OPTIONS 3 OPTIONS TRADING RULES

Section 1. Hours of Business

(a) The System operates and shall be available to accept bids and offers and orders from the time prior to market open specified by the Exchange on its website to market close on each business day, unless modified by NOM. Orders and bids and offers shall be open and available for execution as of 9:30 a.m. Eastern Time and shall close as of 4:00 p.m. Eastern Time except for option contracts on certain fund shares or broad-based indexes which will close as of 4:15 p.m. Eastern Time.

(b) Except for unusual conditions as may be determined by the Board, hours during which transactions in options on individual stocks may be made on NOM shall correspond to the normal business days and hours for business set forth in the rules of the primary market trading the securities underlying NOM options. Notwithstanding the foregoing, transactions may be effected in options contracts on Exchange-Traded Fund Shares, as defined in Options 4, Section 3(h); and in options contracts on exchange-traded notes including Index-Linked Securities, as defined in Options 4, Section 3(k), on NOM until 4:15 p.m.

(c) NOM shall not be open for business as provided within General 3, Section 1030.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098); amended Mar. 8, 2022 (SR-NASDAQ-2022-023), operative Apr. 7, 2022.

Section 2. Units of Trading and Meaning of Premium Quotes and Orders

(a) *Units of Trading*. The unit of trading in each series of options traded on NOM shall be the unit of trading established for that series by the Clearing Corporation pursuant to the Rules of the Clearing Corporation and the agreements of Nasdaq with the Clearing Corporation.

(b) *Meaning of Premium Quotes and Orders*. Except as provided in paragraph (c), orders shall be expressed in terms of dollars per unit of the underlying security. For example, a bid of "5" shall represent a bid of $500 for an options contract having a unit of trading consisting of 100 shares of an underlying security, or a bid of $550 for an options contract having a unit of trading consisting of 110 shares of an underlying security.

(c) *Special Cases*. Orders for an options contract for which NOM has established an adjusted unit of trading in accordance with Options 3, Section 2 shall be expressed in terms of dollars per 1/100 part of the total securities and/or other property constituting such adjusted unit of trading. For example, an offer of "3" shall represent an offer of $300 for an options contract having a unit of trading consisting of 100 shares of an underlying security plus ten (10) rights.

(d) All options on foreign currencies where the underlying foreign currency is not the U.S. dollar shall have a minimum increment of $.01.

(e) In the case of options on foreign currencies, all bids or offers shall be expressed in terms of U.S. dollars per unit of the underlying foreign currency. E.g., a bid of "3.25" for a premium on a $170 strike price option on the British pound shall represent a bid to pay $325 per option contract.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098); amended Jan. 29, 2020 (SR-NASDAQ-2020-006).

Section 3. Minimum Increments

(a) The following minimum quoting increments shall apply to options contracts traded on the Exchange:

(1) If the options series is trading at less than $3.00, five (5) cents;

(2) If the options series is trading at $3.00 or higher, ten (10) cents; and

(3) For options series traded pursuant to the Penny Interval Program as described in Supplementary Material .01 to Options 3, Section 3:

(A) one cent ($0.01) for all options series in QQQ, SPY, and IWM;

(B) one cent ($0.01) for all other options series included in the Penny Interval Program that are trading at less than $3.00; and

(C) five cents ($0.05) for all other options series included in the Penny Interval Program that are trading at or above $3.00.

(b) The minimum trading increment for options contracts traded on NOM will be one (1) cent for all series.

(c) A quote submitted to the System with an invalid trading increment will be re-priced. The quote will be rounded up to the nearest valid minimum price variation for offers and rounded down for bids.

Supplementary Material to Options 3, Section 3:

.01 **Requirements for Penny Interval Program.** The Exchange will list option classes for the Penny Interval Program ("Penny Program") with minimum quoting requirements ("penny increments") of one cent ($0.01) and five cents ($0.05), as set forth in Options 3, Section 3(a)(3)(A) - (C). The list of the option classes included in the Penny Program will be announced by the Exchange via Options Trader Alert and published by the Exchange on its website.

(a) Initial Selection. On the first trading day of the third full calendar month after April 1, 2020, the Penny Program will apply only to the 363 most actively traded multiply listed option classes, based on OCC's National Cleared Volume in the six full calendar months ending in the month of approval, that (i) currently quote in penny increments, or (ii) overlie securities priced below $200, or any index at an index level below $200. Eligibility for inclusion in the Penny Program will be determined at the close of trading on the monthly Expiration Friday of the second full month following April 1, 2020.

(b) Annual Review. Commencing in December 2020 and each December thereafter, OCC will rank all multiply listed option classes based on National Cleared Volume for the six full calendar months from June 1 through November 30 for determination of the most actively traded option classes.

(1) Addition to the Penny Program. Based on the Annual Review, any option class not in the Penny Program that is among the 300 most actively traded multiply listed option classes overlying securities priced below $200, or an index at an index level below $200, will be added to the Penny Program on the first trading day of January.

(2) Removal from the Penny Program. Except as provided in (c), (d), (e) and (f) below, based on the Annual Review, any option class in the Penny Program that falls outside the 425 most actively traded multiply listed option classes will be removed from the Penny Program on the first trading day of April.

(c) Newly listed Option Classes. The Exchange may add to the Penny Program a newly listed option class provided that (i) it is among the 300 most actively traded multiply listed option classes, as ranked by National Cleared Volume at OCC, in its first full calendar month of trading and (ii) the underlying security is priced below $200 or the underlying index is at an index level below $200. Any option class added under this provision will be added on the first trading day of the month after it qualifies and will remain in the Penny Program for one full calendar year, after which it will be subject to the Annual Review stated in section (b) above.

(d) Classes with Significant Growth in Activity. The Exchange may add any option class to the Penny Program, provided that (i) it is among the 75 most actively traded multiply listed option classes, as ranked by National Cleared Volume at OCC, in the past six full calendar months of trading and (ii) the underlying security is priced below $200 or the underlying index is at an index level below $200. Any option class added under this provision will be added on the first trading day of the second full month after it qualifies and will remain in the Penny Program for the rest of the calendar year, after which it will be subject to the Annual Review stated in section (b) above.

(e) Corporate Actions. If a corporate action involves one or more option classes in the Penny Program, all adjusted and unadjusted series of the option class will be included in the Penny Program. Any new option class added to the Penny Program under this provision will remain in the Penny Program for at least one full calendar year, after which it will be subject to the Annual Review stated in section (b) above.

(f) Delisted or Ineligible Option Classes. Any series in an option class participating in the Penny Program in which the underlying security has been delisted, or are identified by OCC as ineligible for opening customer transactions, will continue to quote pursuant to the terms of the Penny Program until all such options have expired.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098); amended Dec. 13, 2019 (SR-NASDAQ-2019-100); amended Jan. 29, 2020 (SR-NASDAQ-2020-006); amended Jun. 23, 2020 (SR-NASDAQ-2020-036).

Section 4. Entry and Display of Quotes

(a) All bids or offers made and accepted on NOM in accordance with the NOM Rules shall constitute binding contracts, subject to applicable requirements of the Rules of the Exchange and the Rules of the Clearing Corporation.

(b) Quotes are subject to the following requirements and conditions:

(1) Market Makers may generate and submit option quotations.

(2) The System shall time-stamp a quote which shall determine the time ranking of the quote for purposes of processing the quote.

(3) Market Makers may enter bids and/or offers in the form of a two-sided quote. Only one quote may be submitted at a time for an option series. Quotes may be submitted as a bulk message.

(i) A “bulk message” means a single electronic message submitted to the Exchange which may contain a specified number of quotations as designated by the Exchange. The bulk message, submitted via SQF, may enter, modify, or cancel quotes. Bulk messages are handled by the System in the same manner as it handles a single quote message.

(4) The System accepts quotes beginning at a time specified by the Exchange and communicated on the Exchange's web site.

(5) **Firm Quote**. When quotes in options on another market or markets are subject to relief from the firm quote requirement set forth in the SEC Quote Rule, orders and quotes will receive an automatic execution at or better than the NBBO based on the best bid or offer in markets whose quotes are not subject to such relief. Such determination may be made by way of notification from another market that its quotes are not firm or are unreliable; administrative message from the Option Price Reporting Authority ("OPRA"); quotes received from another market designated as "not firm" using the appropriate indicator; and/or telephonic or electronic inquiry to, and verification from, another market that its quotes are not firm. The Exchange shall maintain a record of each instance in which another exchange's quotes are excluded from the Exchange's calculation of NBBO, and shall notify such other exchange that its quotes have been so excluded. Where quotes in options on another market or markets previously subject to relief from the firm quote requirement set forth in the Quote Rule are no longer subject to such relief, such quotations will be included in the calculation of NBBO for such options. Such determination may be made by way of notification from another market that its quotes are firm; administrative message from OPRA; and/or telephonic or electronic inquiry to, and verification from, another market that its quotes are firm.

(6) **Trade-Through Compliance and Locked or Crossed Markets**. A quote will not be executed at a price that trades through another market or displayed at a price that would lock or cross another market. If, at the time of entry, a quote would cause a locked or crossed market violation or would cause a trade-through, violation, it will be re-priced to the current national best offer (for bids) or the current national best bid (for offers) as non-displayed and displayed at one minimum price variance above (for offers) or below (for bids) the national best price.

(7) The System automatically executes eligible quotes using the Exchange's displayed best bid and offer (“BBO”) or the Exchange’s non-displayed order book (“internal BBO”) if the best bid and/or offer on the Exchange has been repriced pursuant to Options 3, Section 5(d) below and subsection (6) above.

(8) Quotes submitted to the System are subject to following: risk protections provided for in Options 3, Section 15. Quotes submitted with minimum increments that are not valid pursuant to Options 3, Section 3 will be rounded up to the nearest minimum price variation for offers and rounded down to the nearest minimum price variation for bids.

(c) Quotes will be displayed in the System as described in Options 3, Section 23.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098); amended December 15, 2020 (SR-NASDAQ-2020-089), operative January 14, 2021; amended Jun. 27, 2023 (SR-NASDAQ-2023-018), operative Jul. 27, 2023.

Section 5. Entry and Display of Orders

(a) Participants can enter orders into the System, subject to the following requirements and conditions:

(1) Participants shall be permitted to transmit to the System multiple orders at single as well as multiple price levels.

(2) The System accepts orders beginning at a time specified by the Exchange and communicated on the Exchange's web site.

(3) The System shall time-stamp an order which shall determine the time ranking of the order for purposes of processing the order.

(4) Orders submitted to the System are subject to the following: risk protections within Options 3, Section 15 and the restrictions of order types within Options 3, Section 7. Orders may execute at multiple prices.

(5) Nullification by Mutual Agreement. Trades may be nullified if all parties participating in the trade agree to the nullification. In such case, one party must notify the Exchange and the Exchange promptly will disseminate the nullification to OPRA. It is considered conduct inconsistent with just and equitable principles of trade for a party to use the mutual adjustment process to circumvent any applicable Exchange rule, the Act or any of the rules and regulations thereunder.

(b) **NBBO Price Protection**. Orders, other than Intermarket Sweep Orders (as defined in Rule Options 5, Section 1(8) will not be automatically executed by the System at prices inferior to the NBBO (as defined in Options 5, Section 1(10)). There is no NBBO price protection with respect to any other market whose quotations are Non-Firm (as defined in Options 5, Section 1 (11)).

