SECURITIES AND EXCHANGE COMMISSION
(Release No. 34-94889; File No. SR-EMERALD-2022-19)

May 11, 2022

Self-Regulatory Organizations; MIAX Emerald, LLC; Notice of Filing of a Proposed Rule Change To Amend Its Fee Schedule To Increase Certain Connectivity Fees and Adopt a Tiered-Pricing Structure for Additional Limited Service MIAX Emerald Express Interface Ports; Suspension of and Order Instituting Proceedings To Determine Whether To Approve or Disapprove the Proposed Rule Change

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 ("Act"),[1] and Rule 19b-4 thereunder,[2] notice is hereby given that on May 2, 2022, MIAX Emerald, LLC ("MIAX Emerald" or "Exchange") filed with the Securities and Exchange Commission ("Commission") a proposed rule change as described in Items I and II below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons and is, pursuant to Section 19(b)(3)(C) of the Act, hereby: (i) temporarily suspending the proposed rule change; and (ii) instituting proceedings to determine whether to approve or disapprove the proposed rule change.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange is filing a proposal to amend the MIAX Emerald Options Fee Schedule (the "Fee Schedule") to amend certain connectivity and port fees.

The text of the proposed rule change is available on the Exchange's website at http://www.miaxoptions.com/rule-filings/emerald, at MIAX's principal office, and at the Commission's Public Reference Room.

1 15 U.S.C. 78s(b)(1).

2 17 CFR 240.19b-4.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV [sic] below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to amend its Fee Schedule to increase the fees for a 10 gigabit ("Gb") ultra-low latency ("ULL") fiber connection and adopt a tiered-pricing structure for Limited Service MIAX Emerald Express Interface ("MEI") Ports[3] available to Market Makers.[4] The Exchange last increased the fees for both 10Gb ULL fiber connections and Limited Service MEI Ports beginning with a series of filings on October 1, 2020 (with the final filing made on March 24, 2021).[5] Prior to that fee change, the Exchange provided Limited Service MEI Ports for $50 per port, after the first two Limited Service MEI Ports that are provided free of charge,

3 The MIAX Emerald Express Interface ("MEI") is a connection to the MIAX Emerald System that enables Market Makers to submit simple and complex electronic quotes to MIAX Emerald. See the Definitions Section of the Fee Schedule.

4 The term "Market Makers" refers to Lead Market Makers ("LMMs"), Primary Lead Market Makers ("PLMMs"), and Registered Market Makers ("RMMs") collectively. See the Definitions Section of the Fee Schedule and Exchange Rule 100.

5 See Securities Exchange Act Release Nos. 91460 (April 1, 2021), 86 FR 18349 (April 8, 2021) (SR-EMERALD-2021-11); 90184 (October 14, 2020), 85 FR 66636 (October 20, 2020) (SR-EMERALD-2020-12); 90600 (December 8, 2020), 85 FR 80831 (December 14, 2020) (SR-EMERALD-2020-17); 91032 (February 1, 2021), 86 FR 8428 (February 5, 2021) (SR-EMERALD-2021-02); and 91200 (February 24, 2021), 86 FR 12221 (March 2, 2021) (SR-EMERALD-2021-07).

and the Exchange incurred all the costs associated to provide those first two Limited Service MEI Ports since it commenced operations in March 2019. The Exchange then increased the fee by $50 to a modest $100 fee per Limited Service MEI Port and increased the fee for 10Gb ULL fiber connections from $6,000 to $10,000 per month.

Also, in that fee change, the Exchange adopted fees for providing five different types of ports for the first time. These ports were FIX Ports, MEI Ports, Clearing Trade Drop Ports, FIX Drop Copy Ports, and Purge Ports.[6] Again, the Exchange absorbed all costs associated with providing these ports since its launch in March 2019. As explained in that filing, expenditures, as well as research and development ("R&D") in numerous areas resulted in a material increase in expense to the Exchange and were the primary drivers for that proposed fee change. In that filing, the Exchange allocated a total of $9.3 million in expenses to providing 10Gb ULL fiber connectivity, additional Limited Service MEI Ports, FIX Ports, MEI Ports, Clearing Trade Drop Ports, FIX Drop Copy Ports, and Purge Ports.[7]

Since the time of that filing, the Exchange experienced an increase in expenses, particularly regarding internal expenses. For example, from October 2020 to March 2022 expenses related to employee compensation increased from $9,354,900 to $9,900,032 and occupancy expense increased from $473,323 to $538,916. In addition, from October 2020 to March 2022, the Exchange's third party related expense increased as well. In October 2020, the exchange allocated $1,932,519 of its third party expenses to providing the following seven types of connectivity and access: 10Gb ULL fiber connectivity, additional Limited Service MEI Ports, FIX Ports, MEI Ports, Clearing Trade Drop Ports, FIX Drop Copy Ports, and Purge Ports. As

6 See id. for a description of each of these ports.

7 See supra note 5.

described more fully below, the Exchange is now allocating $2,011,286 of its third party expense to the following two types of connectivity and access: 10Gb ULL connectivity and Limited Service MEI Ports, which represents only a portion of its total third party expense of $3,108,431. As discussed more fully below, the Exchange recently calculated its annual aggregate costs for providing 10Gb ULL connectivity and Limited Service MEI Ports to be $10,483,343, or $873,612 per month. The Exchange now proposes to amend the Fee Schedule to amend the fees for 10Gb ULL connectivity and Limited Service MEI Port in order to recoup these ongoing costs and as a result of the increase in expenses described above.

First, the Exchange proposes to amend the Fee Schedule to increase the fees for Members[8] and non-Members to access the Exchange's System Networks[9] via a 10Gb ULL fiber connection. Specifically, the Exchange proposes to amend Sections 5)a)-b) of the Fee Schedule to increase the 10Gb ULL connectivity fee for Members and non-Members from $10,000 per month to $12,000 per month ("10Gb ULL Fee"). Prior to the proposed fee change, the Exchange assessed Members and non-Members a flat monthly fee of $10,000 per 10Gb ULL connection for access to the Exchange's primary and secondary facilities.[10]

The Exchange will continue to assess monthly Member and non-Member network connectivity fees for connectivity to the primary and secondary facilities in any month the

8 The term "Member" means an individual or organization approved to exercise the trading rights associated with a Trading Permit. Members are deemed "members" under the Exchange Act. See Exchange Rule 100.

9 The Exchange's System Networks consist of the Exchange's extranet, internal network, and external network.

10 The Exchange notes that it employed a tiered pricing structure for 10Gb ULL connectivity from August 2021 through March 2022 (except for certain months where the Exchange's 10Gb ULL connectivity fee was rolled-back to $10,000 per month). See infra notes 26 to 28.

Member or non-Member is credentialed to use any of the Exchange APIs or market data feeds in the production environment. The Exchange proposes to pro-rate the fees when a Member or non-Member makes a change to the connectivity (by adding or deleting connections) with such pro-rated fees based on the number of trading days that the Member or non-Member has been credentialed to utilize any of the Exchange APIs or market data feeds in the production environment through such connection, divided by the total number of trading days in such month multiplied by the applicable monthly rate. The Exchange will continue to assess monthly Member and non-Member network connectivity fees for connectivity to the disaster recovery facility in each month during which the Member or non-Member has established connectivity with the disaster recovery facility.

Second, the Exchange proposes to amend Section 5)d) of the Fee Schedule to adopt a tiered-pricing structure for Limited Service MEI Ports available to Market Makers. The Exchange allocates two (2) Full Service MEI Ports[11] and two (2) Limited Service MEI Ports[12] per matching engine[13] to which each Market Maker connects. Market Makers may also request

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11 "Full Service MEI Ports" means a port which provides Market Makers with the ability to send Market Maker simple and complex quotes, eQuotes, and quote purge messages to the MIAX Emerald System. Full Service MEI Ports are also capable of receiving administrative information. Market Makers are limited to two Full Service MEI Ports per Matching Engine. See the Definitions Section of the Fee Schedule.

12 "Limited Service MEI Ports" means a port which provides Market Makers with the ability to send simple and complex eQuotes and quote purge messages only, but not Market Maker Quotes, to the MIAX Emerald System. Limited Service MEI Ports are also capable of receiving administrative information. Market Makers initially receive two Limited Service MEI Ports per Matching Engine. See the Definitions Section of the Fee Schedule.

13 "Matching Engine" means a part of the MIAX Emerald electronic system that processes options orders and trades on a symbol-by-symbol basis. Some Matching Engines will process option classes with multiple root symbols, and other Matching Engines may be dedicated to one single option root symbol (for example, options on SPY may be processed by one single Matching Engine that is dedicated only to SPY). A particular root symbol may only be assigned to a single designated Matching Engine. A particular

additional Limited Service MEI Ports for each matching engine to which they connect. The Full Service MEI Ports and Limited Service MEI Ports all include access to the Exchange's primary and secondary data centers and its disaster recovery center. Market Makers may request additional Limited Service MEI Ports above the first two that are included for free for each matching engine. Prior to the proposed fee change, Market Makers were assessed a $100 monthly fee for each Limited Service MEI Port for each matching engine above the first two Limited Service MEI Ports that are included for free.

The Exchange now proposes to move from a flat monthly fee per Limited Service MEI Port for each matching engine to a tiered-pricing structure for Limited Service MEI Ports for each matching engine under which the monthly fee would vary depending on the number of Limited Service MEI Ports each Market Maker elects to purchase. Specifically, the Exchange will continue to provide the first and second Limited Service MEI Ports for each matching engine free of charge. For Limited Service MEI Ports, the Exchange proposes to adopt the following tiered-pricing structure: (i) the third and fourth Limited Service MEI Ports for each matching engine will increase from the current flat monthly fee of $100 to $200 per port; (ii) the fifth and sixth Limited Service MEI Ports for each matching engine will increase from the current flat monthly fee of $100 to $300 per port; and (iii) the seventh or more Limited Service MEI Ports will increase from the current monthly flat fee of $100 to $400 per port.[14] The

root symbol may not be assigned to multiple Matching Engines. <u>See</u> the Definitions Section of the Fee Schedule.

14 As noted in the Fee Schedule, Market Makers will continue to be limited to fourteen Limited Service MEI Ports per Matching Engine. The Exchange also proposes to make a ministerial clarifying change to remove the defined term "Additional Limited Service MEI Ports" as a result of moving to a tiered pricing structure where the first two Limited Service MEI Ports continue to be provided free of charge. The Exchange proposes to make a related change to add the term "Limited Service MEI Ports" after the word "fourteen" in the Fee Schedule.

Exchange believes a tiered-pricing structure will encourage Market Makers to be more efficient when determining how to connect to the Exchange. This should also enable the Exchange to better monitor and provide access to the Exchange's network to ensure sufficient capacity and headroom in the System[15] in accordance with its fair access requirements under Section 6(b)(5) of the Act.[16]

The Exchange believes that other exchanges' connectivity and port fees are useful examples and provides the following table for comparison purposes only to show how the Exchange's proposed fees compare to fees currently charged by other options exchanges for similar connectivity and port access. As shown by the below table, the Exchange's proposed fees are similar to or less than fees charged for similar access to other options exchanges.

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15 The term "System" means the automated trading system used by the Exchange for the trading of securities. See the Definitions Section of the Fee Schedule and Exchange Rule 100.

16 See 15 U.S.C. 78f(b). The Exchange may offer access on terms that are not unfairly discriminatory among its Members, and ensure sufficient capacity and headroom in the System. The Exchange monitors the System's performance and makes adjustments to its System based on market conditions and Member demand.

