&P/TSX 60 INDEX MINI FUTURES

[...]

15741 ~~Price Limits/Trading Halts~~
(18.01.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in the S&P/TSX 60 Index mini futures shall resume only after a percentage (as determined by the Bourse from time to time) of the interest underlying the S&P/TSX 60 Index have re-opened.

[...]

S&P/TSX GLOBAL GOLD INDEX FUTURES

[...]

15757 ~~Price Limits/Trading Halts~~
(31.01.01, 18.01.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in S&P/TSX Global Gold Index futures shall resume only after a percentage, as determined by the Bourse, of the interest underlying the S&P/TSX Global Gold Index has re-opened.

[...]

S&P/TSX CAPPED FINANCIALS INDEX FUTURES

[...]

15783.6 ~~Price Limits/Trading Halts~~
(18.01.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in S&P/TSX Capped Financials Index futures shall resume only after a percentage, as determined by the Bourse, of the interest underlying the S&P/TSX Capped Financials Index has re-opened.

[...]

S&P/TSX CAPPED INFORMATION TECHNOLOGY INDEX FUTURES

[...]

15784.6 ~~Price Limits/Trading Halts~~
(18.01.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in S&P/TSX Capped Information Technology Index futures shall resume only after a percentage, as determined by the Bourse, of the interest underlying the S&P/TSX Capped Information Technology Index has re-opened.

[...]

S&P/TSX CAPPED ENERGY INDEX FUTURES

[...]

15785.6 ~~Price Limits/Trading Halts~~
(18.01.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in S&P/TSX Capped Energy Index futures shall resume only after a percentage, as determined by the Bourse, of the interest underlying the S&P/TSX Capped Energy Index has re-opened.

[...]

S&P/TSX COMPOSITE INDEX BANKS (INDUSTRY GROUP) FUTURES

[...]

15786.6 ~~Price Limits~~/Trading Halts(18.01.16, 00.00.00)

Trading halts on S&P/TSX Composite Index Banks (Industry Group) futures shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in S&P/TSX Composite Index Banks (Industry Group) futures shall resume only after a percentage, as determined by the Bourse, of the interest underlying the S&P/TSX Composite Index Banks (Industry Group) has re-opened.

[...]

S&P/TSX CAPPED UTILITIES INDEX FUTURES

[...]

15787.6 ~~Price Limits~~/Trading Halts(18.01.16, 00.00.00)

Trading halts on S&P/TSX Capped Utilities Index futures shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in S&P/TSX Capped Utilities Index Futures contracts shall resume only after a percentage, as determined by the Bourse, of the interest underlying the S&P/TSX Capped Utilities Index has re-opened.

[...]

CANADIAN AND INTERNATIONAL SHARE FUTURES CONTRACTS

[...]

15808 ~~Price Limit~~/Trading Halts(31.01.01, 18.01.16, 23.11.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that a recognized exchange suspends trading in the underlying interest of an international share futures contract, then the Bourse may take certain measures regarding the futures contract concerned, including suspending or halting trading in the futures contract.

[...]

S&P/TSX COMPOSITE INDEX MINI FUTURES

[...]

15976 ~~Price Limits/Trading Halts~~
(15.05.09, 18.01.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in the S&P/TSX Composite Index futures contracts shall resume only after a percentage (as determined by the Bourse from time to time) of the interest underlying the S&P/TSX Composite Index have re-opened.

[...]

FTSE EMERGING MARKETS INDEX FUTURES

[...]

15999.9 ~~Daily Price Limits/Trading Halts~~
(09.06.14, 18.01.16, 00.00.00)

There is no daily price limit for FTSE Emerging Markets Index futures.

[...]

**RULE FIFTEEN
FUTURES CONTRACTS SPECIFICATIONS**

[...]

S&P/TSX 60 INDEX STANDARD FUTURES

[...]

15707 Trading Halts
(07.09.99, 18.01.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breakers).

In the event that trading in the securities market resumes after a trading halt, trading in the S&P/TSX 60 Index standard futures shall resume only after a percentage (as determined by the Bourse from time to time) of the interest underlying the S&P/TSX 60 Index have re-opened.

[...]

S&P/TSX 60 INDEX MINI FUTURES

[...]

15741 Trading Halts
(18.01.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in the S&P/TSX 60 Index mini futures shall resume only after a percentage (as determined by the Bourse from time to time) of the interest underlying the S&P/TSX 60 Index have re-opened.

[...]

S&P/TSX GLOBAL GOLD INDEX FUTURES

[...]

15757 Trading Halts
(31.01.01, 18.01.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in S&P/TSX Global Gold Index futures shall resume only after a percentage, as determined by the Bourse, of the interest underlying the S&P/TSX Global Gold Index has re-opened.

[...]

S&P/TSX CAPPED FINANCIALS INDEX FUTURES

[...]

15783.6 Trading Halts (18.01.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in S&P/TSX Capped Financials Index futures shall resume only after a percentage, as determined by the Bourse, of the interest underlying the S&P/TSX Capped Financials Index has re-opened.

[...]

S&P/TSX CAPPED INFORMATION TECHNOLOGY INDEX FUTURES

[...]

15784.6 Trading Halts (18.01.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in S&P/TSX Capped Information Technology Index futures shall resume only after a percentage, as determined by the Bourse, of the interest underlying the S&P/TSX Capped Information Technology Index has re-opened.

[...]

S&P/TSX CAPPED ENERGY INDEX FUTURES

[...]

15785.6 Trading Halts (18.01.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in S&P/TSX Capped Energy Index futures shall resume only after a percentage, as determined by the Bourse, of the interest underlying the S&P/TSX Capped Energy Index has re-opened.

[...]

S&P/TSX COMPOSITE INDEX BANKS (INDUSTRY GROUP) FUTURES

[...]

15786.6 Trading Halts (18.01.16, 00.00.00)

Trading halts on S&P/TSX Composite Index Banks (Industry Group) futures shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in S&P/TSX Composite Index Banks (Industry Group) futures shall resume only after a percentage, as determined by the Bourse, of the interest underlying the S&P/TSX Composite Index Banks (Industry Group) has re-opened.

[...]

S&P/TSX CAPPED UTILITIES INDEX FUTURES

[...]

15787.6 Trading Halts (18.01.16, 00.00.00)

Trading halts on S&P/TSX Capped Utilities Index futures shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in S&P/TSX Capped Utilities Index Futures contracts shall resume only after a percentage, as determined by the Bourse, of the interest underlying the S&P/TSX Capped Utilities Index has re-opened.

[...]

CANADIAN AND INTERNATIONAL SHARE FUTURES CONTRACTS

[...]

15808 Trading Halts (31.01.01, 18.01.16, 23.11.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that a recognized exchange suspends trading in the underlying interest of an international share futures contract, then the Bourse may take certain measures regarding the futures contract concerned, including suspending or halting trading in the futures contract.

[...]

S&P/TSX COMPOSITE INDEX MINI FUTURES

[...]

15976 Trading Halts

(15.05.09, 18.01.16, 00.00.00)

Trading halts shall be coordinated with the triggering of the trading halt mechanism of the underlying interest (circuit breaker).

In the event that trading in the securities market resumes after a trading halt, trading in the S&P/TSX Composite Index futures contracts shall resume only after a percentage (as determined by the Bourse from time to time) of the interest underlying the S&P/TSX Composite Index have re-opened.

[...]

FTSE EMERGING MARKETS INDEX FUTURES

[...]

15999.9 Daily Price Limits

(09.06.14, 18.01.16, 00.00.00)

There is no daily price limit for FTSE Emerging Markets Index futures.

[...]