(c) The System automatically executes eligible orders using the Exchange's displayed best bid and offer ("BBO") or the

Exchange's non-displayed order book ("internal BBO") if the best bid and/or offer on the Exchange has been repriced pursuant to subsection (d) below and Options 3, Section 4(b)(6) above. The contract size associated with Displayed Price Improving Orders to buy (sell) are displayed at the MPV below (above) the price of the Price Improving Order. Price Improving Orders will not be permitted to create a locked or crossed market or to cause a trade through violation.

(d) **Trade-Through Compliance and Locked or Crossed Markets**. An order will not be executed at a price that trades through another market or displayed at a price that would lock or cross another market. An order that is designated by the member as routable will be routed in compliance with applicable Trade-Through and Locked and Crossed Markets restrictions. An order that is designated by a member as non-routable will be re-priced in order to comply with applicable Trade-Through and Locked and Crossed Markets restrictions. If, at the time of entry, an order that the entering party has elected not to make eligible for routing would cause a locked or crossed market violation or would cause a trade-through violation, it will be re-priced to the current national best offer (for bids) or the current national best bid (for offers) as non-displayed and displayed at one minimum price variance above (for offers) or below (for bids) the national best price.

(e) Orders will be displayed in the System as described in Options 3, Section 23.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098); amended November 30, 2020 (SR-NASDAQ-2020-083); amended Jun. 27, 2023 (SR-NASDAQ-2023-018), operative Jul. 27, 2023.

Section 6. Unusual Market Conditions

(a) NOM Options staff may determine that the level of trading activities or the existence of unusual market conditions is such that NOM Options is incapable of collecting, processing, and making available to quotation vendors the data for the option in a manner that accurately reflects the current state of the market on NOM Options. Upon making such a determination, NOM Regulation shall designate the market in such option to be "fast." When a market for an option is declared fast, NOM Regulation will provide notice that NOM Options quotations are not firm by appending an appropriate indicator to the NOM Options quotations.

(b) If a market is declared fast, Nasdaq Regulation shall have the power to do one or more of the following with respect to the class or classes involved:

(1) Suspend the minimum size requirement as permitted under Options 2, Section 5 (Market Maker Quotations) of these Rules.

(2) Take such other actions as are deemed in the interest of maintaining a fair and orderly market.

(c) Nasdaq Regulation will monitor the activity or conditions that caused a fast market to be declared, and shall review the condition of such market at least every thirty (30) minutes. Regular trading procedures shall be resumed when NOM determines that the conditions supporting a fast market declaration no longer exist. Nasdaq Regulation will provide notice that its quotations are once again firm by removing the indicator from the NOM quotations.

(d) If the conditions supporting a fast market declaration cannot be managed utilizing one or more of the procedures contained in this Rule, then Nasdaq Regulation, shall instruct Nasdaq operations to halt trading in the class or classes so affected.

(e) Nasdaq Regulation shall instruct Nasdaq operations to halt trading in all options whenever a market-wide trading halt is initiated on the New York Stock Exchange (commonly known as a "circuit breaker") in response to extraordinary market conditions.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098).

Section 7. Types of Orders and Order and Quote Protocols

The Exchange may determine to make certain order types and time-in-force, respectively, available on a class or System basis.

(a) The term "Order" shall mean a single order submitted to the System by a Participant that is eligible to submit such orders. The term "Order Type" shall mean the unique processing prescribed for designated orders that are eligible for entry into the System, and shall include:

(1) Cancel-Replacement Order is a single message for the immediate cancellation of a previously received order and the replacement of that order with a new order with new terms and conditions. If the previously placed order is already filled partially or in its entirety, the replacement order is automatically canceled or reduced by the number of contracts that were executed. The replacement order will retain the priority of the cancelled order, if the order posts to the Order Book, provided the price is not amended, and the size is not increased.

(2) "Limit Order" is an order to buy or sell an option at a specified price or better. A marketable limit order is a limit order to buy (sell) at or above (below) the best offer (bid) on the Exchange.

(3) "Minimum Quantity Order" is an order that requires that a specified minimum quantity of contracts be obtained, or the

order is cancelled. Minimum Quantity Orders are treated as having a time-in-force designation of Immediate or Cancel. Minimum Quantity Orders received prior to the opening cross or after market close will be rejected.

(4) "Market Order" is an order to buy or sell at the best price available at the time of execution. Participants can designate that their Market Orders not executed after a pre-established period of time, as established by the Exchange, will be cancelled back to the Participant, once an option series has opened for trading. Market Orders on the Order Book would be immediately cancelled if an options series halted, provided the Participant designated the cancellation of Market Orders.

(5) "Price Improving Order" is an order to buy or sell an option at a specified price at an increment smaller than the minimum price variation in the security. Price Improving Orders may be entered in increments as small as one cent. Price Improving Orders that are available for display shall be displayed at the minimum price variation in that security and shall be rounded up for sell orders and rounded down for buy orders.

(6) "On the Open Order" is an order with a designated time-in-force of "OPG". An On the Open Order will be executable only during the Opening Cross. If such order is not executed in its entirety during the Opening Cross, the order, or any unexecuted portion of such order, will be cancelled back to the entering participant.

(7) "Intermarket Sweep Order" or "ISO" is a Limit Order that meets the requirements of Options 5, Section 1(8). Orders submitted to the Exchange as ISO are not routable and will ignore the ABBO and trade at allowable prices on the Exchange. ISOs may be entered on the Order Book. ISOs may have any time-in-force designation and are handled within the System pursuant to Options 3, Section 10 and shall not be eligible for routing as set out in Options 5, Section 4. ISO Orders may not be submitted during the opening.

(A) Simultaneously with the routing of an ISO to the System, one or more additional limit orders, as necessary, are routed by the entering party to execute against the full displayed size of any protected bid or offer (as defined in Options 5, Section 1) in the case of a limit order to sell or buy with a price that is superior to the limit price of the limit order identified as an intermarket sweep order (as defined in Options 5, Section 1). These additional routed orders must be identified as ISOs.

(8) "All-or-None Order" is a Market or Limit Order which is to be executed in its entirety or not at all. All-or-None Orders are treated as having a time-in-force designation of Immediate or Cancel. All-or-None Orders received prior to the opening cross or after market close will be rejected.

(9) "Add Liquidity Order" is an order that will not remove liquidity from the System. Add Liquidity Orders are to be ranked and executed on the Exchange or cancelled, as appropriate, without routing away to another market. Add Liquidity Orders are evaluated at the time of entry with respect to locking or crossing other orders as follows: (i) if an Add Liquidity Order would lock or cross an order on the System, the order will be re-priced to $.01 below the current low offer (for bids) or above the current best bid (for offers) and displayed by the System at one minimum price increment below the current low offer (for bids) or above the current best bid (for offers); and (ii) if a Add Liquidity Order would not lock or cross an order on the System but would lock or cross the NBBO as reflected in the protected quotation of another market center, the order will be handled pursuant to Options 3, Section 5(b) – (d). Participants may choose to have their Add Liquidity Orders returned whenever the order would lock or cross the NBBO or be placed on the order book at a price other than its limit price. Add Liquidity Orders received prior to the Opening Process will be eligible for execution during the Opening Process and will be processed as per Options 3, Section 8. Add Liquidity Orders received after market close will be rejected. Add Liquidity Orders may not have a time-in-force designation of Good Til Cancelled or Immediate or Cancel.

(b) The term "Time in Force" or "TIF" shall mean the period of time that the System will hold an order for potential execution, and shall include:

(1) "On the Open Order" or "OPG" shall mean for orders so designated, that if after entry into the System, the order is not fully executed in its entirety during the Opening Cross, the order, or any unexecuted portion of such order, will be cancelled back to the entering participant. OPG orders may not route. This order type is not subject to any protections listed in Options 3, Section 15, except Size Limitation.

(2) "Immediate-Or-Cancel" or "IOC" is a Market Order or Limit Order to be executed in whole or in part upon receipt. Any portion not so executed is cancelled and/or routed pursuant to Participant's instruction. IOC orders may be entered through FIX, or SQF, provided that an IOC Order entered by a Market Maker through SQF is not subject to the Order Price Protection, the Market Order Spread Protection, or Size Limitation in Options 3, Section 15(a)(1), (a)(2), and (b)(2), respectively. IOC Orders entered through SQF may not route.

(3) "DAY" is an order entered with a TIF of “Day” that expires at the end of the day on which it was entered, if not executed. All orders by their terms are Day Orders unless otherwise specified. Day orders may be entered through FIX.

(4) "Good Til Cancelled" or "GTC" is an order entered with a TIF of “GTC” that, if not fully executed, will remain available for potential display and/or execution unless cancelled by the entering party, or until the option expires, whichever comes first. GTC Orders shall be available for entry from the time prior to market open specified by the Exchange until market close. GTC Orders may only be entered through FIX.

(c) Routing Strategies. Orders may be entered on the Exchange with a routing strategy of SEEK, SRCH or Do-Not-Route ("DNR") as provided in Options 5, Section 4 through FIX only.

(d) The term "Order Size" shall mean the number of contracts up to 999,999 associated with the Order.

(e) Entry and Display of Orders and Quotes. Participants may enter orders and quotes into the System as specified below.

(1) The Exchange offers Participants the following protocols for entering orders and quotes respectively:

(A) "**Financial Information eXchange**" or "**FIX**" is an interface that allows Participants and their Sponsored Customers to connect, send, and receive messages related to orders to and from the Exchange. Features include the following: (1) execution messages; (2) order messages; and (3) risk protection triggers and cancel notifications.

(B) "**Specialized Quote Feed**" or "**SQF**" is an interface that allows Market Makers to connect, send, and receive messages related to quotes and Immediate-or- Cancel Orders into and from the Exchange. Features include the following: (1) options symbol directory messages (e.g., underlying instruments); (2) system event messages (e.g., start of trading hours messages and start of opening); (3) trading action messages (e.g., halts and resumes); (4) execution messages; (5) quote messages; (6) Immediate-or-Cancel Order messages; (7) risk protection triggers and purge notifications; and (8) opening imbalance messages. The SQF Purge Interface only receives and notifies of purge requests from the Market Maker. Market Makers may only enter interest into SQF in their assigned options series. Immediate-or-Cancel Orders entered into SQF are not subject to the Order Price Protection, Market Order Spread Protection, or Size Limitation in Options 3, Section 15(a)(1) and (a)(2), and (b)(2), respectively.

(C) Reserved.

(D) "**Quote Using Orders**" or "**QUO**" is an interface that allows Market Makers to connect, send, and receive messages related to single-sided orders to and from the Exchange. Order Features include the following: (1) options symbol directory messages (e.g., underlying); (2) system event messages (e.g., start of trading hours messages and start of opening); (3) trading action messages (e.g., halts and resumes); (4) execution messages; (5) order messages; and (6) risk protection triggers and cancel notifications. Orders submitted by Market Makers over this interface are treated as quotes. Market Makers may only enter interest into QUO in their assigned options series. Orders entered into QUO are not subject to the Order Price Protection or Size Limitation in Options 3, Section 15(a)(1) and (b)(2), respectively.