Exchange	Type of Connection or Port	Monthly Fee (per connection or per port)
MIAX Emerald (as proposed) (equity options market share of 4.49% as of April 12, 2022 for the month of April)[17]	10Gb ULL connection	$12,000
	Limited Service MEI Port	1-2 ports. FREE (not changed in this proposal) 3-4 ports. $200 5-6 ports. $300 7 or more ports. $400
The NASDAQ Stock Market LLC ("NASDAQ")[18] (equity options market share of 8.31% as of April 12, 2022 for the month of April)[19]	10Gb Ultra fiber connection	$15,000
	SQF Port	1-5 ports. $1,500 6-20 ports. $1,000 21 or more ports. $500
Nasdaq ISE LLC ("ISE")[20] (equity options market share of 5.28% as of April 12, 2022 for the month of April)[21]	10Gb Ultra fiber connection	$15,000
	SQF Port	$1,100
NYSE American LLC ("NYSE American")[22] (equity options market share of 7.86% as of April 12, 2022 for the month of April)[23]	10Gb LX LCN connection	$22,000
	Order/Quote Entry Port	Ports 1-40. $450 Ports 41 and greater. $150
Nasdaq GEMX, LLC ("GEMX")[24] (equity options market share of 2.31% as of April 12, 2022 for the month of April)[25]	10Gb Ultra connection	$15,000
	SQF Port	$1,250

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17 See "The market at a glance," available at https://www.miaxoptions.com/ (last visited April 12, 2022).

18 See NASDAQ Pricing Schedule, Options 7, Section 3, Ports and Other Services and NASDAQ Rules, General 8: Connectivity, Section 1. Co-Location Services.

19 See supra note 17.

20 See ISE Pricing Schedule, Options 7, Section 7, Connectivity Fees and ISE Rules, General 8: Connectivity.

21 See supra note 17.

Implementation and Procedural History

The proposed rule change will be effective May 2, 2022. The Exchange initially filed proposals to adopt tiered-pricing structures for the 10Gb ULL connections and Limited Service MEI Ports, with the proposed fees being effective beginning August 1, 2021. Between August 2021 and February 2022, the Exchange withdrew and refiled the proposed rule changes, each time to meaningfully attempt to provide additional justification for the proposed fee changes, provide enhanced details regarding the Exchange's cost methodology, and address questions contained in the Commission's suspension orders. The Exchange received six comment letters from three separate commenters on the filings.[26] This revised proposal provided additional details regarding the Exchange's cost methodology, revenue projections, and responded to various questions and requests for information contained in the Commission's suspension orders.[27] On April 1, 2022, the Exchange submitted revised proposals (separate filings for 10Gb

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22 See NYSE American Options Fee Schedule, Section V.A. Port Fees and Section V.B. Co-Location Fees.

23 See supra note 17.

24 See GEMX Pricing Schedule, Options 7, Section 6, Connectivity Fees and GEMX Rules, General 8: Connectivity.

25 See supra note 17.

26 See letters from Richard J. McDonald, Susquehanna International Group, LLC ("SIG"), to Vanessa Countryman, Secretary, Commission, dated September 7, 2021, October 1, 2021, October 26, 2021, and March 15, 2022 ("SIG Letters"). See also letter from Tyler Gellasch, Executive Director, Healthy Markets Association ("HMA"), to Hon. Gary Gensler, Chair, Commission, dated October 29, 2021 ("HMA Letter"); and letter from Ellen Green, Managing Director, Equity and Options Market Structure, Securities Industry and Financial Markets Association ("SIFMA"), to Vanessa Countryman, Secretary, Commission, dated November 26, 2021 ("SIFMA Letter").

27 See Securities Exchange Act Release Nos. 93644 (November 22, 2021), 86 FR 67750 (November 29, 2021) (SR-EMERALD-2021-29); 94089 (January 27, 2022); 87 FR 5910 (February 2, 2022) (SR-EMERALD-2021-42); 94257 (February 15, 2022), 87 FR 9678 (February 22, 2022) (SR-EMERALD-2022-04); 93640 (November 22, 2021), 86 FR 67745 (November 29, 2021) (SR-EMERALD-2021-31); 94087 (January 27, 2022), 87

ULL connectivity and Limited Service MEI Ports) to provide additional clarity regarding the Exchange's cost justifications and those proposals were subsequently suspended by the Commission.[28] The Exchange withdrew those proposals and submitted this revised filing on May 2, 2022. This newest revised filing builds upon the additional details regarding the Exchange's cost methodology and revenue projections, and includes the Exchange's responses to various questions and requests for information contained in the Commission's suspension orders.

2. Statutory Basis

The Exchange believes that the proposed fees are consistent with Section 6(b) of the Act[29] in general, and furthers the objectives of Section 6(b)(4) of the Act[30] in particular, in that it provides for the equitable allocation of reasonable dues, fees and other charges among Members and other persons using any facility or system which the Exchange operates or controls. The Exchange also believes the proposed fees further the objectives of Section 6(b)(5) of the Act[31] in that they are designed to promote just and equitable principles of trade, remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general protect investors and the public interest and are not designed to permit unfair discrimination between customers, issuers, brokers and dealers.

FR 5918 (February 2, 2022) (SR-EMERALD-2021-43); and 94260 (February 15, 2022), 87 FR 9695 (February 22, 2022) (SR-EMERALD-2022-05).

28 See Securities Exchange Act Release Nos. 94717 (April 14, 2022), 87 FR 23648 (April 20, 2022) (SR-EMERALD-2022-13); and 94718 (April 14, 2022), 87 FR 23633 (April 20, 2022) (SR-EMERALD-2022-15).

29 15 U.S.C. 78f(b).

30 15 U.S.C. 78f(b)(4).

31 15 U.S.C. 78f(b)(5).

The Exchange believes that the information provided to justify the proposed fees meets or exceeds the amount of detail required in respect of proposed fee changes as set forth in recent Commission and Commission Staff guidance. On March 29, 2019, the Commission issued an Order disapproving a proposed fee change by the BOX Market LLC Options Facility to establish connectivity fees for its BOX Network (the "BOX Order").[32] On May 21, 2019, the Commission Staff issued guidance "to assist the national securities exchanges and FINRA … in preparing Fee Filings that meet their burden to demonstrate that proposed fees are consistent with the requirements of the Securities Exchange Act."[33] Based on both the BOX Order and the Guidance, the Exchange believes that the proposed fees are consistent with the Act because they are: (i) reasonable, equitably allocated, not unfairly discriminatory, and not an undue burden on competition; (ii) comply with the BOX Order and the Guidance; and (iii) supported by evidence (including comprehensive revenue and cost data and analysis) that they are fair and reasonable and will not result in excessive pricing or supra-competitive profit.

The Proposed Fees will not Result in a Supra-Competitive Profit

The Exchange believes that exchanges, in setting fees of all types, should meet very high standards of transparency to demonstrate why each new fee or fee amendment meets the requirements of the Act that fees be reasonable, equitably allocated, not unfairly discriminatory, and not create an undue burden on competition among market participants. The Exchange

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32 See Securities Exchange Act Release No. 85459 (March 29, 2019), 84 FR 13363 (April 4, 2019) (SR-BOX-2018-24, SR-BOX-2018-37, and SR-BOX-2019-04) (Order Disapproving Proposed Rule Changes to Amend the Fee Schedule on the BOX Market LLC Options Facility to Establish BOX Connectivity Fees for Participants and Non-Participants Who Connect to the BOX Network).

33 See Staff Guidance on SRO Rule Filings Relating to Fees (May 21, 2019), at https://www.sec.gov/tm/staff-guidance-sro-rule-filings-fees (the "Guidance").

believes this high standard is especially important when an exchange imposes various fees for market participants to access an exchange's marketplace.

In the Guidance, the Commission Staff states that, "[a]s an initial step in assessing the reasonableness of a fee, staff considers whether the fee is constrained by significant competitive forces."[34] The Guidance further states that, "… even where an SRO cannot demonstrate, or does not assert, that significant competitive forces constrain the fee at issue, a cost-based discussion may be an alternative basis upon which to show consistency with the Exchange Act."[35] In the Guidance, the Commission Staff further states that, "[i]f an SRO seeks to support its claims that a proposed fee is fair and reasonable because it will permit recovery of the SRO's costs, or will not result in excessive pricing or supra-competitive profit, specific information, including quantitative information, should be provided to support that argument."[36] The Exchange does not assert that the proposed fees are constrained by competitive forces. Rather, the Exchange asserts that the proposed fees are reasonable because they will permit recovery of the Exchange's costs in providing access services to supply 10Gb ULL connectivity and Limited Service MEI Ports and will not result in the Exchange generating a supra-competitive profit.

The Guidance defines "supra-competitive profit" as "profits that exceed the profits that can be obtained in a competitive market."[37] The Commission Staff further states in the Guidance that "the SRO should provide an analysis of the SRO's baseline revenues, costs, and profitability (before the proposed fee change) and the SRO's expected revenues, costs, and profitability

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34 See id.

35 Id.

36 Id.

37 Id.

(following the proposed fee change) for the product or service in question."[38] The Exchange provides this analysis below.

The proposed fees are based on a cost-plus model. The Exchange believes that it is important to demonstrate that the proposed fees are based on its costs and reasonable business needs and believes the proposed fees will allow the Exchange to begin to offset expenses. However, as discussed more fully below, such fees may also result in the Exchange recouping less than, or more than, all of its costs of providing 10Gb ULL connectivity and Limited Service MEI Ports because of the uncertainty of forecasting subscriber decision making with respect to firms' access needs. The Exchange believes that the proposed fees will not result in excessive pricing or supra-competitive profit based on the total expenses the Exchange incurs versus the total revenue the Exchange projects to collect, and therefore meets the standards in the Act as interpreted by the Commission and the Commission Staff in the BOX Order and the Guidance.

The suspension orders sought additional information and comments on various aspects of the prior proposed fee changes. In many respects, the Commission's questions about the prior proposed fee changes raise broader questions around the factors the Commission should consider and the type of data and analysis an exchange should provide in considering whether market data, port fees, or connectivity fees are fair and reasonable under a cost-based methodology. The suspension orders also sought more specific information regarding the allocation of third-party expenses, such as the overall estimated cost for each category of external expenses or at minimum the total applicable third-party expenses and percentage allocation or statements regarding the Exchange's overall estimated costs for the internal

[38] Id.

expense categories and general shared expenses figure. The Exchange added this additional information below.

In this filing, the Exchange offers a conceptual framework for further considering the Commission's questions that draws on the Exchange's own experience over several years of analyzing its own costs. The elements of that framework are as follows:

First, the Exchange proposes a flat, simple 10Gb ULL Fee that imposes a single monthly fee for Members and non-Members. The Exchange believes this relatively simple, flat fee structure is transparent and easy for users to apply, and also helps show that it meets the objectives of the Act. The Exchange also proposes a tiered-pricing structure for its Limited Service MEI Ports that continues to provide the first and second Limited Service MEI Ports free of charge for each matching engine. The Exchange believes the proposed tiered-pricing structure for Limited Service MEI Ports is also transparent and easy for users to apply, and is a common pricing method used by other options exchanges when charging for port connectivity.[39]

The Exchange then conducted an extensive cost review in which the Exchange analyzed nearly every expense item in the Exchange's general expense ledger to determine whether each such expense relates to providing 10Gb ULL connectivity and Limited Service MEI Ports. That methodology does not allow for "double-counting" of the same costs for different classes of exchange products – for example transaction services, market data, physical connectivity, "logical" port connections or regulatory resources. As a result of this review, the Exchange determined that it experienced an increase in costs since October 2020 as set forth above and determined to propose to increase select connectivity fees as described herein to attempt to recoup this increased expense.

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39 See supra notes 18 and 22.

The Exchange then sought to narrowly allocate specific costs to 10Gb ULL connectivity and Limited Service MEI Ports to which the proposed fees would apply. In this filing, the Exchange provided more detail about how that allocation was determined and included information about tangential cost items that were not included. In determining what portion (or percentage) to allocate to access services, each Exchange department head, in coordination with other Exchange personnel, determined the expenses that support access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports. This included numerous meetings between the Exchange's Chief Information Officer, Chief Financial Officer, Head of Strategic Planning and Operations, Chief Technology Officer, various members of the Legal Department, and other group leaders. The analysis also included each department head meeting with the divisions of teams within each department to determine the amount of time and resources allocated by employees within each division towards the access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports. The Exchange reviewed each individual expense to determine if such expense was related to 10Gb ULL connectivity and Limited Service MEI Ports. Once the expenses were identified, the Exchange department heads, with the assistance of the Exchange's internal finance department, reviewed such expenses holistically on an Exchange-wide level to determine what portion of that expense supports providing access services and the System Networks. The sum of all such portions of expenses represents the total cost to the Exchange to provide access services associated with 10Gb ULL connectivity and Limited Service MEI Ports. For the avoidance of doubt, no expense amount is allocated twice. Specifically, no expense amount is allocated to more than one expense category within this filing and no expense amount that is allocated as a cost to provide and maintain access to the 10Gb ULL connectivity and Limited Service MEI

Ports in this filing have been or will be allocated as a cost to provide any other exchange product or service in any other fee filing. In the suspension orders, the Commission questioned whether further explanation of the Exchange's cost analysis was necessary. The Exchange provides further details concerning its cost analysis in response to this question.

The Exchange believes exchanges, like all businesses, should be provided flexibility when developing and applying a methodology to allocate costs and resources they deem necessary to operate their business, including providing market data and access services. The Exchange notes that costs and resource allocations may vary from business to business and, likewise, costs and resource allocations may differ from exchange to exchange when it comes to providing market data and access services. It is a business decision that must be evaluated by each exchange as to how to allocate internal resources and what costs to incur internally or via third parties that it may deem necessary to support its business and its provision of market data and access services to market participants.

Finally, the Exchange acknowledges that it is difficult to predict how much revenue the Exchange will receive from the proposed fees with precision. The analysis conducted by the Exchange is designed to make a fair and reasonable assessment of costs and resources allocated to support the provision of access services associated with the proposed fees. The Exchange further acknowledges that this assessment can only capture a moment in time and that costs and resource allocations may change. That is why the Exchange historically, and on an ongoing basis, reviews its costs and resource allocations to ensure it appropriately allocates resources to properly provide services to the Exchange's constituents. As part of this proposed rule change, and as described further below, the Exchange is committing to conduct an annual cost review with respect to fees that are cost justified in this proposed rule change beginning one year from the date of this proposal, and annually thereafter. The Exchange expects that it may propose to adjust fees at that time, either to increase fees in the event that revenues fail to reasonably cover costs at the estimated margin set forth below, or to decrease fees in the event that revenue materially exceeds the Exchange's current projections. In the event that the Exchange determines to propose a fee change, updated cost estimates will be included in a rule filing proposing the fee change.

The Exchange believes applying this framework to the proposed fees shows that they are consistent with the requirements of the Act, leaving aside that the proposed fees are relatively similar to fees charged by other exchanges for connectivity and port access.

Exchange Costs and Cost Methodology

The Exchange notes that there are material costs associated with providing the infrastructure and headcount to fully support access to the Exchange via connectivity and ports. As described below, the Exchange incurs technology expense related to establishing and maintaining Information Security services, enhanced network monitoring and customer reporting, as well as Regulation SCI-mandated processes associated with its network technology. Both fixed and variable expenses have significant impact on the Exchange's overall costs to provide 10Gb ULL connectivity and Limited Service MEI Ports. For example, to accommodate new Members, the Exchange may need to purchase additional hardware to support those Members and provide access through 10Gb ULL connectivity and Limited Service MEI Ports.[40] Further, as the total number of Members increases, the Exchange and its affiliates may need to increase their data center footprint and consume more power, resulting in

[40] The Exchange is not considering future costs associated with accommodating new 10Gb ULL connectivity and Limited Service MEI Ports subscriptions.

increased costs charged by their third-party data center provider. Accordingly, the cost to the Exchange and its affiliates to provide access to its Members is not fixed. The Exchange believes the proposed fees are a reasonable attempt to offset those costs associated with providing access to and maintaining its System Networks' infrastructure.

The Exchange estimated its total annual expense to provide 10Gb ULL connectivity and Limited Service MEI Ports based on the following general expense categories: (1) external expenses, which include fees paid to third parties for certain products and services; (2) internal expenses relating to the internal costs to provide the services associated with 10Gb ULL connectivity and Limited Service MEI Ports; and (3) general shared expenses.[41] The below table details each of these individual external and internal annual costs considered by the Exchange to be directly related to offering 10Gb ULL connectivity and Limited Service MEI Ports, and not any other product or service offered by the Exchange. The below table also details the general shared expense allocated to this proposal. Each of these expenses are discussed in more detail further below.

For 2022, the total annual expense for providing the access services associated with providing 10Gb ULL connectivity and Limited Service MEI Ports is estimated to be $10,483,343, or $873,612 per month. The Exchange utilized its estimated 2022 revenue and costs, which utilize the same methodology set forth in the Exchange's previously-issued Audited Unconsolidated Financial Statements.[42]

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41 The percentage allocations used in this proposed rule change may differ from past filings from the Exchange or its affiliates due to adjustments to internal resource allocations, and different system architecture of the Exchange as compared to its affiliates.

42 For example, the Exchange previously noted that all third-party expense described in its prior fee filing was contained in the information technology and communication costs line item under the section titled "Operating Expenses Incurred Directly or Allocated From Parent," in the Exchange's 2019 Form 1 Amendment containing its financial

External Expenses		
Category	**Percentage of Total Expense Amount Allocated**	
	10Gb ULL Connectivity	Limited Service MEI Ports
Data Center Provider	62%	2.4%
Fiber Connectivity Provider	62%	1.9%
Security Financial Transaction Infrastructure (“SFTI”), and Other Connectivity and Content Service Providers	89%	2.4%
Hardware and Software Providers	51%	1.5%
Total of External Expenses	$2,011,286[43]	
Internal Expenses		
Category	**Expense Amount Allocated**	
	10Gb ULL Connectivity	Limited Service MEI Ports
Employee Compensation	$3,259,251 (representing 33% of total $9,900,032 expense)	$916,303 (representing 9.3% of total $9,900,032 expense)

statements for 2018. See Securities Exchange Act Release No. 87877 (December 31, 2019), 85 FR 738 (January 7, 2020) (SR-EMERALD-2019-39). Accordingly, the third-party expense described in this filing is attributed to the same line item for the Exchange’s 2022 Form 1 Amendment, which will be filed in 2023. In its suspension orders, the Commission also asked should the Exchange use cost projections or actual costs estimated for 2021 in a filing made in 2022, or make cost projections for 2022. The Exchange utilized expenses from its most recent audited financial statement as those numbers are more reliable than more recent unaudited numbers, which may be subject to change.

43 The Exchange does not believe it is appropriate to disclose the actual amount it pays to each individual third party provider as those fee arrangements are competitive or the Exchange is contractually prohibited from disclosing that number.

Depreciation and Amortization	$2,164,610 (representing 64.3% of total $3,363,841 expense)	$81,932 (representing 2.4% of total $3,363,841 expense)
Occupancy	$284,947 (representing 53% of total $538,916 expense)	$10,501 (representing 1.9% of total $538,916 expense)
Total of Internal Expenses	$6,717,544	
Total Allocated Shared Expenses	$1,754,513 (representing 61% of total $2,872,232 expense)	
TOTAL EXTERNAL + INTERNAL + ALLOCATED SHARED EXPENSES	**$10,483,343**	

In its suspension orders, the Commission solicited commenters' views on whether the Exchange has provided sufficient detail on the identity and nature of services provided by third parties. The Commission further solicited commenters' views on whether the Exchange has provided sufficient detail on the elements that go into connectivity and port costs, including how shared costs are allocated and attributed to connectivity and port expenses, to permit an independent review and assessment of the reasonableness of purported cost-based fees and the corresponding profit margin thereon. In response, the Exchange provides additional detail regarding the identity and nature of services provided by third parties, the elements that go into connectivity and port costs, and how expenses are allocated. The Exchange believes this additional detail is sufficient to support a finding that the proposed fees are consistent with the Exchange Act.

For clarity, the Exchange took a conservative approach in determining the expense and the percentage of that expense to be allocated to providing 10Gb ULL connectivity and Limited Service MEI Ports. The Exchange describes below the analysis conducted for each expense and the resources or determinations that were considered when determining the amount necessary to allocate to each expense. The Exchange notes that, without the specific external and internal expense items, the Exchange would not be able to provide access to its System Networks through 10Gb ULL connectivity and Limited Service MEI Ports. Each of these expense items, including physical hardware, software, employee compensation and benefits, occupancy costs, and the depreciation and amortization of equipment, were identified through a line-by-line cost analysis and determined to be integral to providing access to its System Networks through 10Gb ULL connectivity and Limited Service MEI Ports for the reasons discussed below. Only a portion of all fees paid to such third parties are included in the third party expenses described herein, and, again, no expense amount is allocated twice. For example, the Exchange does not allocate its entire information technology and communication costs to providing access to its System Networks through 10Gb ULL connectivity and Limited Service MEI Ports because it determined that a portion of those costs are attributable to other areas of the Exchange's operations, such as transaction services, market data, and other forms of connectivity offered by the Exchange. This may result in the Exchange under allocating an expense to provide access to its System Networks through 10Gb ULL connectivity and Limited Service MEI Ports, and such expenses may actually be higher than what the Exchange allocated as part of this proposal.[44]

Further, as part its ongoing assessment of costs and expenses, the Exchange recently conducted a periodic thorough review of its expenses and resource allocations, which resulted in revised percentage allocations in this filing as compared to prior versions of this proposed

44 The Exchange notes that expenses associated with its affiliates, MIAX and MIAX Pearl (the options and equities markets), are accounted for separately and are not included within the scope of this filing.

fee change that were previously withdrawn by the Exchange. The revised percentages are, among other things, the result of the shifting of internal resources in response to business objectives. Therefore, the percentage allocations used in this proposed rule change may differ from past filings from the Exchange or its affiliates due to adjustments to internal resource allocations, and different system architecture of the Exchange as compared to its affiliates.[45]

The Exchange believes it is reasonable to consider the expense and revenue for 10Gb ULL connectivity and Limited Service MEI Ports together because ports and connectivity are inextricably linked components of the network infrastructure, and that both are necessary for a market participant to access the Exchange. The various types of connectivity and port alternatives that the Exchange offers provide a wide array of access alternatives necessary for a market participant to conduct its business using the Exchange, which is a business decision to be made by each particular type of market participant. The different types of connectivity and port alternatives allows Members to conduct their different business strategies – some Members put an emphasis on speed, while others emphasize other strategies, such as redundancy and certainty of execution. The Exchange does not require a Member to have a certain framework for accessing the Exchange, but provides various connectivity and port alternatives for each Member's distinct business lines.

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45 The Exchange notes that the expense allocations differ from the Exchange's filing earlier in 2021, SR-EMERALD-2021-11, because that prior filing pertained to several different access fees, which the Exchange had not been charging for since the Exchange launched operations in March 2019. See Securities Exchange Act Release No. 91460 (April 2, 2021), 86 FR 18349 (April 8, 2021) (SR-EMERALD-2021-11) (adopting fees for FIX Ports, MEI Ports, Purge Ports, Clearing Trade Drop Ports, and FIX Drop Copy Ports, all of which had been free for market participants for over two years since inception).