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Section 8. Opening and Halt Cross

(a) Definitions. For the purposes of this Rule the term:

(1) "Imbalance" shall mean the number of contracts of Eligible Interest that may not be matched with other order contracts at a particular price at any given time.

(2) "Order Imbalance Indicator" shall mean a message disseminated by electronic means containing information about Eligible Interest and the price in penny increments at which such interest would execute at the time of dissemination. The Order Imbalance Indicator shall disseminate the following information:

(A) "Current Reference Price" shall mean an indication of what the opening cross price would be at a particular point in time.

(B) the number of contracts of Eligible Interest that are paired at the Current Reference Price;

(C) the size of any Imbalance; and

(D) the buy/sell direction of any Imbalance.

(3) "Nasdaq Opening Cross" shall mean the process for opening or resuming trading pursuant to this Rule and shall include the process for determining the price at which Eligible Interest shall be executed at the open of trading for the day, or the open of trading for a halted option, and the process for executing that Eligible Interest.

(4) "Eligible Interest" shall mean any quotation or any order that may be entered into the system and designated with a time-in-force of IOC (immediate-or-cancel), DAY (day order), GTC (good-till-cancelled), and OPG (On the Open Order). However, orders received via FIX protocol prior to the Nasdaq Opening Cross designated with a time-in-force of IOC will be rejected and shall not be considered eligible interest. Orders received via QUO and quotes received via SQF prior to the Nasdaq Opening Cross designated with a time-in-force of IOC will remain in-force through the opening and shall be cancelled immediately after the opening.

(5) "Market for the Underlying Security" shall mean either the primary listing market, the primary volume market (defined as the market with the most liquidity in that underlying security for the previous two calendar months), or the first market to open the underlying security, as determined by the Exchange on an issue-by-issue basis and announced to the membership on the Exchange's web site.

(6) "Valid Width National Best Bid or Offer" or "Valid Width NBBO" shall mean the combination of all away market quotes and any combination of NOM-registered Market Maker orders and quotes received over the QUO or SQF Protocols within a specified bid/ask differential as established and published by the Exchange. The Valid Width NBBO will be configurable by underlying, and tables with valid width differentials will be posted by Nasdaq on its website. Away markets that are crossed will void all Valid Width NBBO calculations. If any Market Maker orders or quotes on NOM are crossed internally, then all such orders and quotes will be excluded from the Valid Width NBBO calculation.

(7) "Away Best Bid or Offer" or "ABBO" shall mean the displayed National Best Bid or Offer not including the Exchange's Best Bid or Offer.

(b) Processing of NOM Opening Cross. For the opening of trading of options series traded on NOM, the Opening Cross shall occur at or after 9:30, if the dissemination of a regular market hours quote or trade (as determined by the Exchange) by the Market for the Underlying Security has occurred (or, in the case of index options, the Exchange has received the opening price of the underlying index). Or, in the case of a trading halt, the Opening Cross shall occur when trading resumes pursuant to Options 3, Section 9. Market hours trading shall commence or, in the case of a halted option, resume when the Nasdaq Opening Cross concludes.

In each case, the opening of trading or resumption of trading after a halt of options series will be dependent on the following criteria, provided the ABBO is not crossed:

(1) If there is a possible trade on NOM, a Valid Width NBBO must be present.

(2) If no trade is possible on NOM, then NOM will open dependent upon one of the following:

(A) A Valid Width NBBO is present;

(B) A certain number of other options exchanges (as determined by the Exchange) have disseminated a firm quote on OPRA; or

(C) A certain period of time (as determined by the Exchange) has elapsed.

(3) Nasdaq shall disseminate by electronic means an Order Imbalance Indicator every 5 seconds beginning between 9:20 and 9:28, or a shorter dissemination interval as established by the Exchange, with the default being set at 9:25 a.m. The start of dissemination, and a dissemination interval, shall be posted by Nasdaq on its website.

(4)

(A) The Nasdaq Opening Cross shall occur at the price that maximizes the number of contracts of Eligible Interest in NOM to be executed at or within the ABBO and within a defined range, as established and published by the Exchange, of the Valid Width NBBO.

(B) If more than one price exists under subparagraph (A), and there are no contracts that would remain unexecuted in the cross, the Nasdaq Opening Cross shall occur at the midpoint price, rounded to the penny closest to the price of the last execution in that series (and in the absence of a previous execution price, the price will round up, if necessary) of (1) the National Best Bid or the last offer on NOM against which contracts will be traded whichever is higher, and (2) the National Best Offer or the last bid on NOM against which contracts will be traded whichever is lower.

(C) If more than one price exists under subparagraph (A), and contracts would remain unexecuted in the cross, then the opening price will be the highest/lowest price, in the case of a buy/sell imbalance, at which the maximum number of contracts can trade which is equal to or within a defined range, as established and published by the Exchange, of the Valid

Width NBBO on the contra side of the imbalance that would not trade through the ABBO.

Regarding unexecuted contracts:

(i) If unexecuted contracts remain with a limit price that is equal to the opening price, then the remaining unexecuted contracts will be posted at the opening price, displayed one minimum price variation (MPV) away if displaying at the opening price would lock or cross the ABBO, with the contra-side NOM BBO reflected as firm;

(ii) If unexecuted contracts remain with a limit price that is through the opening price, and there is a contra side ABBO at the opening price, then the remaining unexecuted contracts will be posted at the opening price, displayed one minimum price variation (MPV) away, with the contra side NOM BBO reflected as firm and order handling of any remaining interest will be done in accordance with the routing and time-in-force instructions of such interest with the opening price representing the reference price set forth in Options 3, Section 10;

(iii) If unexecuted contracts remain with a limit price that is through the opening price, and there is no contra side ABBO at the opening price, then the remaining contracts will be posted at the opening price, with the contra-side NOM BBO reflected as non-firm; and

(iv) Order handling of any residual unexecuted contracts will be done in accordance with Options 3, Section 8(b)(7), with the opening price representing the reference price.

(5) If the Nasdaq Opening Cross price is selected and fewer than all contracts of Eligible Interest that are available in NOM would be executed, all Eligible Interest shall be executed at the Nasdaq Opening Cross price in accordance with the execution algorithm assigned to the associated underlying option.

(6) All Eligible Interest executed in the Nasdaq Opening Cross shall be executed at the Nasdaq Opening Cross price, and disseminated via a national market system plan. The Nasdaq Opening Cross price shall be the Nasdaq Official Opening Price for options that participate in the Nasdaq Opening Cross.

(7) If the conditions specified in (b) above have occurred, but there is an imbalance containing marketable routable interest, then one additional Order Imbalance Indicator will be disseminated, after which the cross will occur, executing the maximum number of contracts at the price provided for in subsection (b)(4) of this Rule. Any remaining Imbalance will be canceled, posted, or routed as per the directions on the customer's order.

(c) Absence of Opening Cross. If an Opening Cross in a symbol is not initiated before the conclusion of the Opening Order Cancel Timer, a firm may elect to have orders returned by providing written notification to the Exchange. These orders include all non GTC orders received over the FIX protocol. The Opening Order Cancel Timer represents a period of time since the underlying market has opened, and shall be established and disseminated by Nasdaq on its website.

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Section 9. Trading Halts

(a) *Halts*. Nasdaq Regulation may halt trading in any option contract in the interests of a fair and orderly market. The following are among the factors that shall be considered in determining whether the trading in an option contract should be halted:

(1) trading in the underlying security has been halted or suspended in the primary market.

(2) the opening of such underlying security has been delayed because of unusual circumstances.

(3) occurrence of an act of God or other event outside NOM's control;

(4) a Trading System technical failure or failures including, but not limited to, the failure of a part of the central processing system, a number of Options Participant trading applications, or the electrical power supply to the system itself or any related system; or;

(5) other unusual conditions or circumstances are present.

(6) Trading Pauses. Trading on the Exchange in any option contract shall be halted whenever trading in the underlying security has been paused by the primary listing market.

(A) Trading in such options contracts may be resumed upon a determination by the Exchange that the conditions that led to the pause are no longer present and that the interests of a fair and orderly market are best served by a resumption of trading, which in no circumstances will be before the Exchange has received notification that the underlying security has resumed trading on at least one exchange. If, however, trading has not been resumed on the primary listing market for the underlying security after ten minutes have passed since the underlying security was paused by the primary listing market, trading in such options contracts may be resumed by the Exchange if the underlying security has resumed trading on at least one exchange.

(B) During the halt, the Exchange will maintain existing orders on the book, accept orders, and process cancels, except that Market Maker interest entered pursuant to the obligations contained in Options 2, Section 4 is cancelled.

(b) In the event Nasdaq Regulation determines to halt trading, all trading in the effected class or classes of options shall be halted. NOM shall disseminate through its trading facilities and over OPRA a symbol with respect to classes of options indicating that trading has been halted, and a record of the time and duration of the halt shall be made available to vendors.

(c) No Options Participant or person associated with a Participant shall effect a trade on NOM in any options class in which trading has been halted under the provisions of this Rule during the time in which the halt remains in effect.

(d) Capitalized terms used in this paragraph shall have the same meaning as provided for in the Plan to Address Extraordinary

Market Volatility Pursuant to Rule 608 of Regulation NMS, as it may be amended from time to time ("LULD Plan"). During a Limit State and Straddle State in the Underlying NMS stock:

(1) The Exchange will not open an affected option.

(2) After the opening, the Exchange shall reject Market Orders, as defined in Options 3, Section 7, and shall notify Participants of the reason for such rejection.

(3) When evaluating whether a Market Maker has met the intra-day quoting obligations of Options 2, Section 5(d) in options overlying NMS stocks, the Exchange will not consider as part of the trading day the time that an NMS stock underlying an option was in a Limit State or Straddle State.

(4) Trades are not subject to an obvious error or catastrophic error review pursuant to Options 3, Sections 20(c) or (d). Nothing in this provision shall prevent trades from review on Exchange motion pursuant to Options 3, Section 20(c)(3), or subject to nullification or adjustment pursuant to Options 3, Section 20(e) - (j).

(e) The Exchange shall halt trading in all options whenever the equities markets initiate a market-wide trading halt commonly known as a circuit breaker in response to extraordinary market conditions.

(f) The Exchange shall nullify any transaction that occurs with respect to equity options (including options overlying ETFs), during a regulatory halt as declared by the primary listing market for the underlying security.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098).

Section 10. Order Book Allocation

(a) System Orders shall be executed through the Nasdaq Book Process set forth below:

(1) Execution Algorithm - The Exchange will determine to apply, for each option, one of the following execution algorithms described in paragraphs (A) or (B). The Exchange will issue an Options Alert specifying which execution algorithm will govern which options any time it is modified.

(A) Price/Time - The System shall execute trading interest within the System in price/time priority, meaning it will execute all trading interest at the best price level within the System before executing trading interest at the next best price. Within each price level, if there are two or more quotes or orders at the best price, trading interest will be executed in time priority.