External Expense Allocations

For 2022, annual expenses relating to fees paid by the Exchange to third parties for products and services necessary to provide 10Gb ULL connectivity and Limited Service MEI Ports are estimated to be $2,011,286.[46] This includes a portion of the fees paid to: (1) a third party data center provider, including for the primary, secondary, and disaster recovery locations of the Exchange's trading system infrastructure; (2) a fiber connectivity provider for network services (fiber and bandwidth products and services) linking the Exchange's and its affiliates' office locations in Princeton, New Jersey and Miami, Florida, to all data center locations; (3) SFTI, which supports connectivity feeds for the entire U.S. options industry and various other content and connectivity service providers, which provide content, connectivity services, and infrastructure services for critical components of options connectivity and network services; and (4) hardware and software providers, which support the production environment in which Members and non-Members connect to the network to trade and receive market data.[47]

Data Center Space and Operations Provider

The Exchange does not own the primary data center or the secondary data center, but instead leases space in data centers operated by third parties where the Exchange houses servers, switches and related equipment. Data center costs include an allocation of the costs the Exchange incurs to provide physical connectivity in the third party data centers where it maintains its equipment as well as related costs. The data center provider operates the data centers (primary, secondary, and disaster recovery) that host the Exchange's network infrastructure. Without the retention of a third party data center, the Exchange would not be

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46 See supra note 43.

47 Id.

able to operate its systems, provide a trading platform for market participants, and produce and distribute market data. The Exchange does not employ a separate fee to cover its data center expense and recoups that expense, in part, by charging for 10Gb ULL connectivity and Limited Service MEI Ports.

The Exchange reviewed its data center footprint and space utilized, including its total rack space, cage usage, number of servers, switches, cabling within the data center, heating and cooling of physical space, storage space, and monitoring and divided its data center expenses among providing transaction services, market data, connectivity (10Gb ULL and 1Gb ULL separately), and ports based on space utilized by each area.[48] Based on this review, the Exchange determined that 62% of the total applicable data center provider expense is applicable to providing 10Gb ULL connectivity and 2.4% Limited Service MEI Ports. The Exchange reviewed space utilized to house rack space, cage usage, servers, switches, cabling, storage space, heating and cooling of physical space, and monitoring, and identified that a small portion of that footprint is dedicated to equipment used to support 10Gb ULL connectivity and Limited Service MEI Ports.

The Exchange believes this allocation is reasonable because it represents the costs associated with housing the Exchange's equipment dedicated to supporting 10Gb ULL connectivity and Limited Service MEI Ports. 10Gb ULL connectivity and Limited Service MEI Ports are core means of access to the Exchange's network, providing several methods for

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48 The Investors Exchange, Inc. ("IEX") also allocated data center costs to produce market data based on space utilized. See Securities Exchange Act Release No. 94630 (April 7, 2022), 87 FR 21945, at page 21949 (April 13, 2022) (SR-IEX-2022-02) ("IEX Market Data Fee Proposal") (noting that "[d]ata Center costs consist of the fees charged by the third-party data centers used by IEX and represent less than 10% the Exchange's total data center costs *based on space utilized*" (*emphasis added*)).

market participants to send and receive order and trade messages, as well as receive market data. A large portion of the Exchange's data center expense is due to space utilized to provide and maintain connectivity and port access to the Exchange's System Networks, including providing cabling within the data center between market participants and the Exchange. The Exchange excluded from this allocation servers and space that are dedicated to market data. The Exchange also did not allocate the remainder of the data center expense because it pertains to space utilized by other areas of the Exchange's operations, such as 1Gb ULL connectivity, other types of ports, market data, and transaction services.

Fiber Connectivity Provider

The Exchange engages a third party service provider that provides the internet, fiber and bandwidth connections between the Exchange's System Networks, primary and secondary data centers, and office locations in Princeton and Miami. Fiber connectivity is necessary for the Exchange to switch to its secondary data center in the case of an outage in its primary data center. Fiber connectivity also allows the Exchange's National Operations & Control Center ("NOCC") and Security Operations Center ("SOC") in Princeton to communicate with the Exchange's primary and secondary data centers. As such, all trade data, including the billions of messages each day, flow through this third party provider's infrastructure over the Exchange's network. Fiber connectivity is also necessary for personnel responsible for overseeing and providing customer service related to supporting 10Gb ULL connectivity and Limited Service MEI Ports, receiving relevant data and being able to communicate between the Exchange's various locations and data centers. Without these services, the Exchange would not be able to operate and support the network and provide and maintain access services and System Networks associated with the 10Gb ULL connectivity and Limited Service MEI Ports to its Members and their customers. Without the retention of a third party fiber connectivity provider, the Exchange would not be able to communicate between its data centers and office locations in a manner necessary to maintain and support 10Gb ULL connectivity and Limited Service MEI Ports. Fiber connectivity is a necessary integral means to disseminate information, including data related to supporting 10Gb ULL connectivity and Limited Service MEI Ports, from the Exchange's primary data center to other Exchange locations. It is necessary for Exchange employees located in various locations to be able to communicate and receive the necessary data to maintain and provide customer support related to 10Gb ULL connectivity and Limited Service MEI Ports. The Exchange would not be able to operate and support the network and provide and maintain access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports without third party fiber connectivity. The Exchange does not employ a separate fee to cover its fiber connectivity expense and recoups that expense, in part, by charging for 10Gb ULL connectivity and Limited Service MEI Ports.

The Exchange reviewed it costs to retain fiber connectivity from a third party, including the ongoing costs to support fiber connectivity, ensuring adequate bandwidth and infrastructure maintenance to support exchange operations, and ongoing network monitoring and maintenance. Based on this review, the Exchange determined that 62% of the total fiber connectivity expense was applicable to providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and 1.9% to Limited Service MEI Ports. The Exchange reviewed its total fiber connectivity expense and allocated it among transaction services, connectivity, ports, market data, and administrative operations, based on usage. The Exchange then further divided up its fiber connectivity costs related to connectivity and ports and identified the portion that is attributable to supporting 10Gb ULL connectivity and Limited Service MEI Ports, also based on usage. This allocation is, therefore, based on the amount of bandwidth and fiber connectivity the Exchange calculated is utilized to support exchange operations, and ongoing network monitoring and maintenance that are necessary to provide 10Gb ULL connectivity and Limited Service MEI Ports. The Exchange believes this allocation is reasonable because 10Gb ULL connectivity and Limited Service MEI Ports are core means of access to the Exchange's network, providing several methods for market participants to send and receive order and trade messages, as well as receive market data. A large portion of the Exchange's fiber connectivity expense is due to providing and maintaining connectivity between the Exchange's System Networks, data centers, and office locations and is core to the daily operation of the Exchange. The Exchange also excluded from this allocation fiber connectivity usage related to other business lines, such as transaction services, market data, and other forms of connectivity offered by the Exchange, or unrelated administrative services. The Exchange also did not allocate the remainder of this expense because it pertains to other areas of the Exchange's operations and does not directly relate to providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports. The Exchange believes this allocation is reasonable because it represents the Exchange's cost to providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports.

Connectivity and Content Services Provided by SFTI and Other Providers

The Exchange relies on SFTI and various other connectivity and content service providers for connectivity and data feeds for the entire U.S. options industry, as well as content, connectivity, and infrastructure services for critical components of the network that are necessary to provide and maintain its System Networks and access to its System Networks via 10Gb ULL connectivity and Limited Service MEI Ports. Specifically, the Exchange utilizes SFTI and other content service provider to connect to other national securities exchanges, the Options Price Reporting Authority ("OPRA"), and to receive market data from other exchanges and market data providers. SFTI is operated by the Intercontinental Exchange, the parent company of five registered exchanges, and has become integral to the U.S. markets. The Exchange understands SFTI provides services to most, if not all, of the other U.S. exchanges and other market participants. Connectivity and market data provided by SFTI and other service is critical to the Exchanges daily operations and performance of its System Networks to which market participants connect to via 10Gb ULL connectivity and Limited Service MEI Ports. Without services from SFTI and various other service providers, the Exchange would not be able to connect to other national securities exchanges, market data providers, or OPRA and, therefore, would not be able to operate and support its System Networks. The Exchange does not employ a separate fee to cover its SFTI and content service provider expense and recoups that expense, in part, by charging for 10Gb ULL connectivity and Limited Service MEI Ports.

The Exchange reviewed it costs to retain SFTI and other content service providers, including network monitoring and maintenance, remediation of connectivity related issues, and ongoing administrative activities related to connectivity management. Based on this review, the Exchange determined that 89% of the total applicable SFTI and other service provider expense is allocated to providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and 2.4% to Limited Service MEI Ports. The Exchange reviewed its total SFTI and other service provider expense and allocated it among transaction services, connectivity, ports, other market data products, and administrative operations, based on usage. The Exchange then further divided up its SFTI and other service provider costs related to connectivity and ports and identified the portion that is attributable to supporting 10Gb ULL connectivity and Limited Service MEI Ports, also based on usage. This allocation is, therefore, based on the amount of SFTI and other service provider resources utilized to support exchange operations, and ongoing network monitoring and maintenance that are necessary to provide 10Gb ULL connectivity and Limited Service MEI Ports. SFTI and other content service providers are key vendors and necessary components in providing access to the Exchange. The primary service SFTI provides for the Exchange is connectivity to other national securities exchanges and their disaster recovery facilities and, therefore, a vast portion of this expense is allocated to providing access to the System Networks via 10Gb ULL connectivity and Limited Service MEI Ports. Connectivity via SFTI is necessary for purposes of order routing and accessing disaster recovery facilities in the case of a system outage. Engaging SFTI and other like vendors provides purchasers of 10Gb ULL connectivity to other national securities exchanges for purposes of order routing and disaster recovery. The Exchange did not allocate a portion of this expense that relates to the receipt of market data from other national securities exchanges and OPRA. The Exchange also did not allocate the remainder of this expense because it pertains to other areas of the Exchange's operations and does not directly relate to providing and maintaining the System Networks or access to its System Networks via 10Gb ULL connectivity or Limited Service MEI Ports, such as transaction services, market data, other forms of connectivity offered by the Exchange, or unrelated administrative services. The Exchange believes this allocation is reasonable because it represents the Exchange's cost to provide and maintain its System Networks and access to its

System Networks via 10Gb ULL connectivity and Limited Service MEI Ports, and not any other service, as supported by its cost review.

Hardware and Software Providers

The Exchange relies on dozens of third party hardware and software providers for equipment necessary to operate its System Networks. This includes either the purchase or licensing of physical equipment, such as servers, switches, cabling, and devices needed by Exchange personnel to monitor servers and the health 10Gb ULL connectivity and Limited Service MEI Ports. This consists of real-time monitoring of system performance, integrity, and latency of 10Gb ULL connectivity and Limited Service MEI Ports. It also includes the Exchange purchasing or licensing software necessary for security monitoring, data analysis and Exchange operations. Hardware and software providers are necessary to maintain its System Networks and provide access to its System Networks via a 10Gb ULL connectivity and Limited Service MEI Ports. Hardware and software equipment and licenses for that equipment are also necessary to operate and monitor physical assets necessary to offer physical connectivity to the Exchange. Hardware and software equipment and licenses are key to the operation of the Exchange and, without them, the Exchange would not be able to operate and support its System Networks and provide access to its Members and their customers. The Exchange does not employ a separate fee to cover its hardware and software expense and recoups that expense, in part, by charging for 10Gb ULL connectivity and Limited Service MEI Ports.

The Exchange reviewed its hardware and software related costs, including software patch management, vulnerability management, administrative activities related to equipment and software management, professional services for selection, installation and configuration of equipment and software supporting exchange operations. The Exchange then divided those costs among transaction services, ports, connectivity, market data, and other Exchange operations based on whether all of that hardware or software is based on usage. The Exchange then reviewed the amount allocated to connectivity and ports generally and what portion of that hardware and software equipment or license is used to support 10Gb ULL connectivity and Limited Service MEI Ports specifically. Based on this review, the Exchange determined that 51% of the total applicable hardware and software expense is allocated to providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and 1.5% to Limited Service MEI Ports. These percentages reflect the amount of hardware and software equipment and licenses dedicated to support 10Gb ULL connectivity and Limited Service MEI Ports.[49] Hardware and software equipment and licenses are key to the operation of the Exchange and its System Networks. Without them, the Exchange would not be able to provide and maintain access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports. The Exchange only allocated the portion of this expense to the hardware and software that is related to 10Gb ULL connectivity and Limited Service MEI Ports, such as operating servers and equipment necessary to provide and maintain access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports. The Exchange, therefore, did not allocate portions of its hardware and software expense that related to other areas of the Exchange's business, such as hardware and software used for market data or unrelated administrative services. The Exchange also did not allocate the remainder of this expense because it pertains to other areas of the Exchange's

49 The Exchange notes that IEX used a similar methodology to allocate hardware costs to market data. See supra note 48, IEX Market Data Fee Proposal, at page 21950 (noting that "IEX only included hardware specifically dedicated to the market data feeds in calculating the costs of providing market data").

operations, such as transaction services, market data, and other forms of connectivity offered by the Exchange, and is not directly relate to providing 10Gb ULL connectivity or Limited Service MEI Ports. The Exchange believes this allocation is reasonable because it represents the Exchange's cost to provide and maintain access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports, and not any other service, as supported by its cost review.

Internal Expense Allocations

For 2022, total internal annual expenses relating to the Exchange providing and maintaining its System Networks and access to its System Networks for 10Gb ULL connectivity and Limited Service MEI Ports is estimated to be $6,717,544. This includes costs associated with: (1) employee compensation and benefits for full-time employees that support the System Networks and access to System Networks via 10Gb ULL connectivity and Limited Service MEI Ports, including staff in network operations, trading operations, development, system operations, business, as well as staff in general corporate departments (such as legal, regulatory, and finance) that support those employees and functions as well as important system upgrades; (2) depreciation and amortization of hardware and software used to provide and maintain access services and System Networks associated with the 10Gb ULL connectivity and Limited Service MEI Ports, including equipment, servers, cabling, purchased software and internally developed software used in the production environment to support the network for trading; and (3) occupancy costs for leased office space for staff that provide and maintain the System Networks and access to System Networks via 10Gb ULL connectivity and Limited Service MEI Ports.

Employee Compensation and Benefits

Human personnel are key to exchange operations and supporting the Exchange's ongoing provision of 10Gb ULL connectivity and Limited Service MEI Ports. The Exchange reviewed its employee compensation and benefits expense and the portion of that expense allocated to providing 10Gb ULL connectivity and Limited Service MEI Ports. As part of this review, the Exchange considered employees whose functions include providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports and used a blended rate of compensation reflecting salary, stock and bonus compensation, bonuses, benefits, payroll taxes, and 401K matching contributions.[50]

In its suspension orders, the Commission asked the Exchange provide more detail about the methodology the Exchange used to determine how much of an employee's time is devoted to connectivity and port related activities. In considering the cost of personnel, the Exchange generally considered the time spent on various access service projects and initiatives through project management tracking tools and analysis of employee resource allocations, among its Technology Team in the following areas: Technical Operations, Software Engineering, Quality Assurance, and Infrastructure. The Exchange did not consider non-Technology Teams such as Market Operations, Project Management, Regulatory, Legal, and Accounting/Finance.[51]

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[50] For purposes of this allocation, the Exchange did not consider expenses related to office space, supplies, or equipment use by employees who support 10Gb ULL connectivity and Limited Service MEI Ports.

[51] The Exchange notes that IEX used a similar methodology to allocate employee compensation related costs to market data. See supra note 48, IEX Market Data Fee Proposal, at page 29150 (noting that "[f]or personnel costs, IEX calculated an allocation of employee time for employees whose functions include providing and maintaining IEX Data and/or the proprietary market data feeds used to transmit IEX Data, and used a blended rate of compensation reflecting salary, stock and bonus compensation, benefits, payroll taxes, and 401(k) matching contributions").

Based on this review, the Exchange determined to allocate $4,175,554 in combined employee compensation and benefits expense to provide and maintain access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports. This is only a portion of the $9,900,032 total projected expense for employee compensation and benefits. Of that total, the Exchange allocated approximately 33% of the total applicable employee compensation and benefits expense to providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and 9.3% to Limited Service MEI Ports. The Exchange determined the cost allocation for employees who perform work in support of providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports to arrive at full time equivalents ("FTE") of 9.9 FTEs across all the identified personnel related to 10Gb ULL connectivity and 2.8 FTEs across all the identified personnel related to Limited Service MEI Ports. The Exchange then multiplied the FTE times a blended compensation rate for all relevant Exchange personnel to determine the personnel costs associated with providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports. Senior staff also reviewed these time allocations with department heads and team leaders to determine whether those allocations were appropriate. These employees are critical to the Exchange to providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports. The Exchange determined the above allocation based on the personnel whose work focused on functions necessary to providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports. The Exchange does not charge a separate fee regarding employees who support 10Gb

ULL connectivity and Limited Service MEI Ports and the Exchange seeks to recoup those expenses, in part, by charging for 10Gb ULL connectivity and Limited Service MEI Ports.

The Exchange believes it is appropriate to include incentive compensation in the blended personnel compensation rate on the same basis as other personnel costs for in-scope employees because incentive compensation is a part of the total personnel costs associated with the Exchange's provision of 10Gb ULL connectivity and Limited Service MEI Ports. Moreover, the Exchange notes that it has taken a conservative approach in determining which employees to include in its cost analysis, in terms of function and percent allocation, so that the included personnel costs are directly and closely tied to the costs of providing 10Gb ULL connectivity and Limited Service MEI Ports. The FTE allocation represents just 42.2% of the Exchange's overall personnel costs. Consistent with the Exchange's conservative methodology to limit costs allocated to 10Gb ULL connectivity and Limited Service MEI Ports, this approach includes only a de minimis personnel cost allocation for senior level executives and no allocation for members of the Exchange's board of directors. Accordingly, the Exchange believes that the allocated personnel expenses included are appropriately attributable to 10Gb ULL connectivity and Limited Service MEI Ports.

Depreciation and Amortization

A key expense incurred by the Exchange relates to the depreciation and amortization of equipment that the Exchange procured to provide and maintain access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports. The Exchange reviewed all of its physical assets and software, owned and leased, and determined whether each asset is related to providing and maintaining the 10Gb ULL connectivity and Limited Service MEI Ports, and added up the depreciation of those assets. All physical assets and software, which includes assets used for testing and monitoring of Exchange infrastructure, were valued at cost and depreciated or leased over periods ranging from three to five years. Based on the Exchange's experience, this depreciation period equals the typical life expectancy of those assets. In determining the amount of depreciation and amortization to apply to providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports, the Exchange considered the depreciation of hardware and software that are key to the operation of the Exchange and its provision of 10Gb ULL connectivity and Limited Service MEI Ports. This includes servers, computers, laptops, monitors, information security appliances and storage, and network switching infrastructure equipment, including switches and taps that were previously purchased to provide and maintain access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports. Without them, market participants would not be able to access the Exchange. The Exchange seeks to recoup a portion of its depreciation expense by charging for 10Gb ULL connectivity and Limited Service MEI Ports.

Based on this review, the Exchange determined to allocate $2,246,542 in combined depreciation and amortization expense to providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports. This is only a portion of the $3,363,841 total projected expense for depreciation and amortization. This allocation represents approximately 64.3% of the total applicable depreciation expense to providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and 2.4% to Limited Service MEI Ports. For purposes of the allocation of these costs to 10Gb ULL connectivity and Limited Service MEI Ports, the Exchange allocates the annual depreciation (i.e., one-third or one-fifth of the initial asset value based on the typical life expectancy of those assets). One-third or one-fifth of the cost of each asset is included in the annual costs allocated to 10Gb ULL connectivity and Limited Service MEI Ports. The Exchange only included assets specifically dedicated to 10Gb ULL connectivity and Limited Service MEI Ports in calculating the costs of providing 10Gb ULL connectivity and Limited Service MEI Ports. This means that physical assets used for such as transaction services, market data, other forms of connectivity offered by the Exchange, or other Exchange operations were excluded from the calculation.[52] The Exchange, therefore, did not allocate portions of depreciation expense that relates to other areas of the Exchange's business, such as the depreciation of hardware and software used for market data, unrelated administrative services, or other connectivity or ports offered by the Exchange. All of the expenses outlined in this proposed fee change refer to the operating expenses of the Exchange. In the suspension orders, the Commission asked for additional detail or explanation to ensure that no expense amount is allocated twice. The Exchange did not included any future capital expenditures within these costs ensuring that no cost is counted twice. Depreciation and amortization represent the expense of previously purchased hardware and internally developed software spread over the useful life of the assets. Due to the fact that the Exchange has only included operating expense and historical purchases, there is no double counting of expenses in the Exchange's cost estimates.

52 The Exchange notes that IEX used a similar methodology to allocate hardware costs to market data. See supra note 48, IEX Market Data Fee Proposal at note 54, at page 21950 (noting that "[h]ardware is depreciated on a straight-line three-year period, which in IEX's experience, is equal to the typical life expectancy of those assets. As noted above, one-third of the cost of each hardware asset is included in the annual costs allocated to market data. IEX only included hardware specifically dedicated to the market data feeds in calculating the costs of providing market data. This means that physical assets used for both order entry and market data were excluded from the calculation").

Occupancy

The Exchange rents and maintains multiple physical locations to house staff and equipment necessary to support access to System Networks via 10Gb ULL connectivity and Limited Service MEI Ports. The Exchange's occupancy expense is not limited to the housing of personnel and includes locations used to store equipment necessary for Exchange operations. In determining the amount of its occupancy related expense, the Exchange considered actual physical space used to house employees whose functions include providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports. Similarly, the Exchange also considered the actual physical space used to house hardware and other equipment necessary to provide and maintain the 10Gb ULL connectivity and Limited Service MEI Ports. The Exchange maintains staff that support 10Gb ULL connectivity and Limited Service MEI Ports in various locations and needs to provide workplaces for that staff as well as space to house hardware and equipment necessary for those employees to perform those functions.[53] This equipment includes computers, servers, and accessories necessary to support the access to the System Networks via 10Gb ULL connectivity and Limited Service MEI Ports. Based on this review, the Exchange determined to allocate $295,448 of its combined occupancy expense to providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports. According to the Exchange's calculations, it allocated approximately 53% of the total applicable occupancy expense to providing and maintaining access services and System

[53] For the avoidance of doubt, the Exchange did not include within this cost any portion of its costs related to third party fiber connectivity used by Exchange staff in different office locations to communicate as part of their role in supporting 10Gb ULL connectivity and Limited Service MEI Ports.

Networks associated with 10Gb ULL connectivity and 1.93% to Limited Service MEI Ports. This is only a portion of the $538,916 total projected expense for occupancy. The Exchange believes this allocation is reasonable because it represents the Exchange's cost to rent and maintain a physical location for the Exchange's staff who operate and support 10Gb ULL connectivity and Limited Service MEI Ports. The Exchange considered the rent paid for the Exchange's Princeton and Miami offices, as well as various related costs, such as physical security, property management fees, property taxes, and utilities at each of those locations. The Exchange did not include occupancy expenses related to housing employees and equipment related to other Exchange operations, such as transaction and administrative services.