(B) Size Pro-Rata - The System shall execute trading interest within the System in price priority, meaning it will execute all trading interest at the best price level within the System before executing trading interest at the next best price. Within each price level, if there are two or more quotes or orders at the best price, trading interest will be executed based on the size of each Participant's quote or order as a percentage of the total size of all orders and quotes resting at that price. If the result is not a whole number, it will be rounded down to the nearest whole number. If there are residual contracts remaining after rounding, such contracts will be distributed one contract at a time to the remaining Participants in time priority.

(C) Priority Overlays Applicable to Size Pro-Rata Execution Algorithm: the Exchange will apply the following designated Participant priority overlays, which are always in effect when the Size Pro-Rata execution algorithm is in effect.

(i) Public Customer Priority: the highest bid and lowest offer shall have priority except that Public Customer orders shall have priority over non-Public Customer orders at the same price. If there are two or more Public Customer orders for the same options series at the same price, priority shall be afforded to such Public Customer orders in the sequence in which they are received by the System.

(ii) Market Maker Priority: After all Public Customer orders have been fully executed, Options Market Makers shall have priority over all other Participant orders at the same price. If there are two or more Options Market Maker quotes and orders for the same options series at the same price, those shall be executed based on the Size Pro-Rata execution algorithm. If there are contracts remaining after all Market Maker interest has been fully executed, such contracts shall be executed based on the Size Pro-Rata execution algorithm.

(2) Decrementation - Upon execution, an order shall be reduced by an amount equal to the size of that execution.

(3) Price Improvement - any potential price improvement resulting from an execution in the System shall accrue to the party that is removing liquidity previously posted to the Book.

(4) Nasdaq-listed options that are the subject of a trading halt initiated pursuant to Options 3, Section 9, shall open for trading at the time specified by Nasdaq pursuant to Options 3, Section 9. When the System opens, orders shall be added to the book in time priority and executed as described above in subsection (1).

(5) **Zero-Bid Option Series.** In the case where the bid price for any options contract is $0.00, a market order accepted into the System to sell that series shall be considered a limit order to sell at a price equal to the minimum trading increment as

defined in Options 3, Section 3. Orders will be placed on the limit order book in the order in which they were received by the System. With respect to market orders to sell which are submitted prior to the Opening and persist after the Opening, those orders are posted at a price equal to the minimum trading increment as defined in Options 3, Section 3.

(6) Routing - All System orders entered by Participants directing or permitting routing to other market centers shall be routed for potential display and/or execution as set forth in Options 5, Section 4.

(7) *Market Access*. In addition to the Exchange Rules regarding routing to away trading centers, Nasdaq Execution Services, LLC, as defined in Options 5, Section 4(a)(ii)(A) has, pursuant to Rule 15c3-5 under the Act, implemented certain tests designed to mitigate risks associated with providing the Exchange's Members with access to such away trading centers. Pursuant to the policies and procedures developed by Nasdaq Execution Services to comply with Rule 15c3- 5, if an order or series of orders are deemed to be violative of applicable pre-trade requirements under Rule 15c3-5, the order will be rejected prior to routing and/or NES will seek to cancel the order if it has been routed.

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Section 11. Reserved

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098).

Section 12. Reserved

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098).

Section 13. Reserved.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098).

Section 14. Reserved

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098).

Section 15. Risk Protections

(a) The following are order risk protections on NOM:

(1) **Order Price Protection ("OPP").** OPP is a feature of the System that prevents Limit Orders at prices outside of pre-set standard limits from being accepted by the System. OPP applies to all options but does not apply to Intermarket Sweep Orders. OPP does not apply to orders entered through QUO.

(A) OPP is operational each trading day after the Opening Process until the close of trading, except during trading halts. OPP may be temporarily deactivated on an intra-day basis at the Exchange's discretion.

(B) OPP will reject incoming orders that exceed certain parameters according to the following algorithm:

(i) If the better of the NBBO or the internal market BBO (the "Reference BBO") on the contra-side of an incoming order is greater than $1.00, orders with a limit more than the greater of the below will cause the order to be rejected by the System upon receipt.

(A) 50% through such contra-side Reference BBO; or

(B) a configurable dollar amount not to exceed $1.00 through such contra-side Reference BBO as specified by the Exchange announced via an Options Trader Alert.

(ii) If the Reference BBO on the contra-side of an incoming order is less than or equal to $1.00, orders with a limit more than the greater of the below will cause the order to be rejected by the System upon receipt.

(A) 100% through such contra-side Reference BBO; or

(B) a configurable dollar amount not to exceed $1.00 through such contra-side Reference BBO as specified by the Exchange announced via an Options Trader Alert.

(2) **Market Order Spread Protection.** System Orders that are Market Orders will be rejected if the best of the NBBO and the internal market BBO (the "Reference BBO") is wider than a preset threshold at the time the order is received by the System. Market Order Spread Protection shall not apply to the Opening Process or during a trading halt. The Exchange may establish different thresholds for one or more series or classes of options.

(b) The following are order and quote risk protections on NOM:

(1) **Acceptable Trade Range.** The System will calculate an Acceptable Trade Range to limit the range of prices at which an order/quote will be allowed to execute. The Acceptable Trade Range is calculated by taking the reference price, plus or minus a value to be determined by the Exchange. (i.e., the reference price - (x) for sell orders/quotes and the reference price + (x) for buy orders/quotes). Upon receipt of a new order/quote, the reference price is the NBB or internal best bid for sell orders/quotes and the NBO or internal best offer for buy orders/quotes or the last price at which the order/quote is posted whichever is higher for a buy order/quote or lower for a sell order/quote.

(A) If an order/quote reaches the outer limit of the Acceptable Trade Range (the "Threshold Price") without being fully executed, it will be posted at the Threshold Price for a brief period, not to exceed one second ("Posting Period"), to allow more liquidity to be collected. Upon posting, either the current Threshold Price of the order/quote or an updated NBB for buy orders/quotes or the NBO for sell orders/quotes (whichever is higher for a buy order/quote lower for a sell order/quote) then becomes the reference price for calculating a new Acceptable Trade Range. If the order/quote remains unexecuted after the Posting Period, a New Acceptable Trade Range will be calculated and the order/quote will execute, route, or post up to the new Acceptable Trade Range Threshold Price, unless a Participants has requested that their orders be returned if posted at the outer limit of the Acceptable Trade Range (in which case, the order will be returned). This process will repeat until either (i) the order/quote is executed, cancelled, or posted at its limit price or (ii) the order/quote has been subject to a configurable number of instances of the Acceptable Trade Range as determined by the Exchange (in which case it will be returned).

(B) During the Posting Period, the Exchange will disseminate as a quotation: (i) the Threshold Price for the remaining size of the order/quote triggering the Acceptable Trade Range and (ii) on the opposite side of the market, the best price will be displayed using the "non-firm" indicator message in accordance with the specifications of the network processor. Following the Posting Period, the Exchange will return to a normal trading state and disseminate its best bid and offer.

(C) There will be three categories of options for Acceptable Trade Range: (1) Penny Interval Program Options trading in one cent increments for options trading at less than $3.00 and increments of five cents for options trading at $3.00 or more, (2) Penny Interval Program Options trading in one-cent increments for all prices, and (3) Non-Penny Interval Program Options.

(2) **Size Limitation.** There is a limit on the number of contracts an incoming order or quote may specify. Orders or quotes that exceed the maximum number of contracts are rejected. The maximum number of contracts, which shall not be less than 10,000, is established by the Exchange from time-to-time.

(c) The following are quote risk protections on NOM:

(1) **Anti-Internalization.** Quotes and orders entered by Options Market Makers will not be executed against quotes and orders entered on the opposite side of the market by the same market maker using the same Market Maker identifiers, or alternatively, if selected by the Participant, the same account number or Participant identifier. In such a case, the System will cancel the oldest of the quotes or orders back to the entering party prior to execution. This functionality shall not apply during an Opening Process.

(2) **Quotation Adjustments.**

(A) A NOM Market Maker may provide a specified time period and a specified percentage (as these terms are defined below) by which the Exchange's System will automatically remove a NOM Market Maker's quotes in all series of an underlying security submitted through designated NOM protocols, as specified by the Exchange, during a specified time period established by the NOM Market Maker not to exceeds 15 seconds ("Percentage-Based Specified Time Period"). For each series in an option, the System will determine: (i) the percentage that the number of contracts executed in that series represents relative to the number of contracts available at the time of execution plus the number of contracts executed in unexpired prior executions of each side in that series ("Series Percentage"); and (ii) the sum of the Series Percentage in the option issue ("Issue Percentage"). The System tracks and calculates the net impact of positions in the same option issue; long call percentages are offset by short call percentages, and long put percentages are offset by short put percentages in the Issue Percentage. If the Issue Percentage, rounded to the nearest integer, equals or exceeds a percentage established by a NOM Market Maker, not less than 1% ("Specified Percentage"), the System will automatically remove a NOM Market Maker's quotes in all series of the underlying security submitted through designated NOM protocols, as specified by the Exchange, during the Percentage-Based Specified Time Period ("Percentage-Based Threshold"). A Percentage-Based Specified Time Period will commence for an option every time an execution occurs in any series in such option and will continue until the System removes quotes as described in (iv) or (v) or the Percentage-Based Specified Time Period expires. A Percentage -Based Specified Time Period operates on a rolling basis among all series in an option in that there may be multiple Percentage-Based Specified Time Periods occurring simultaneously and such Percentage-Based Specified Time periods may overlap.

(B) A NOM Market Maker may provide a specified time period and a volume threshold by which the Exchange's System will automatically remove a NOM Market Maker's quotes in all series of an underlying security submitted through designated NOM protocols, as specified by the Exchange, during a specified time period established by the NOM Market Maker not to exceed 15 seconds ("Volume-Based Specified Time Period") when the NOM Market Maker executes a number of contracts which equals or exceeds the designated number of contracts in all options series in an underlying security ("Volume-Based Threshold"). The NOM Market Maker's Volume-Based Specified Time Period must be the same length of time as designated for purposes of the Percentage-Based Threshold. A Volume- Based Specified Time Period will commence for an option every time an execution occurs in any series in such option and will continue until the System removes quotes as described in (f)(iv) or (f)(v) or the Volume-Based Specified Time Period expires. The Volume-Based Specified Time Period operates on a rolling basis among all series in an option in that there may be multiple Volume-Based Specified Time Periods occurring simultaneously and such Volume-Based Specified Time periods may overlap.

(C) A NOM Market Maker or NOM Market Maker Group (multiple affiliated NOM Market Makers is a "Group" as defined by a NOM Participant and provided by such Participant to the Exchange) may provide a specified time period and number of allowable triggers by which the Exchange will automatically remove quotes in all options series in all underlying issues submitted through designated NOM protocols as specified by the Exchange ("Multi-Trigger Threshold"). During a specified time period established by the NOM Market Maker not to exceed 15 seconds ("Multi- Trigger Specified Time Period"), the number of times the System automatically removes the NOM Market Maker's or Group's quotes in all options series will be based on the number of triggers of the Percentage-Based Threshold, described in (f)(i) above, as well as the Volume-Based Threshold described in (f)(ii) above. Once the System determines that the number of triggers equals or exceeds a number established by either the NOM Market Maker or Group, during a Multi-Trigger Specified Time Period, the System will automatically remove all quotes in all options series in all underlying issues for that NOM Market Maker or Group. A trigger is defined as the event which causes the System to automatically remove quotes in all options series in an underlying issue. A Multi-Trigger Specified Time Period will commence after every trigger of either the Percentage-Based Threshold or the Volume-Based Threshold and will continue until the System removes quotes as described in (f)(iv) or the Multi-Trigger Specified Time Period expires. The System counts triggers within the Multi-Trigger Specified Time Period across all triggers for the NOM Market Maker or Group. A Multi-Trigger Specified Time Period operates on a rolling basis in that there may be multiple Multi-Trigger Specified Time Periods occurring simultaneously and such Multi-Trigger Specified Time Periods may overlap.