Allocated Shared Expense

Finally, a limited portion of general shared expenses was allocated to providing and maintaining access services and System Networks associated with 10Gb ULL connectivity and Limited Service MEI Ports as without these general shared costs, the Exchange would not be able to operate in the manner that it does. The costs included in general shared expenses include recruiting and training, marketing and advertising costs, professional fees for legal, tax and accounting services, and telecommunications costs. For 2022, the Exchange's general shared combined expense allocated to 10Gb ULL connectivity and Limited Service MEI Ports is estimated to be $1,754,513. This represents approximately 61% of the $2,872,232 total projected general shared combined expense. The Exchange used the weighted average of the above allocations to determine the amount of general shared expenses to allocate to the Exchange. Next, based on additional management and expense analysis, these fees are allocated to the proposal.

Revenue and Estimated Profit Margin

The Exchange only has four primary sources of revenue and cost recovery mechanisms to fund all of its operations: transaction fees, access fees, regulatory fees, and market data fees. Accordingly, the Exchange must cover all of its expenses from these four primary sources of revenue and cost recovery mechanisms.

To determine the Exchange's estimated revenue associated with 10Gb ULL connectivity and Limited Service MEI Ports, the Exchange analyzed the number of Members and non-Members currently utilizing 10Gb ULL connectivity and Limited Service MEI Ports and used a recent monthly billing cycle representative of current monthly revenue. The Exchange also provided its baseline by analyzing March 2022, the monthly billing cycle prior to the proposed fees, and compared this to its expenses for that month. As discussed below, the Exchange does not believe it is appropriate to factor into its analysis future revenue growth or decline into its estimates for purposes of these calculations, given the uncertainty of such estimates due to the continually changing access needs of market participants and potential changes in internal and external expenses, as well as because the Exchange is committing to review this cost analysis for these fees on an annual basis going forward.

For March 2022, prior to the proposed fees, the Exchange had 102 10Gb ULL connections and 877 Limited Service MEI Ports purchased, for which the Exchange charged a total of $1,045,839 (including charges for connections that were dropped or added mid-month, resulting in pro-rated charges). This resulted in a profit of $172,227 for that month (a profit margin of 16%). For April 2022, the Exchange anticipates that 98 10Gb ULL connections and

841 Limited Service MEI Ports will be charged for (as of the date of this filing).[54] Assuming the Exchange charges its proposed monthly rate of $12,000 per 10Gb ULL fiber connection and the proposed tiered-pricing rates for Limited Service MEI Ports, the Exchange would generate revenue of $1,374,100 for April 2022 (not including potential pro-rated connection charges for mid-month connections) for 10Gb ULL connectivity and Limited Service MEI Port fees combined. This would result in a profit of $500,488 ($1,374,100 minus $873,612) for April (a 36.4% profit margin). As discussed above, the Exchange believes it is reasonable to consider the expense and revenue for 10Gb ULL connectivity and Limited Service MEI Ports together because ports and connectivity are inextricably linked components of the network infrastructure, and that both are necessary for a market participant to access the Exchange.

The Exchange believes that conducting the above analysis on a per month basis is reasonable as the revenue generated from access services subject to the proposed fee generally remains static from month to month. The Exchange also conducted the above analysis on a per month basis to comply with the Commission Staff's Guidance, which requires a baseline analysis to assist in determining whether the proposal generates a supra-competitive profit. The Exchange cautions that this profit margin may also fluctuate from month to month based on the uncertainty of predicting how many connections and ports may be purchased from month to

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[54] The Exchange notes that the number of subscribers of 10Gb ULL connections and Limited Service MEI Ports may change over time. For example, from June 2021 to April 2022, the Exchange had the following number of subscribers of 10Gb ULL connectivity per month: June (97); July (98); August (104); September (97); October (100); November (102); December (104); January (98); February (100); March (102); April (98). From June 2021 to April 2022, the Exchange had the following number of Limited Service MEI Ports utilized per month: June (601); July (625); August (825); September (828); October (864); November (840); December (840); January (864); February (850); March (877); April (841).

month as Members and non-Members are free to add and drop connections and ports at any time based on their own business decisions.

The Exchange believes the proposed profit margin is reasonable and will not result in a "supra-competitive" profit. The Guidance defines "supra-competitive profit" as "profits that exceed the profits that can be obtained in a competitive market."[55] Until recently, the Exchange has operated at a cumulative net annual loss since it launched operations in 2019.[56] The Exchange has operated at a net loss due to a number of factors, one of which is choosing to forgo revenue by offering certain products, such as connectivity, at lower rates than other options exchanges to attract order flow and encourage market participants to experience the high determinism, low latency, and resiliency of the Exchange's trading systems. The Exchange should not now be penalized for seeking to raise it fees to near market rates after offering such products as discounted prices. Therefore, the Exchange believes the proposed fees are reasonable because they are based on both relative costs to the Exchange to provide 10Gb ULL connectivity and Limited Service MEI Ports, the extent to which the product drives the Exchange's overall costs and the relative value of the product, as well as the Exchange's objective to make access to its Systems broadly available to market participants. The Exchange also believes the proposed fees are reasonable because they are designed to generate annual revenue to recoup the Exchange's costs of providing 10Gb ULL connectivity and Limited Service MEI Ports.

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55 See supra note 33.

56 The Exchange has incurred a cumulative loss of $22 million since its inception in 2019 to 2020, the last year for which the Exchange's Form 1 data is available. See Exchange's Form 1/A, Application for Registration or Exemption from Registration as a National Securities Exchange, filed July 28, 2021, available at https://sec.report/Document/9999999997-21-004557/.

The Exchange notes that its revenue estimate is based on projections and will only be realized to the extent such revenue actually produces the revenue estimated. As a generally new entrant to the hyper-competitive exchange environment, and an exchange focused on driving competition, the Exchange does not yet know whether such expectations will be realized. For instance, in order to generate the revenue expected from 10Gb ULL connectivity and Limited Service MEI Ports, the Exchange will have to be successful in retaining existing clients that wish to utilize 10Gb ULL connectivity and Limited Service MEI Ports or obtaining new clients that will purchase such access. To the extent the Exchange is successful in encouraging new clients to utilize 10Gb ULL connectivity and Limited Service MEI Ports, the Exchange does not believe it should be penalized for such success. The Exchange, like other exchanges, is, after all, a for-profit business. While the Exchange believes in transparency around costs and potential margins, the Exchange does not believe that these estimates should form the sole basis of whether or not a proposed fee is reasonable or can be adopted. Instead, the Exchange believes that the information should be used solely to confirm that an Exchange is not earning supra-competitive profits, and the Exchange believes this proposal demonstrates this fact.

Further, the proposed profit margin reflects the Exchange's efforts to control its costs. A profit margin should not be judged alone based on its size, but whether the ultimate fee reflects the value of the services provided and is in line with other exchanges. A profit margin on one exchange should not be deemed excessive where that exchange has been successful in controlling costs, but not excessive where an exchange is charging the same fee but has a lower profit margin due to higher costs.

The expected profit margin is reasonable because the Exchange offers a premium System Network, System Networks connectivity, and a highly deterministic trading environment. The

Exchange is recognized as a leader in network monitoring, determinism, risk protections, and network stability. For example, the Exchange experiences approximately a 95% determinism rate, system throughput of approximately 18 million quotes and average round trip latency rate of approximately 18 microseconds for a single quote. The Exchange provides extreme performance and radical scalability designed to match the unique needs of trading differing asset class/market model combinations. The Exchange's systems offer two customer interfaces, FIX gateway for orders, and ultra-low latency MEI interface and data feeds with best-in-class wire order determinism. The Exchange also offers automated continuous testing to ensure high reliability, advanced monitoring and systems security, and employs a software architecture that results in minimizing the demands on power, space, and cooling while allowing for rapid scalability, resiliency and fault isolation. The Exchange also provides latency equalized cross-connects in the primary data center ensures fair and cost efficient access to the Exchange's Systems. The Exchange, therefore, believes the anticipated profit margin is reasonable because it reflects the Exchange's cost controls and the quality of the Exchange's systems.

Finally, the Exchange believes that the proposed fees are reasonable because they will not impose onerous audit requirements on subscribers, because there will be no need to substantiate the number of users of 10Gb ULL connectivity and Limited Service MEI Ports or the manner in which it is being used.

Annual Review of Fees

In its suspension orders, the Commission asks whether exchanges should periodically reevaluate fees on an ongoing and periodic basis in order to assure that actual revenue aligns with a reasonable cost-plus model. As described above and as part of this proposed rule change, the Exchange is committing to conduct a one year review of the fees that are cost justified as part of this proposed rule change after the date of this proposal, and annually thereafter. The Exchange expects that it may propose to adjust fees at that time, either to increase fees in the event that revenues fail to reasonably cover costs at the estimated margin set forth below [sic], or to decrease fees in the event that revenue materially exceeds the Exchange's current projections. In the event that the Exchange determines to propose a fee change, updated cost estimates will be included in a rule filing proposing the fee change. The Exchange believes this approach will further increase transparency around market data costs and help to ensure that Exchange fees continue to be reasonably related to costs.

The Proposed Fees are Reasonable when Compared to the Fees of other Options Exchanges with Similar Market Share

The Exchange does not have visibility into other options exchanges' costs to provide connectivity and port access or their fee markup over those costs, and therefore cannot use other exchange's connectivity and port fees as benchmarks to determine a reasonable markup over the costs of providing such access. Nevertheless, the Exchange believes the other exchanges' 10Gb connectivity and port fees are useful examples of alternative approaches to providing and charging for access notwithstanding that the competing exchanges may have different system architectures that may result in different cost structures for the provision of connectivity and ports. To that end, the Exchange believes the proposed fees are reasonable because the proposed fees are similar to or less than fees charged for similar connectivity and port access provided by other options exchanges with comparable market shares.

As described in the table below, the Exchange's proposed fees remain similar to or less than fees charged for similar connectivity and port access provided by other options exchanges with similar market share. In the each of the below cases, the Exchange's proposed fees are still significantly lower than that of competing options exchanges with similar market share. Each of the market data rates in place at competing options exchanges were filed with the Commission for immediate effectiveness and remain in place today.

Exchange	Type of Connection or Port	Monthly Fee (per connection or per port)
MIAX Emerald (as proposed) (equity options market share of 4.49% as of April 12, 2022 for the month of April)[57]	10Gb ULL connection	$12,000
	Limited Service MEI Port	1-2 ports. FREE (not changed in this proposal) 3-4 ports. $200 5-6 ports. $300 7 or more ports. $400
NASDAQ[58] (equity options market share of 8.31% as of April 12, 2022 for the month of April)[59]	10Gb Ultra fiber connection	$15,000
	SQF Port	1-5 ports. $1,500 6-20 ports. $1,000 21 or more ports. $500
ISE[60] (equity options market share of 5.28% as of April 12, 2022 for the month of April)[61]	10Gb Ultra fiber connection	$15,000
	SQF Port	$1,100
NYSE American[62] (equity options market share of 7.86% as of April 12, 2022 for the month of April)[63]	10Gb LX LCN connection	$22,000
	Order/Quote Entry Port	Ports 1-40. $450 Ports 41 and greater. $150

57 See supra note 17.

58 See supra note 18.

59 See supra note 17.

60 See supra note 20.

61 See supra note 17.

62 See supra note 22.

63 See supra note 17.

GEMX[64] (equity options market share of 2.31% as of April 12, 2022 for the month of April)[65]	10Gb Ultra connection	$15,000
	SQF Port	$1,250

The Proposed Pricing is not Unfairly Discriminatory and Provides for the Equitable Allocation of Fees, Dues, and other Charges

The Exchange believes that the proposed fees are reasonable, fair, equitable, and not unfairly discriminatory because they are designed to align fees with services provided and will apply equally to all subscribers.