(D) The System will automatically remove quotes in all options in an underlying security when the Percentage-Based Threshold or Volume-Based Threshold has been reached. The System will automatically remove quotes in all options in all underlying securities when the Multi-Trigger Threshold has been reached. The System will send a Purge Notification Message to the NOM Market Maker for all affected options when the above thresholds have been reached.

(i) The Percentage-Based Threshold or Volume-Based Threshold and Multi-Trigger Threshold, are considered independently of each other.

(ii) Quotes will be automatically executed up to the NOM Market Maker's size regardless of whether the execution exceeds the Percentage-Based Threshold or Volume-Based Threshold.

(E) If a NOM Market Maker requests the System to remove quotes in all options series in an underlying issue, the System will automatically reset the Percentage-Based Threshold or Volume-Based Specified Time Period(s). The Multi-Trigger Specified Time Period(s) will not automatically reset for the Multi-Trigger Threshold.

(F) When the System removes quotes as a result of the Percentage-Based Threshold or Volume-Based Threshold, the NOM Market Maker must send a reentry indicator to re-enter the System. When the System removes quotes as a result of the Multi-Trigger Threshold, the System will not accept quotes through designated protocols until the NOM Market Maker manually requests re-entry. After quotes are removed as a result of the Multi-Trigger Threshold, Exchange staff must set a re-entry indicator in this case to enable re-entry, which will cause the System to send a Reentry Notification Message to the NOM Market Maker for all options series in all underlying issues. The Market Maker's Clearing Firm will be notified regarding the trigger and re-entry into the System after quotes are removed as a result of the Multi-Trigger Threshold, provided the Market Maker's Clearing Firm has requested to receive such notification.

(G) The Exchange will require NOM Market Makers to utilize either the Percentage-Based Threshold or the Volume-Based Threshold. The Multi-Trigger Threshold is optional.

(3) **Post-Only Quoting Protection**. NOM Market Makers may elect to configure their SQF or QUO protocols to prevent their quotes from removing liquidity (“Post-Only Quote Configuration”). A Post-Only Quote Configuration would re-price or cancel a NOM Market Maker’s quote that would otherwise lock or cross any resting order or quote on the NOM order book upon entry. When configured for re-price, quotes would be re-priced to $.01 below the current low offer (for bids) or above the current best bid (for offers) and displayed by the System at one minimum price increment below the current low offer (for bids) or above the current best bid (for offers). Notwithstanding the aforementioned, as is the case today, if a quote with a Post-Only Quote Configuration would not lock or cross an order or quote on the System but would lock or cross the NBBO, the quote will be

handled pursuant to Options 3, Section 4(b)(6). When configured for cancel, Participants will have their quotes returned whenever the quote would lock or cross the NBBO or be placed on the book at a price other than its limit price. This functionality shall not apply during an Opening Process.

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Section 16. Reserved

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098).

Section 17. Kill Switch

(a) Nasdaq Options Kill Switch is an optional tool that enables NOM Participants to initiate a message(s) to the System to promptly cancel orders. Participants may submit a request to the System to cancel orders based on certain identifier(s) on either a user or group level ("Identifier"). Permissible groups must reside within a single broker-dealer. The System will send an automated message to the NOM Participant when a Kill Switch request has been processed by the Exchange's System.

(i) If orders are cancelled by the NOM Participant utilizing the Kill Switch, it will result in the cancellation of all orders requested for the Identifier(s). The NOM Participant will be unable to enter additional orders for the affected Identifier(s) until re-entry has been enabled pursuant to section (a)(ii).

(ii) After orders are cancelled by the NOM Participant utilizing the Kill Switch, the NOM Participant will be unable to enter additional orders for the affected Identifier(s) until the NOM Participant has made a verbal request to the Exchange and Exchange staff has set a re-entry indicator to enable re-entry. Once enabled for re-entry, the System will send a Re-entry Notification Message to the NOM Participant. The applicable Clearing Participant also will be notified of the re-entry into the System after orders are cancelled as a result of the Kill Switch, provided the Clearing Participant has requested to receive such notification.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098); amended August 9, 2021 (SR-NASDAQ-2021-063), operative November 1, 2021.

Section 18. Detection of Loss of Communication

(a) When the SQF Port detects the loss of communication with a NOM Participant's Client Application because the Exchange's server does not receive a Heartbeat message for a certain time period ("nn" seconds), the Exchange will automatically logoff the NOM Participant's affected Client Application and automatically cancel all of the NOM Participant's open quotes. Quotes will be cancelled across all Client Applications that are associated with the same NOM Options Market Maker ID and underlying issues.

(1) A "Heartbeat" message is a communication which acts as a virtual pulse between the SQF or FIX Port and the Client Application. The Heartbeat message sent by the NOM Participant and subsequently received by the Exchange allows the SQF or FIX Port to continually monitor its connection with the NOM Participant.

(2) SQF Port is the Exchange's System component through which NOM Participants communicate their quotes from the Client Application.

(3) FIX Ports are the Exchange's System component through which NOM Participants communicate their orders from the Client Application.

(4) QUO is the Exchange's System component through which NOM Market Makers communicate orders from the Client Application.

(5) Client Application is the System component of the Participant through which the NOM Participant communicates its quotes and orders to the Exchange.

(b) When the FIX Port detects the loss of communication with a NOM Participant's Client Application because the Exchange's server does not receive a Heartbeat message for a certain time period ("nn" seconds), the Exchange will automatically logoff the NOM Participant's affected Client Application and, if the NOM Participant has elected to have its orders cancelled pursuant to Options 3, Section 18(e), automatically cancel all open orders posted.

(c) When the QUO Port detects the loss of communication with a NOM Market Maker's Client Application because the Exchange's server does not receive a Heartbeat message for a certain time period ("nn" seconds), the Exchange will automatically logoff the NOM Market Maker's affected Client Application and if the NOM Market Maker has elected to have its orders cancelled pursuant to Options 3, Section 18(f) automatically cancel all open orders posted.

(d) The default time period ("nn" seconds) for SQF Ports shall be fifteen (15) seconds. A NOM Market Maker may determine another time period of "nn" seconds of no technical connectivity, as required in paragraph (a) above, to trigger the disconnect and must communicate that time to the Exchange. The period of "nn" seconds may be modified to a number between one hundred (100) milliseconds and 99,999 milliseconds for SQF Ports prior to each session of connectivity to the Exchange. This feature is enabled for each NOM Market Maker and may not be disabled.

(A) If the NOM Market Maker systemically changes the default number of "nn" seconds, that new setting shall be in effect throughout the current session of connectivity and will then default back to fifteen seconds. The NOM Market Maker change the default setting systemically prior to each session of connectivity.

(B) If a time period is communicated to the Exchange by calling Exchange operations, the number of "nn" seconds selected by the NOM Market Maker shall persist for each subsequent session of connectivity until the NOM Market Maker either contacts Exchange operations and changes the setting or the NOM Market Maker systemically selects another time period prior to the next session of connectivity.

(e) The default period of "nn" seconds for FIX Ports shall be thirty (30) seconds for the disconnect and, if elected, the removal of orders. If the Participant elects to have its orders removed, in addition to the disconnect, the Participant may determine another time period of "nn" seconds of no technical connectivity, as required in paragraph (b) above, to trigger the disconnect and removal of orders and communicate that time to the Exchange. The period of "nn" seconds may be modified to a number between one (1) second and thirty (30) seconds for FIX Ports prior to each session of connectivity to the Exchange. This feature may be disabled for the removal of orders, however the Participant will be disconnected.

(A) If the Participant systemically changes the default number of "nn" seconds, that new setting shall be in effect throughout the current session of connectivity and will then default back to thirty seconds. The Participant may change the default setting systemically prior to each session of connectivity.

(B) If the time period is communicated to the Exchange by calling Exchange operations, the number of "nn" seconds selected by the Participant shall persist for each subsequent session of connectivity until the Participant either contacts Exchange operations and changes the setting or the Participant systemically selects another time period prior to the next session of connectivity.

(f) The default time period ("nn" seconds) for QUO Ports shall be fifteen (15) seconds for the disconnect and, if elected, the removal of orders. If the NOM Market Maker elects to have its orders removed, in addition to the disconnect, the NOM Market Maker may determine another time period of "nn" seconds of no technical connectivity, as required in paragraph (c) above, to trigger the disconnect and removal of orders and communicate that time to the Exchange. The period of "nn" seconds may be modified to a number between one hundred (100) milliseconds and 99,999 milliseconds for QUO Ports prior to each session of connectivity to the Exchange. This feature may be disabled for the removal of orders, however the NOM Market Maker will be disconnected.

(A) If the NOM Market Maker systemically changes the default number of "nn" seconds, that new setting shall be in effect throughout the current session of connectivity and will then default back to fifteen seconds. The NOM Market Maker may change the default setting systemically prior to each session of connectivity.

(B) If a time period is communicated to the Exchange by calling Exchange operations, the number of "nn" seconds selected by the NOM Market Maker shall persist for each subsequent session of connectivity until the NOM Market Maker either contacts Exchange operations and changes the setting or the NOM Market Maker systemically selects another time period prior to the next session of connectivity.

(g) The trigger for the SQF, FIX, and QUO Ports is event and Client Application specific. The automatic cancellation of the NOM Market Maker's quotes for SQF Ports and open orders for FIX and QUO Ports entered into the respective SQF, FIX, or QUO Ports via a particular Client Application will neither impact nor determine the treatment of the quotes of other NOM Market Makers entered into SQF Ports or orders of the same or other Participants entered into the FIX or QUO Ports via a separate and distinct Client Application.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098); amended December 15, 2020 (SR-NASDAQ-2020-089), operative January 14, 2021.

Section 19. Mass Cancellation of Trading Interest

An Options Participant may cancel any bids, offers, and orders in any series of options by requesting NOM Market Operations staff to effect such cancellation as per the instructions of the Options Participant.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098); amended Jan. 29, 2020 (SR-NASDAQ-2020-006).

Section 20. Nullification and Adjustment of Options Transactions including Obvious Errors

The Exchange may nullify a transaction or adjust the execution price of a transaction in accordance with this Rule. However, the determination as to whether a trade was executed at an erroneous price may be made by mutual agreement of the affected parties to a particular transaction. A trade may be nullified or adjusted on the terms that all parties to a particular transaction agree, provided, however, that such agreement to nullify or adjust must be conveyed to the Exchange in a manner prescribed by the Exchange prior to 8:30 a.m. Eastern Time on the first trading day following the execution. It is considered conduct inconsistent with just and equitable principles of trade for any Participant to use the mutual adjustment process to circumvent any applicable Exchange rule, the Act or any of the rules and regulations thereunder.

(a) *Definitions*.

(1) *Customer*. For purposes of this Rule, a Customer shall not include any broker-dealer or Professional.

(2) *Erroneous Sell/Buy Transaction*. For purposes of this Rule, an "erroneous sell transaction" is one in which the price received by the person selling the option is erroneously low, and an "erroneous buy transaction" is one in which the price paid by the person purchasing the option is erroneously high.

(3) *Official*. For purposes of this Rule, the term "Official" shall mean an Exchange staff member or contract employee designated as such by the Chief Regulatory Officer. A list of individual Officials shall be displayed on the Exchange website. The Chief Regulatory Officer shall maintain the list of Officials and update the website each time a name is added to, or deleted from, the list of Officials. In the event no Official is available to rule on a particular matter, the Chief Regulatory Officer or his/her designee shall rule on such matter.

(4) *Size Adjustment Modifier*. For purposes of this Rule, the Size Adjustment Modifier will be applied to individual transactions as follows:

Number of Contracts per Execution	**Adjustment - Theoretical Price (TP) Plus/Minus**
1-50	N/A
51-250	2 times adjustment amount
251-1000	2.5 times adjustment amount
1001 or more	3 times adjustment amount

(b) *Theoretical Price*. Upon receipt of a request for review and prior to any review of a transaction execution price, the "Theoretical Price" for the option must be determined. For purposes of this Rule, if the applicable option series is traded on at least one other options exchange, then the Theoretical Price of an option series is the last NBB just prior to the trade in question with respect to an erroneous sell transaction or the last NBO just prior to the trade in question with respect to an erroneous buy transaction unless one of the exceptions in sub-paragraphs (b)(1) through (3) below exists. For purposes of this provision, when a single order received by the Exchange is executed at multiple price levels, the last NBB and last NBO just prior to the trade in question would be the last NBB and last NBO just prior to Exchange's receipt of the order. The Exchange will rely on this paragraph (b) and Supplementary Material .03 of this Rule when determining Theoretical Price.

(1) *Transactions at the Open*. For a transaction occurring as part of the Opening Process (as defined in Options 3, Section 8) the Exchange will determine the Theoretical Price if there is no NBB or NBO for the affected series just prior to the erroneous transaction or if the bid/ask differential of the NBB and NBO just prior to the erroneous transaction is equal to or greater than the Minimum Amount set forth in the chart contained in sub-paragraph (b)(3) below. If the bid/ask differential is less than the Minimum Amount, the Theoretical Price is the NBB or NBO just prior to the erroneous transaction.

(2) *No Valid Quotes*. The Exchange will determine the Theoretical Price if there are no quotes or no valid quotes for comparison purposes. Quotes that are not valid are:

(A) all quotes in the applicable option series published at a time where the last NBB is higher than the last NBO in such series (a "crossed market");

(B) quotes published by the Exchange that were submitted by either party to the transaction in question;

(C) quotes published by another options exchange if either party to the transaction in question submitted the quotes in the series representing such options exchange's best bid or offer, provided that the Exchange will only consider quotes invalid on other options exchanges in up to twenty-five (25) total options series that the party identifies to the Exchange the quotes which were submitted by such party and published by other options exchanges; and

(D) quotes published by another options exchange against which the Exchange has declared self-help.

(3) *Wide Quotes*.

(A) The Exchange will determine the Theoretical Price if the bid/ask differential of the NBB and NBO for the affected series just prior to the erroneous transaction was equal to or greater than the Minimum Amount set forth below and there was a bid/ask differential less than the Minimum Amount during the 10 seconds prior to the transaction. If there was no bid/ask differential less than the Minimum Amount during the 10 seconds prior to the transaction then the Theoretical Price of an option series is the last NBB or NBO just prior to the transaction in question, as set forth in paragraph (b) above.

Bid Price at Time of Trade	**Minimum Amount**
Below $2.00	$0.75
$2.00 to $5.00	$1.25
Above $5.00 to $10.00	$1.50
Above $10.00 to $20.00	$2.50
Above $20.00 to $50.00	$3.00
Above $50.00 to $100.00	$4.50
Above $100.00	$6.00

(B) Customer Transactions Occurring Within 10 Seconds or Less After an Opening or Re-Opening:

(i) The Exchange will determine the Theoretical Price if the bid/ask differential of the NBB and NBO for the affected series just prior to the Customer’s erroneous transaction was equal to or greater than the Minimum Amount set forth in paragraph (A) above and there was a bid/ask differential less than the Minimum Amount during the 10 seconds prior to the transaction.

(ii) If there was no bid/ask differential less than the Minimum Amount during the 10 seconds prior to the transaction, then the Exchange will determine the Theoretical Price if the bid/ask differential of the NBB and NBO for the affected series just prior to the Customer’s erroneous transaction was equal to or greater than the Minimum Amount set forth in paragraph (A) above and there was a bid/ask differential less than the Minimum Amount anytime during the 10 seconds after an opening or re-opening.

(iii) If there was no bid/ask differential less than the Minimum Amount during the 10 seconds following an Opening or Re-Opening, then the Theoretical Price of an option series is the last NBB or NBO just prior to the Customer transaction in question, as set forth in paragraph (b) above.

(iv) Customer transactions occurring more than 10 seconds after an opening or re-opening are subject to paragraph (A) above.

(c) *Obvious Errors*.

(1) *Definition*. For purposes of this Rule, an Obvious Error will be deemed to have occurred when the Exchange receives a properly submitted filing where the execution price of a transaction is higher or lower than the Theoretical Price for the series by an amount equal to at least the amount shown below:

Theoretical Price	Minimum Amount
Below $2.00	$0.25
$2.00 to $5.00	$0.40
Above $5.00 to $10.00	$0.50
Above $10.00 to $20.00	$0.80
Above $20.00 to $50.00	$1.00
Above $50.00 to $100.00	$1.50
Above $100.00	$2.00

(2) *Time Deadline*. A party that believes that it participated in a transaction that was the result of an Obvious Error must notify the Exchange's Official in the manner specified from time to time by the Exchange in a notice distributed to Participants. Such notification must be received by the Exchange's Officials within the timeframes specified below:

(A) *Customer Orders*. For an execution of a Customer order, a filing must be received by the Exchange within thirty (30) minutes of the execution, subject to sub-paragraph (C) below; and

(B) *"Non-Customer" Orders*. For an execution of any order other than a Customer order, a filing must be received by the Exchange within fifteen (15) minutes of the execution, subject to sub-paragraph (C) below.

(C) *Linkage Trades*. Any other options exchange will have a total of forty-five (45) minutes for Customer orders and thirty (30) minutes for non-Customer orders, measured from the time of execution on the Exchange, to file with the Exchange for review of transactions routed to the Exchange from that options exchange and executed on the Exchange ("linkage trades"). This includes filings on behalf of another options exchange filed by a third-party routing broker if such third-party broker identifies the affected transactions as linkage trades. In order to facilitate timely reviews of linkage trades the Exchange will accept filings from either the other options exchange or, if applicable, the third-party routing broker that routed the applicable order(s). The additional fifteen (15) minutes provided with respect to linkage trades shall only apply to the extent the options exchange that originally received and routed the order to the Exchange itself received a timely filing from the entering participant (i.e., within 30 minutes if a Customer order or 15 minutes if a non- Customer order).

(3) *Acting on Own Motion*. The President or designee thereof, who is an officer of the Exchange (collectively "Exchange officer") may review a transaction believed to be erroneous on his/her own motion in the interest of maintaining a fair and orderly market and for the protection of investors. A transaction reviewed pursuant to this paragraph may be nullified or adjusted only if it is determined by the Exchange officer that the transaction is erroneous in accordance with the provisions of this Rule, provided that the time deadlines of sub-paragraph (c)(2) above shall not apply. The Exchange officer shall act as soon as possible after becoming aware of the transaction, and ordinarily would be expected to act on the same day that the transaction occurred. In no event shall the Exchange officer act later than 8:30 a.m. Eastern Time on the next trading day following the date of the transaction in question. A party affected by a determination to nullify or adjust a transaction pursuant to this provision may appeal such determination in accordance with paragraph (k) below; however, a determination by an Exchange officer not to review a transaction or determination not to nullify or adjust a transaction for which a review was conducted on an Exchange officer's own motion is not appealable. If a transaction is reviewed and a determination is rendered pursuant to another provision of this Rule, no additional relief may be granted under this provision.

(4) *Adjust or Bust*. If it is determined that an Obvious Error has occurred, the Exchange shall take one of the actions listed below. Upon taking final action, the Exchange shall promptly notify both parties to the trade electronically or via telephone.

(A) *Non-Customer Transactions*. Where neither party to the transaction is a Customer, the execution price of the transaction will be adjusted by the Official pursuant to the table below. Any non-Customer Obvious Error exceeding 50 contracts will be subject to the Size Adjustment Modifier defined in sub-paragraph (a)(4) above.

Theoretical Price (TP)	Buy Transaction Adjustment - TP Plus	Sell Transaction Adjustment - TP Minus
Below $3.00	$0.15	$0.15
At or above $3.00	$0.30	$0.30

(B) *Customer Transactions*. Where at least one party to the Obvious Error is a Customer, the execution price of the transaction will be adjusted by the Official pursuant to the table immediately above. Any Customer Obvious Error exceeding 50 contracts will be subject to the Size Adjustment Modifier defined in sub-paragraph (a)(4) above. However, if such adjustment(s) would result in an execution price higher (for buy transactions) or lower (for sell transactions) than the Customer's limit price, the trade will be nullified, subject to subparagraph (C) below.

(C) If any Participant submits requests to the Exchange for review of transactions pursuant to this Rule, and in aggregate that Participant has 200 or more Customer transactions under review concurrently and the orders resulting in such transactions were submitted during the course of 2 minutes or less, where at least one party to the Obvious Error is a non-Customer, the Exchange will apply the non- Customer adjustment criteria set forth in sub-paragraph (A) above to such transactions.

(d) *Catastrophic Errors*.

(1) *Definition*. For purposes of this Rule, a Catastrophic Error will be deemed to have occurred when the execution price of a transaction is higher or lower than the Theoretical Price for the series by an amount equal to at least the amount shown below:

Theoretical Price	Minimum Amount
Below $2.00	$0.50
$2.00 to $5.00	$1.00
Above $5.00 to $10.00	$1.50
Above $10.00 to $20.00	$2.00
Above $20.00 to $50.00	$2.50
Above $50.00 to $100.00	$3.00
Above $100.00	$4.00

(2) *Time Deadline*. A party that believes that it participated in a transaction that was the result of a Catastrophic Error must notify the Exchange's Officials in the manner specified from time to time by the Exchange on its website. Such notification must be received by the Exchange's Officials by 8:30 a.m. Eastern Time on the first trading day following the execution. For transactions in an expiring options series that take place on an expiration day, a party must notify the Exchange's Officials within 45 minutes after the close of trading that same day.

(3) *Adjust or Bust*. If it is determined that a Catastrophic Error has occurred, the Exchange shall take action as set forth below. Upon taking final action, the Exchange shall promptly notify both parties to the trade electronically or via telephone. In

the event of a Catastrophic Error, the execution price of the transaction will be adjusted by the Official pursuant to the table below. Any Customer order subject to this sub-paragraph will be nullified if the adjustment would result in an execution price higher (for buy transactions) or lower (for sell transactions) than the Customer's limit price.