10Gb ULL Connectivity

The Exchange believes that the proposed fees are reasonable, equitably allocated and not unfairly discriminatory because, for one 10Gb ULL connection, the Exchange provides each Member or non-Member access to all twelve (12) matching engines on MIAX Emerald and a vast majority choose to connect to all twelve (12) matching engines. The Exchange believes that other exchanges require firms to connect to multiple matching engines.[66] For the foregoing

64 See supra note 24.

65 See supra note 17.

66 See Specialized Quote Interface Specification, Nasdaq PHLX, Nasdaq Options Market, Nasdaq BX Options, Version 6.5a, Section 2, Architecture (revised August 16, 2019), available at http://www.nasdaqtrader.com/content/technicalsupport/specifications/TradingProducts/SQF6.5a-2019-Aug.pdf. The Exchange notes that it is unclear whether the NASDAQ exchanges include connectivity to each matching engine for the single fee or charge per connection, per matching engine. See also NYSE Technology FAQ and Best Practices: Options, Section 5.1 (How many matching engines are used by each exchange?) (September 2020). The Exchange notes that NYSE provides a link to an Excel file detailing the number of matching engines per options exchange, with Arca and Amex having 19 and 17 matching engines, respectively.

reasons, the Exchange believes that the proposed fees are reasonable, equitably allocated, and not unfairly discriminatory.

The Exchange believes that the proposed fees are equitably allocated among users of the network connectivity and port alternatives, as the users of 10Gb ULL connections consume the more bandwidth and network resources than users of 1Gb ULL connection. Specifically, the Exchange notes that 10Gb ULL connection users account for approximately more than 99% of message traffic over the network, while the users of the 1Gb ULL connections account for approximately less than 1% of message traffic over the network. In the Exchange's experience, users of the 1Gb connections do not have a business need for the high performance network solutions required by 10Gb ULL users. The Exchange's high performance network solutions and supporting infrastructure (including employee support), provides unparalleled system throughput and the capacity to handle approximately 18 million quote messages per second. On an average day, the Exchange handles over approximately 3 billion total messages. Of those, users of the 10Gb ULL connections generate approximately 3 billion messages, and users of the 1Gb connections generate 500,000 messages. To achieve a consistent, premium network performance, the Exchange must build out and maintain a network that has the capacity to handle the message rate requirements of its most heavy network consumers. These billions of messages per day consume the Exchange's resources and significantly contribute to the overall network connectivity expense for storage and network transport capabilities. The Exchange must also purchase additional storage capacity on an ongoing basis to ensure it has sufficient capacity to store these messages as part of it surveillance program and to satisfy its record keeping requirements under the Exchange Act.[67] Thus, as the number of messages an entity increases, certain other costs incurred by the Exchange that are correlated to, though not directly affected by, connection costs (e.g., storage costs, surveillance costs, service expenses) also increase. Given this difference in network utilization rate, the Exchange believes that it is reasonable, equitable, and not unfairly discriminatory that the 10Gb ULL users pay for the vast majority of the shared network resources from which all market participants' benefit.

The Exchange also believes that the connectivity fees are equitably allocated amongst users of the network connectivity alternatives, when these fees are viewed in the context of the overall trading volume on the Exchange. To illustrate, the purchasers of the 10Gb ULL connectivity account for approximately 95.8% of the volume on the Exchange. This overall volume percentage (95.8% of total Exchange volume) is in line with the amount of network connectivity revenue collected from 10Gb ULL purchasers (99.8% of total Exchange connectivity revenue). For example, utilizing a recent billing cycle, Exchange Members and non-Members that purchased 10Gb ULL connections accounted for approximately 99.8% of the total network connectivity revenue collected by the Exchange from all connectivity alternatives; and Members and non-Members that purchased 1Gb connections accounted for approximately 0.2% of the revenue collected by the Exchange from all connectivity alternatives.

Limited Service MEI Ports

The Exchange believes that the proposed fees are equitably allocated among users of the network connectivity alternatives, as the users of the Limited Service MEI Ports consume the most bandwidth and resources of the network. Specifically, like above for the 10Gb ULL

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[67] 17 CFR 240.17a-1 (recordkeeping rule for national securities exchanges, national securities associations, registered clearing agencies and the Municipal Securities Rulemaking Board).

connectivity, the Exchange notes that the Market Makers who take the maximum amount of Limited Service MEI Ports account for approximately greater than 99% of message traffic over the network, while Market Makers with fewer Limited Service MEI Ports account for approximately less than 1% of message traffic over the network. In the Exchange's experience, Market Makers who only utilize the two free Limited Service MEI Ports do not have a business need for the high performance network solutions required by Market Makers who take the maximum amount of Limited Service MEI Ports. The Exchange's high performance network solutions and supporting infrastructure (including employee support), provides unparalleled system throughput and the capacity to handle approximately 18 million quote messages per second. On an average day, the Exchange handles over approximately 7.5 billion total quotes. Of that total, Market Makers with the maximum amount of Limited Service MEI Ports generate approximately 5 billion messages, and Market Makers who utilize the two free Limited Service MEI Ports generate approximately 1.8 billion messages. Specifically, Market Makers who utilize only one to two Limited Service MEI ports for free submitted an average of 375,821,358 quotes per day for the month of April 2022. Also for April 2022, Market Makers who utilized three to four Limited Service MEI ports submitted an average of 533,527,402 quotes per day and Market Makers who utilized seven or more Limited Service MEI ports submitted an average of 1,056,292,513 quotes per day.[68]

To achieve a consistent, premium network performance, the Exchange must build out and maintain a network that has the capacity to handle the message rate requirements of its most heavy network consumers. These billions of messages per day consume the Exchange's resources and significantly contribute to the overall network connectivity expense for storage and

[68] The Exchange notes that no firm utilized five to six Limited Service Ports in April 2022.

network transport capabilities. The Exchange must also purchase additional storage capacity on an ongoing basis to ensure it has sufficient capacity to store these messages as part of it surveillance program and to satisfy its record keeping requirements under the Exchange Act.[69] Thus, as the number of connections a Market Maker has increases, certain other costs incurred by the Exchange that are correlated to, though not directly affected by, connection costs (e.g., storage costs, surveillance costs, service expenses) also increase. The Exchange sought to design the proposed tiered-pricing structure to set the amount of the fees to relate to the number of connections a firm purchases. The more connections purchased by a Market Maker likely results in greater expenditure of Exchange resources and increased cost to the Exchange. With this in mind, the Exchange proposes no fee or lower fees for those Market Makers who receive fewer Limited Service MEI Ports since those Market Makers generally tend to send the least amount of orders and messages over those connections. Given this difference in network utilization rate, the Exchange believes that it is reasonable, equitable, and not unfairly discriminatory that Market Makers who take the most Limited Service MEI Ports pay for the vast majority of the shared network resources from which all Member and non-Member users benefit, but is designed and maintained from a capacity standpoint to specifically handle the message rate and performance requirements of those Market Makers.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

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69 17 CFR 240.17a-1 (recordkeeping rule for national securities exchanges, national securities associations, registered clearing agencies and the Municipal Securities Rulemaking Board).

Intra-Market Competition

The Exchange believes the proposed fees will not result in any burden on intra-market competition that is not necessary or appropriate in furtherance of the purposes of the Act because the proposed fees will allow the Exchange to recoup some of its costs in providing 10Gb ULL connectivity and Limited Service MEI Ports at below market rates to market participants since the Exchange launched operations. As described above, the Exchange has operated at a cumulative net annual loss since it launched operations in 2019[70] due to providing a low cost alternative to attract order flow and encourage market participants to experience the high determinism and resiliency of the Exchange's trading Systems. To do so, the Exchange chose to waive the fees for some non-transaction related services and Exchange products or provide them at a very marginal cost, which was not profitable to the Exchange. This resulted in the Exchange forgoing revenue it could have generated from assessing any fees or higher fees. The Exchange could have sought to charge higher fees at the outset, but that could have served to discourage participation on the Exchange. Instead, the Exchange chose to provide a low cost exchange alternative to the options industry, which resulted in lower initial revenues. Examples of this are 10Gb ULL connectivity and Limited Service MEI Ports, for which the Exchange only now seeks to adopt fees at a level similar to or lower than those of other options exchanges.

Further, the Exchange does not believe that the proposed fee increase for the 10Gb ULL connection change would place certain market participants at the Exchange at a relative disadvantage compared to other market participants or affect the ability of such market participants to compete. As is the case with the current proposed flat fee, the proposed fee would apply uniformly to all market participants regardless of the number of connections they choose to

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70 See supra note 56.

purchase. The proposed fee does not favor certain categories of market participants in a manner that would impose an undue burden on competition.

Inter-Market Competition

The Exchange also does not believe that the proposed rule change will result in any burden on inter-market competition that is not necessary or appropriate in furtherance of the purposes of the Act. As discussed above, options market participants are not forced to connect to all options exchanges. There is no reason to believe that our proposed price increase will harm another exchange's ability to compete. There are other options markets of which market participants may connect to trade options. There is also a possible range of alternative strategies, including routing to the exchange through another participant or market center or accessing the Exchange indirectly. Market participants are free to choose which exchange or reseller to use to satisfy their business needs. Accordingly, the Exchange does not believe its proposed fee changes impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received from Members, Participants, or Others

Written comments were neither solicited nor received.

III. Suspension of the Proposed Rule Change

Pursuant to Section 19(b)(3)(C) of the Act,[71] at any time within 60 days of the date of filing of a proposed rule change pursuant to Section 19(b)(1) of the Act,[72] the Commission summarily may temporarily suspend the change in the rules of a self-regulatory organization ("SRO") if it appears to the Commission that such action is necessary or appropriate in the public

[71] 15 U.S.C. 78s(b)(3)(C).

[72] 15 U.S.C. 78s(b)(1).

interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. As discussed below, the Commission believes a temporary suspension of the proposed rule change is necessary and appropriate to allow for additional analysis of the proposed rule change's consistency with the Act and the rules thereunder.

When exchanges file their proposed rule changes with the Commission, including fee filings like the Exchange's present proposal, they are required to provide a statement supporting the proposal's basis under the Act and the rules and regulations thereunder applicable to the exchange.[73] The instructions to Form 19b-4, on which exchanges file their proposed rule changes, specify that such statement "should be sufficiently detailed and specific to support a finding that the proposed rule change is consistent with [those] requirements."[74]

Among other things, exchange proposed rule changes are subject to Section 6 of the Act, including Sections 6(b)(4), (5), and (8), which requires the rules of an exchange to: (1) provide for the equitable allocation of reasonable fees among members, issuers, and other persons using the exchange's facilities;[75] (2) perfect the mechanism of a free and open market and a national market system, protect investors and the public interest, and not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers;[76] and (3) not impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act.[77]

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73 See 17 CFR 240.19b-4 (Item 3 entitled "Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change").

74 See id.

75 15 U.S.C. 78f(b)(4).

76 15 U.S.C. 78f(b)(5).

77 15 U.S.C. 78f(b)(8).

In temporarily suspending the Exchange's fee change, the Commission intends to further consider whether the proposed fees are consistent with the statutory requirements applicable to a national securities exchange under the Act. In particular, the Commission will consider whether the proposed rule change satisfies the standards under the Act and the rules thereunder requiring, among other things, that an exchange's rules provide for the equitable allocation of reasonable fees among members, issuers, and other persons using its facilities; not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers; and do not impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act.[78]

Therefore, the Commission finds that it is appropriate in the public interest, for the protection of investors, and otherwise in furtherance of the purposes of the Act, to temporarily suspend the proposed rule change.[79]

IV. Proceedings to Determine Whether to Approve or Disapprove the Proposed Rule Change

The Commission is instituting proceedings pursuant to Sections 19(b)(3)(C)[80] and 19(b)(2)(B)[81] of the Act to determine whether the Exchange's proposed rule change should be approved or disapproved. Institution of such proceedings is appropriate at this time in view of the legal and policy issues raised by the proposed rule change. Institution of proceedings does not indicate that the Commission has reached any conclusions with respect to any of the issues

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78 See 15 U.S.C. 78f(b)(4), (5), and (8), respectively.