Theoretical Price (TP)	**Buy Transaction Adjustment - TP Plus**	**Sell Transaction Adjustment - TP Minus**
Below $2.00	$0.50	$0.50
$2.00 to $5.00	$1.00	$1.00
Above $5.00 to $10.00	$1.50	$1.50
Above $10.00 to $20.00	$2.00	$2.00
Above $20.00 to $50.00	$2.50	$2.50
Above $50.00 to $100.00	$3.00	$3.00
Above $100.00	$4.00	$4.00

(e) *Significant Market Events*.

(1) *Definition*. For purposes of this Rule, a Significant Market Event will be deemed to have occurred when: criterion (A) below is met or exceeded or the sum of all applicable event statistics, where each is expressed as a percentage of the relevant threshold in criteria (A) through (D) below, is greater than or equal to 150% and 75% or more of at least one category is reached, provided that no single category can contribute more than 100% to the sum and any category contributing more than 100% will be rounded down to 100%. All criteria set forth below will be measured in aggregate across all exchanges.

(A) Transactions that are potentially erroneous would result in a total Worst-Case Adjustment Penalty of $30,000,000, where the Worst- Case Adjustment Penalty is computed as the sum, across all potentially erroneous trades, of:

(i) $0.30 (i.e., the largest Transaction Adjustment value listed in sub-paragraph (e)(3)(A) below); times

(ii) the contract multiplier for each traded contract; times

(iii) the number of contracts for each trade; times

(iv) the appropriate Size Adjustment Modifier for each trade, if any, as defined in sub-paragraph (e)(3)(A) below.

(B) Transactions involving 500,000 options contracts are potentially erroneous;

(C) Transactions with a notional value (i.e., number of contracts traded multiplied by the option premium multiplied by the contract multiplier) of $100,000,000 are potentially erroneous;

(D) 10,000 transactions are potentially erroneous.

(2) *Coordination with Other Options Exchanges*. To ensure consistent application across options exchanges, in the event of a suspected Significant Market Event, the Exchange shall initiate a coordinated review of potentially erroneous transactions with all other affected options exchanges to determine the full scope of the event. When this paragraph is invoked, the Exchange will promptly coordinate with the other options exchanges to determine the appropriate review period as well as select one or more specific points in time prior to the transactions in question and use one or more specific points in time to determine Theoretical Price. Other than the selected points in time, if applicable, the Exchange will determine Theoretical Price in accordance with paragraph (b) above.

(3) *Adjust or Bust*. If it is determined that a Significant Market Event has occurred then, using the parameters agreed as set forth in sub-paragraph (e)(2) above, if applicable, an Official will determine whether any or all transactions under review qualify

as Obvious Errors. The Exchange shall take one of the actions listed below with respect to all transactions that qualify as Obvious Errors pursuant to sub-paragraph (c)(1) above. Upon taking final action, the Exchange shall promptly notify both parties to the trade electronically or via telephone.

(A) The execution price of each affected transaction will be adjusted by an Official to the price provided below unless both parties agree to adjust the transaction to a different price or agree to bust the trade. In the context of a Significant Market Event, any error exceeding 50 contracts will be subject to the Size Adjustment Modifier defined in subparagraph (a)(4) above.

Theoretical Price (TP)	Buy Transaction Adjustment - TP Plus	Sell Transaction Adjustment - TP Minus
Below $3.00	$0.15	$0.15
At or above $3.00	$0.30	$0.30

(B) Where at least one party to the transaction is a Customer, the trade will be nullified if the adjustment would result in an execution price higher (for buy transactions) or lower (for sell transactions) than the Customer's limit price.

(4) *Nullification of Transactions*. If the Exchange, in consultation with other options exchanges, determines that timely adjustment is not feasible due to the extraordinary nature of the situation, then the Exchange will nullify some or all transactions arising out of the Significant Market Event during the review period selected by the Exchange and other options exchanges consistent with this paragraph. To the extent the Exchange, in consultation with other options exchanges, determines to nullify less than all transactions arising out of the Significant Market Event, those transactions subject to nullification will be selected based upon objective criteria with a view toward maintaining a fair and orderly market and the protection of investors and the public interest.

(5) *Final Rulings*. With respect to rulings made pursuant to this paragraph, the number of affected transactions is such that immediate finality is necessary to maintain a fair and orderly market and to protect investors and the public interest. Accordingly, rulings by the Exchange pursuant to this paragraph are non-appealable.

(f) *Trading Halts*. The Exchange shall nullify any transaction that occurs during a trading halt in the affected option on the Exchange pursuant to Supplementary Material .02 of this Rule.

(g) *Erroneous Print in Underlying*. A trade resulting from an erroneous print(s) disseminated by the underlying market that is later nullified by that underlying market shall be adjusted or busted as set forth in sub-paragraph (c)(4) of this Rule, provided a party notifies the Exchange's Officials in a timely manner as set forth below. For purposes of this paragraph, a trade resulting from an erroneous print(s) shall mean any options trade executed during a period of time for which one or more executions in the underlying security are nullified and for one second thereafter. If a party believes that it participated in an erroneous transaction resulting from an erroneous print(s) pursuant to this paragraph it must notify the Exchange's Officials within the timeframes set forth in sub-paragraph (c)(2) above, with the allowed notification timeframe commencing at the time of notification by the underlying market(s) of nullification of transactions in the underlying security. If multiple underlying markets nullify trades in the underlying security, the allowed notification timeframe will commence at the time of the first market's notification.

(h) *Erroneous Quote in Underlying*. A trade resulting from an erroneous quote(s) in the underlying security shall be adjusted or busted as set forth in subparagraph (c)(4) this Rule, provided a party notifies the Exchange's Officials in a timely manner as set forth below. An erroneous quote occurs when the underlying security has a width of at least $1.00 and has a width at least five times greater than the average quote width for such underlying security during the time period encompassing two minutes before and after the dissemination of such quote. For purposes of this paragraph, the average quote width shall be determined by adding the quote widths of sample quotations at regular 15-second intervals during the four-minute time period referenced above (excluding the quote(s) in question) and dividing by the number of quotes during such time period (excluding the quote(s) in question). If a party believes that it participated in an erroneous transaction resulting from an erroneous quote(s) pursuant to this paragraph it must notify the Exchange's Officials in accordance with sub-paragraph (c)(2) above.

(i) *Linkage Trades*. If the Exchange routes an order pursuant to the Plan (as defined in Options 5, Section 1(16)) that results in a transaction on another options exchange (a "Linkage Trade") and such options exchange subsequently nullifies or adjusts the Linkage Trade pursuant to its rules, the Exchange will perform all actions necessary to complete the nullification or adjustment of the Linkage Trade.

(j) *Verifiable Disruption or Malfunction of Exchange Systems*. Parties to a trade may have a trade nullified or its price adjusted if it resulted from a verifiable disruption or malfunction of Exchange execution, dissemination, or communication systems that caused a quote/order to trade in excess of its disseminated size (e.g. a quote/order that is frozen, because of an Exchange system error, and repeatedly traded). Parties to a trade may have a trade nullified or its price adjusted if it resulted from a verifiable disruption or malfunction of an Exchange dissemination or communication system that prevented a Member from updating or canceling a quote/order for which the Member is responsible where there is Exchange documentation providing that the Member sought to update or cancel the quote/order.

(k) *Appeals*. A party to a transaction affected by a decision made under this section may appeal that decision to the Exchange Review Council. An appeal must be made in writing, and must be received by NOM within thirty (30) minutes after the person making the appeal is given the notification of the determination being appealed, except that if such notification is made after 3:30 p.m. Eastern Time, either party has until 9:30 a.m. Eastern Time on the next trading day to request a review. The Exchange Review Council panel shall review the facts and render a decision on the day of the transaction, or the next trade day in the case where a request is properly made after 3:30 p.m. on the day of the transaction or where the request is properly made the next trade day. The Exchange Review Council may review any decision appealed, including whether a complaint was timely, whether an Obvious Error or Catastrophic Error occurred, whether the correct Theoretical Price was used, and whether an adjustment was made at the correct price.

(1) A Nasdaq Review Council panel will be comprised minimally of representatives of one (1) member engaged in Market Making and two (2) industry representatives not engaged in Market Making. At no time should a review panel have more than 50% members engaged in Market Making.

(2) The Nasdaq Review Council, pursuant to the standards set forth in this Rule, shall affirm, modify, or reverse the determination.

(3) The decision of the Nasdaq Review Council pursuant to an appeal, or a determination by a Nasdaq Official that is not appealed, shall be final and binding upon all parties and shall constitute final Nasdaq action on the matter in issue. Any determination by a Nasdaq Official or the Nasdaq Review Council shall be rendered without prejudice as to the rights of the parties to the transaction to submit their dispute to arbitration.

(4) The party initiating the appeal shall be assessed a $500.00 fee if the Nasdaq Review Council upholds the decision of the Nasdaq Official. In addition, in instances where Nasdaq, on behalf of an Options Participant, requests a determination by another market center that a transaction is clearly erroneous, Nasdaq will pass any resulting charges through to the relevant Options Participant.

Supplementary Material to Options 3, Section 20

.01 For the purposes of this Rule, to the extent the provisions of this Rule would result in the Exchange applying an adjustment of an erroneous sell transaction to a price lower than the execution price or an erroneous buy transaction to a price higher than the execution price, the Exchange will not adjust or nullify the transaction, but rather, the execution price will stand.

.02 Trading Halts. Trades on the Exchange will be nullified when:

(A) The trade occurred during a trading halt in the affected option on the Exchange;

(B) Respecting equity options (including options overlying ETFs), the trade occurred during a regulatory halt as declared by the primary market for the underlying security; or

(C) Respecting index options, the trade occurred during a trading halt on the primary market in underlying securities representing more than 10 percent of the current index value for stock index options.

.03 Exchange Determining Theoretical Price. For purposes of this Rule, when the Exchange must determine Theoretical Price pursuant to sub-paragraphs (b)(1)-(3) of this Rule (i.e., at the open, when there are no valid quotes or when there is a wide quote), then the Exchange will determine Theoretical Price as follows.

(A) The Exchange will request Theoretical Price from the third party vendor defined in paragraph (d) below ("TP Provider") to which the Exchange and all other options exchanges have subscribed. The Exchange will apply the Theoretical Price provided by the TP Provider, except as otherwise described below.

(B) To the extent an Official of the Exchange believes that the Theoretical Price provided by the TP Provider is fundamentally incorrect and cannot be used consistent with the maintenance of a fair and orderly market, the Official shall contact the TP Provider to notify the TP Provider of the reason the Official believes such Theoretical Price is inaccurate and to request a review and correction of the calculated Theoretical Price. The Exchange shall also promptly provide electronic notice to other options exchanges that the TP Provider has been contacted consistent with this paragraph and include a brief explanation of the reason for the request.

(C) An Official of the Exchange may determine the Theoretical Price if the TP Provider has experienced a systems issue that has rendered its services unavailable to accurately calculate Theoretical Price and such issue cannot be corrected in a timely manner.