79 For purposes of temporarily suspending the proposed rule change, the Commission has considered the proposed rule's impact on efficiency, competition, and capital formation. See 15 U.S.C. 78c(f).

80 15 U.S.C. 78s(b)(3)(C). Once the Commission temporarily suspends a proposed rule change, Section 19(b)(3)(C) of the Act requires that the Commission institute proceedings under Section 19(b)(2)(B) to determine whether a proposed rule change should be approved or disapproved.

81 15 U.S.C. 78s(b)(2)(B).

involved. Rather, as described below, the Commission seeks and encourages interested persons to provide comments on the proposed rule change to inform the Commission's analysis of whether to approve or disapprove the proposed rule change.

Pursuant to Section 19(b)(2)(B) of the Act,[82] the Commission is providing notice of the grounds for possible disapproval under consideration. The Commission is instituting proceedings to allow for additional analysis of whether the Exchange has sufficiently demonstrated how the proposed rule change is consistent with Sections 6(b)(4),[83] 6(b)(5),[84] and 6(b)(8)[85] of the Act. Section 6(b)(4) of the Act requires that the rules of a national securities exchange provide for the equitable allocation of reasonable dues, fees, and other charges among its members and issuers and other persons using its facilities. Section 6(b)(5) of the Act requires that the rules of a national securities exchange be designed, among other things, to promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system and, in general, to protect investors and the public interest, and not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers. Section 6(b)(8) of the Act requires that the rules of a national securities exchange not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

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82 15 U.S.C. 78s(b)(2)(B). Section 19(b)(2)(B) of the Act also provides that proceedings to determine whether to disapprove a proposed rule change must be concluded within 180 days of the date of publication of notice of the filing of the proposed rule change. See id. The time for conclusion of the proceedings may be extended for up to 60 days if the Commission finds good cause for such extension and publishes its reasons for so finding, or if the exchange consents to the longer period. See id.

83 15 U.S.C. 78f(b)(4).

84 15 U.S.C. 78f(b)(5).

85 15 U.S.C. 78f(b)(8).

The Commission asks that commenters address the sufficiency of the Exchange's statements in support of the proposal, in addition to any other comments they may wish to submit about the proposed rule change. In particular, the Commission seeks comment on the following aspects of the proposal and asks commenters to submit data where appropriate to support their views:

1. Cost Estimates and Allocation. The Exchange states that it is not asserting that the proposed fees are constrained by competitive forces.[86] Rather, the Exchange states that its proposed fees are based on a "cost-plus model," employing a "conservative approach," and that the expenses are "directly related" to 10Gb ULL connectivity and Limited Service MEI Ports, and not any other product or service offered by the Exchange.[87] In explaining its costs, should the Exchange identify more specifically which, if any, of its costs are incurred solely to provide 10Gb ULL connectivity and solely to provide Limited Service MEI Ports? Regarding the allocations provided by the Exchange as described in greater detail above, do commenters believe that the Exchange provided sufficient detail about how it determined these allocations and why they are reasonable?[88] Why or why not? Do commenters believe that the Exchange provided sufficient context to permit an independent review and assessment of the reasonableness of the allocations? Do commenters believe that the Exchange provided sufficient detail or explanation to support its claim that "no expense amount is allocated twice,"[89] whether among the sub-categories of expenses

86 See supra Section II.A.2.

87 See id.

88 See id.

89 See id.

in this filing, across the Exchange's fee filings for other products or services, or over time?

2. Revenue Estimates and Profit Margin Range. The Exchange uses a single monthly revenue figure (April 2022) as the basis for calculating its projected combined profit margin of 36.4%.[90] The Exchange argues that projecting revenues on a per month basis is reasonable "as the revenue generated from access services subject to the proposed fee generally remains static from month to month."[91] Yet the Exchange also acknowledges that "profit margin may also fluctuate from month to month based on the uncertainty of predicting how many connections and ports may be purchased from month to month as Members and non-Members are free to add and drop connections and ports at any time based on their own business decisions."[92] Do commenters believe a single month provides a reasonable basis for a revenue projection? If not, why not? Should the Exchange provide a range of profit margins that it believes are reasonably possible, and the reasons therefor? The Exchange also provided its baseline by analyzing March 2022.[93] Do commenters believe that March 2022 is an appropriate month for a baseline? What are commenters' views on the Exchange providing a combined profit margin for both 10Gb ULL connectivity and Limited Service MEI Ports, rather than separate margins for each?

3. Reasonableness. The Exchange states that its proposed fees are "reasonable because they will permit recovery of the Exchange's costs in providing access services to

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90 See id.

91 See id.

92 See id.

93 See id.

supply 10Gb ULL connectivity and Limited Service MEI Ports and will not result in the Exchange generating a supra-competitive profit."[94] The Exchange offers several justifications for why its estimated profit margin (which is blended and not discussed separately for each service) is not a supra-competitive profit, including: (a) when it launched operations in 2019, it chose to forgo revenue by offering certain products at lower rates than other options exchanges to attract order flow; (b) the Exchange has been successful in controlling its costs; (c) a profit margin should not be judged alone based on its size, but on whether the ultimate fee reflects the value of the services provided, and (d) the Exchange's proposed fees remain similar to or less than fees charged for access provided by other options exchanges with similar market share. Do commenters agree that these factors are relevant to assessment of whether the fees are reasonable for each service? Should such an assessment include consideration of any factors other than costs; and if so, what factors should be considered, and why?

4. Periodic Reevaluation. The Exchange has stated that it will conduct a review of the cost-based fees subject to this proposal one year after the date of the proposal, and annually thereafter.[95] In light of the impact that the number of connections and ports purchased has on profit margins, and the potential for costs to decrease (or increase) over time, what are commenters' views on the need for exchanges to commit to reevaluate, on an ongoing and periodic basis, their cost-based fees to ensure that the fees stay in line with their stated profitability projections and do not become unreasonable over time, for example, by failing to adjust for efficiency gains, cost

[94] See id.

[95] See id.

increases or decreases, and changes in amounts purchased? How formal should that process be, how often should that reevaluation occur, and what metrics and thresholds should be considered? How soon after a new fee change is implemented should an exchange assess whether its revenue and/or cost estimates were accurate and at what threshold should an exchange commit to file a fee change if its estimates were inaccurate?

5. Tiered Structure for Additional Limited Service MEI Ports. The Exchange states that the proposed tiered fee structure is equitably allocated among users of the network connectivity alternatives, because users of Limited Service MEI Ports "consume the most bandwidth and resources of the network."[96] The Exchange states that users of the "maximum amount of Limited Service MEI Ports" account for approximately greater than 99% of message traffic over the network, while users of "fewer Limited Service MEI Ports" account for approximately less than 1% of message traffic over the network.[97] Specifically, the Exchange states that Market Makers who utilize 1-2, 3-4, or 7 or more Limited Service MEI ports submit an average of 375,821,358 quotes per day, 533,527,402 quotes per day, and 1,056,292,513 quotes per day, respectively, for the month of April 2022.[98] According to the Exchange, these billions of messages per day consume the Exchange's resources and significantly contribute to the overall network connectivity expense for storage and network transport capabilities.[99] Given this difference in network utilization rate, the

96 See id.

97 See id.

98 See id.

99 See id.

> Exchange believes that its tiered structure is reasonable, equitable, and not unfairly discriminatory.[100] Do commenters believe that the fees for each tier (including the intermediary tiers), as well as the fee differences between the tiers, are supported by the Exchange's assertions? If not, is there an alternative basis on which increased demand by a market-making firm on the Exchange's resources would justify a tiered fee structure for additional Limited Service MEI Ports?

Under the Commission's Rules of Practice, the "burden to demonstrate that a proposed rule change is consistent with the Exchange Act and the rules and regulations issued thereunder . . . is on the [SRO] that proposed the rule change."[101] The description of a proposed rule change, its purpose and operation, its effect, and a legal analysis of its consistency with applicable requirements must all be sufficiently detailed and specific to support an affirmative Commission finding,[102] and any failure of an SRO to provide this information may result in the Commission not having a sufficient basis to make an affirmative finding that a proposed rule change is consistent with the Act and the applicable rules and regulations.[103] Moreover, "unquestioning reliance" on an SRO's representations in a proposed rule change would not be sufficient to justify Commission approval of a proposed rule change.[104]

The Commission believes it is appropriate to institute proceedings to allow for additional consideration and comment on the issues raised herein, including as to whether the proposal is

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100 See id.

101 17 CFR 201.700(b)(3).

102 See id.

103 See id.

104 See Susquehanna Int'l Group, LLP v. Securities and Exchange Commission, 866 F.3d 442, 446-47 (D.C. Cir. 2017) (rejecting the Commission's reliance on an SRO's own determinations without sufficient evidence of the basis for such determinations).

consistent with the Act, any potential comments or supplemental information provided by the Exchange, and any additional independent analysis by the Commission.

V. Commission's Solicitation of Comments

The Commission requests written views, data, and arguments with respect to the concerns identified above as well as any other relevant concerns. In particular, the Commission invites the written views of interested persons concerning whether the proposal is consistent with Sections 6(b)(4), 6(b)(5), and 6(b)(8), or any other provision of the Act, or the rules and regulations thereunder. The Commission asks that commenters address the sufficiency and merit of the Exchange's statements in support of the proposal, in addition to any other comments they may wish to submit about the proposed rule change. Although there do not appear to be any issues relevant to approval or disapproval that would be facilitated by an oral presentation of views, data, and arguments, the Commission will consider, pursuant to Rule 19b-4, any request for an opportunity to make an oral presentation.[105]

Interested persons are invited to submit written data, views, and arguments regarding whether the proposal should be approved or disapproved by [insert date 21 days from publication in the Federal Register]. Any person who wishes to file a rebuttal to any other person's submission must file that rebuttal by [insert date 35 days from publication in the Federal Register].

105 15 U.S.C. 78s(b)(2). Section 19(b)(2) of the Act grants the Commission flexibility to determine what type of proceeding—either oral or notice and opportunity for written comments—is appropriate for consideration of a particular proposal by an SRO. See Securities Acts Amendments of 1975, Report of the Senate Committee on Banking, Housing and Urban Affairs to Accompany S. 249, S. Rep. No. 75, 94th Cong., 1st Sess. 30 (1975).

Comments may be submitted by any of the following methods:

Electronic comments:

- Use the Commission's Internet comment form (http://www.sec.gov/rules/sro.shtml); or
- Send an e-mail to rule-comments@sec.gov. Please include File No. SR-EMERALD-2022-19 on the subject line.

Paper comments:

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street, NE, Washington, DC 20549-1090.

All submissions should refer to File No. SR-EMERALD-2022-19. This file number should be included on the subject line if e-mail is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet website (http://www.sec.gov/rules/sro.shtml). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street, NE, Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File No. SR-EMERALD-2022-19 and should be submitted on or before [insert date 21 days from publication in the Federal Register]. Rebuttal comments should be submitted by [insert date 35 days from publication in the Federal Register].

VI. Conclusion

IT IS THEREFORE ORDERED, pursuant to Section 19(b)(3)(C) of the Act,[106] that File No. SR-EMERALD-2022-19 be, and hereby is, temporarily suspended. In addition, the Commission is instituting proceedings to determine whether the proposed rule change should be approved or disapproved.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[107]

J. Matthew DeLesDernier
Assistant Secretary

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[106] 15 U.S.C. 78s(b)(3)(C).

[107] 17 CFR 200.30-3(a)(12), (57) and (58).