(D) The current TP Provider to which the Exchange and all other options exchanges have subscribed is: CBOE

Livevol, LLC. Neither the Exchange, the TP Provider, nor any affiliate of the TP Provider (the TP Provider and its affiliates are referred to collectively as the "TP Provider"), makes any warranty, express or implied, as to the results to be obtained by any person or entity from the use of the TP Provider pursuant to this Supplementary Material .03. The TP Provider does not guarantee the accuracy or completeness of the calculated Theoretical Price. The TP Provider disclaims all warranties of merchantability or fitness for a particular purpose or use with respect to such Theoretical Price. Neither the Exchange nor the TP Provider shall have any liability for any damages, claims, losses (including any indirect or consequential losses), expenses, or delays, whether direct or indirect, foreseen or unforeseen, suffered by any person arising out of any circumstance or occurrence relating to the use of such Theoretical Price or arising out of any errors or delays in calculating such Theoretical Price.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098); amended Mar. 8, 2022 (SR-NASDAQ-2022-023), operative Apr. 7, 2022; amended Jan. 26, 2022 (SR-NASDAQ-2022-010), operative Jul. 1, 2022.

Section 21. Access to and Conduct on NOM

(a) *Access to NOM*. Unless otherwise provided in the Rules, no one but a Participant or a person associated with a Participant shall effect any NOM Transactions. The Exchange may share any Participant-designated risk settings in the Trading System with the Clearing Participant that clears transactions on behalf of the Participant.

(b) *NOM Conduct.* Participants and persons employed by or associated with any Participant, while using the facilities of NOM, shall not engage in conduct: (i) inconsistent with the maintenance of a fair and orderly market; (ii) apt to impair public confidence in the operations of the Exchange; or (iii) inconsistent with the ordinary and efficient conduct of business. Activities that shall violate the provisions of this paragraph (b) include, but are not limited to, the following:

(1) failure of a Market Maker to provide quotations in accordance with Options 2, Section 5 of these Rules;

(2) failure of a Market Maker to bid or offer within the ranges specified by Options 2, Section 4 of these Rules;

(3) failure of a Participant to supervise a person employed by or associated with such Participant adequately to ensure that person's compliance with this paragraph (b).

(4) failure to maintain adequate procedures and controls that permit the Options Participant to effectively monitor and supervise the entry of orders by users to prevent the prohibited practices set forth in this paragraph (b) and Options 9, Section 2 of these Rules;

(5) failure to abide by a determination of Nasdaq Regulation;

(6) effecting transactions that are manipulative as provided in General 9, Section 1 or any other rule of the Exchange;

(7) refusal to provide information requested by Nasdaq Regulation; and

(8) failure to abide by the provisions of the sections of this Options 3, Section 22 related to limitations on orders.

(c) Subject to the Rules, NOM will provide access to the Trading System to Options Participants in good standing that wish to conduct business on NOM.

(d) Pursuant to the Rules and the arrangements referred to in this Rule, Nasdaq Regulation may:

(1) suspend an Options Participant's access to the Trading System following a warning which may be made in writing or verbally (and subsequently confirmed in writing); or

(2) terminate an Options Participant's access to the Trading System by notice in writing.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098).

Section 22. Limitations on Order Entry

(a) **Limitations on Principal Transactions.** With respect to orders routed to NOM, Options Participants may not execute as principal orders they represent as agent unless (i) agency orders are first exposed on NOM for at least one (1) second or (ii) the Options Participant has been bidding or offering on NOM for at least one (1) second prior to receiving an agency order that is executable against such bid or offer. With respect to Price Improving Orders, the exposure requirement of subsection (i) is satisfied if the displayable portion of the order is displayed at its displayable price for one second.

(1) This Rule prevents Options Participants from executing agency orders to increase its economic gain from trading against the order without first giving other trading interest on NOM an opportunity to either trade with the agency order or to trade at the execution price when the Options Participant was already bidding or offering on the book. However, the Exchange recognizes that it may be possible for an Options Participant to establish a relationship with a customer or other person to

deny agency orders the opportunity to interact on NOM and to realize similar economic benefits as it would achieve by executing agency orders as principal. It will be a violation of this Rule for an Options Participant to be a party to any arrangement designed to circumvent this Rule by providing an opportunity for a customer to regularly execute against agency orders handled by the Options Participant immediately upon their entry into NOM.

(b) **Limit Orders.** Options Participants shall not enter Public Customer limit orders into the System in the same options series, for the account or accounts of the same or related beneficial owners, in such a manner that the beneficial owner(s) effectively is operating as a market maker by holding itself out as willing to buy and sell such options contract on a regular or continuous basis. In determining whether a beneficial owner effectively is operating as a market maker, the Exchange will consider, among other things: the simultaneous or near-simultaneous entry of limit orders to buy and sell the same options contract and the entry of multiple limit orders at different prices in the same options series.

(c) **Limitations on Solicitation Orders.** An Options Participant may not execute an order it represents as agent on NOM against orders solicited from members and non-member broker-dealers, whether such solicited orders are entered into NOM directly by the Options Participant or by the solicited party (either directly or through another Options Participant), if the Options Participant fails to expose orders on NOM as required by this Rule.

(d) Prior to or after submitting an order to NOM, an Options Participant cannot inform another Options Participant or any other third party of any of the terms of the order for purposes of violating this Rule.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098).

Section 23. Data Feeds and Trade Information

(a) The following data feeds are offered by NOM:

(1) Nasdaq ITCH to Trade Options (ITTO) is a data feed that provides full order and quote depth information for individual orders and quotes on the NOM book and last sale information for trades executed on NOM. The data provided for each options series includes the symbols (series and underlying security), put or call indicator, expiration date, the strike price of the series, and whether the option series is available for trading on NOM and identifies if the series is available for closing transactions only. The feed also provides order imbalances on opening/reopening (size of matched contracts and size of the imbalance).

(2) Best of Nasdaq Options (BONO) is a data feed that provides the NOM Best Bid and Offer and last sale information for trades executed on NOM. The data provided for each options series includes the symbols (series and underlying security), put or call indicator, expiration date, the strike price of the series, and whether the option series is available for trading on NOM and identifies if the series is available for closing transactions only.

(b) The following order and execution information is available to Participants:

(1) **Clearing Trade Interface ("CTI")** is a real-time clearing trade update message that is sent to a Participant after an execution has occurred and contains trade details specific to that Participant. The information includes, among other things, the following: (i) The Clearing Member Trade Agreement or "CMTA" or The Options Clearing Corporation or "OCC" number; (ii) Exchange badge or house number; (iii) the Exchange internal firm identifier; (iv) an indicator which will distinguish electronic and non-electronically delivered orders; (v) liquidity indicators and transaction type for billing purposes; and (vi) capacity.

(2) **TradeInfo,** a user interface, permits a Participant to: (i) search all orders submitted in a particular security or all orders of a particular type, regardless of their status (open, canceled, executed, etc.); (ii) cancellation of open orders at the order, port or firm mnemonic level; (iii) a view of orders and executions; and (iv) download of orders and executions for recordkeeping purposes.

(3) **FIX DROP** is a real-time order and execution update message that is sent to a Participant after an order been received/modified or an execution has occurred and contains trade details specific to that Participant. The information includes, among other things, the following: (i) executions; (ii) cancellations; (iii) modifications to an existing order and (iv) busts or post-trade corrections.

(4) **QUO DROP** provides real-time information regarding orders entered through QUO and the execution of those orders. The QUO DROP data feed is not a trading interface and does not accept order messages.

(c) The following trade information is available on an End of Day, Intra-Day, and historical basis:

(1) **Nasdaq Options Trade Outline** provides aggregate quantity and volume information for trades on the Exchange for all series during a trading session. Information is provided in the following categories: (i) total exchange volume for Intra-Day information and total exchange and industry volume for End of Day information for each reported series; (ii) open interest for the series; (iii) aggregate quantity of trades and aggregate trade volume effected to open a position, characterized by origin type (Customer, Broker-Dealer, Market Maker, Firm, and Professional), and for Customers and Professionals, further subdivided by trade size buckets; and (iv) aggregate quantity of trades and aggregate trade volume effected to close a position, characterized by origin type (Customer, Broker-Dealer, Market Maker, Firm, and Professional), and for Customers

and Professionals, further subdivided by trade size buckets.

Nasdaq Options Trade Outline End of Day will also provide opening buy, closing buy, opening sell and closing sell information, which shall include option first trade price, option high trade price, option low trade price, and option last trade price.

End of Day information will be available the next business day. Intra-Day information is updated at 10-minute intervals over the course of the trading day. Historical information will be available upon request.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098); amended November 30, 2020 (SR-NASDAQ-2020-083); amended Sep. 6, 2024 (SR-NASDAQ-2024-055).

Section 24. Transaction Price Binding

The price at which an order is executed shall be binding notwithstanding that an erroneous report in respect thereto may have been rendered, or no report rendered. A report shall not be binding if an order was not actually executed but was reported to have been executed in error.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098).

Section 25. Anonymity

(a) Orders and quotes entered into the System will be displayed anonymously and, as such, will trade anonymously. Transaction reports produced by the System (i.e. the Clearing Trade Interface and the Trade Details report) will indicate the details of the transactions, and will include contra party identities.

(b) Nasdaq shall reveal a Participant's identity in the following circumstances:

(1) when a registered clearing agency ceases to act for a participant, or the Participant's clearing firm, and the registered clearing agency determines not to guarantee the settlement of the Participant's trades;

(2) for regulatory purposes or to comply with an order of an arbitrator or court;

(3) if both Participants to the transaction consent;

(4) Unless otherwise instructed by a Member, Nasdaq will reveal to a member, no later than the end of the day on the date an anonymous trade was executed, when the member's Order has been decremented by another Order submitted by that same member.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098); amended Aug. 20, 2024 (SR-NASDAQ-2024-048), operative Nov. 1, 2024.

Section 26. Message Traffic Mitigation

(a) The Exchange shall disseminate an updated bid and offer price, together with the size associated with such bid and offer, when:

(1) the Exchange's disseminated bid or offer price increases or decreases;

(2) the size associated with the Exchange's disseminated bid or offer decreases; or

(3) the size associated with the Exchange’s bid (offer) increases by an amount greater than or equal to a percentage (never to exceed 20%) of the size associated with previously disseminated bid (offer). Such percentage, which shall never exceed 20%, will be determined by the Exchange on an issue-by-issue basis and posted on the Exchange’s website.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098); amended September 14, 2021 (SR-NASDAQ-2021-074).

Section 27. Limitation of Liability

(a) Except as provided for in Equity 2, Section 17, NOM and its affiliates shall not be liable for any losses, damages, or other claims arising out of the NOM Trading System or its use. Any losses, damages, or other claims, related to a failure of the NOM Trading System to deliver, display, transmit, execute, compare, submit for clearance and settlement, adjust, retain priority for, or otherwise correctly process an order, message, or other data entered into, or created by, the NOM Trading System shall be absorbed by the member, or the member sponsoring the customer, that entered the order, message, or other data into the NOM Trading System.

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098); amended September 14, 2021 (SR-NASDAQ-2021-074).

Section 28. Reserved

Adopted Dec. 6, 2019 (SR-NASDAQ-2019-098).