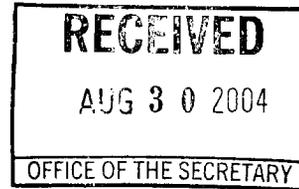


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MEMORANDUM



TO: Public Comment File No. S7-27-03

FROM: Adam B. Glazer
Office of Regulatory Policy
Division of Investment Management

DATE: August 19, 2004

On August 18, 2004, representatives of The SPARK Institute, Inc. ("SPARK"), the American Bankers Association, T. Rowe Price, and Wachovia Corporation ("Wachovia") met with staff members of the U.S. Securities and Exchange Commission to discuss issues relating to the Commission's proposed rule amendments concerning the pricing of investment company shares in Investment Company Act Release No. 26288 (Dec. 11, 2003) ("Late Trading Proposal"). The following Commission staff members from the Division of Investment Management attended the meeting: Robert Plaze, Associate Director, C. Hunter Jones, Assistant Director, Penelope Saltzman, Branch Chief, and Adam Glazer, Attorney.

The representatives discussed in greater detail their alternative approach to the Late Trading Proposal as described in SPARK's comment letter. Representatives of SPARK and Wachovia had first discussed their alternative approach with staff members at a meeting on April 14, 2004. The alternative approach would allow intermediaries to obtain same-day pricing for orders they receive by 4 p.m. and transmit to fund companies after 4 p.m. as long as the intermediary meets specific requirements, including (i) a comprehensive system of operational controls, policies and procedures to protect against late trading, and (ii) independent auditor review of the effectiveness of intermediary controls and policies, as described in the attached documents.

Attachments



August 16, 2004

Paul F. Roye, Director
Cynthia M. Fornelli, Deputy Director
Division of Investment Management
Securities and Exchange Commission
450 5th Street, N.W.
Washington, D.C. 20549

Re: **SPARK Criteria**

Dear Mr. Roye and Ms. Fornelli:

I am writing to confirm the support of the American Institute of Certified Public Accountants ("AICPA") for the draft *Criteria for Financial Intermediaries Performing After Hours Trade Processing*, which was submitted to you by the SPARK Institute on July 30, 2004 (the "SPARK Criteria"). We understand that the SPARK Criteria is being developed in connection with the "SPARK Solution" alternative to the proposed "hard" 4 p.m. close rule for trading in shares of mutual funds. The SPARK Criteria is intended to provide a basis for an annual independent accountant examination that would be required of "intermediaries" (including retirement plan recordkeepers) engaged in after hours processing of mutual fund trades under the SPARK Solution.

AICPA staff has initially reviewed the SPARK Criteria, engaged in discussions with members of the SPARK Institute about the criteria and the role of independent auditors in the SPARK Solution, and provided some initial comments on the SPARK Criteria (which are taken into account in the version of the SPARK Criteria received by you). Based on these efforts, the AICPA supports the approach taken in the SPARK Solution. Further, we believe that the SPARK Criteria will provide a basis for "suitable criteria" (as described under the AICPA Professional Standards, vol. 1, AT § 101.24) that could be used in evaluating the effectiveness of the controls, policies and procedures of intermediaries engaging in after hours trade processing in mutual funds.

We understand that, if the Commission adopts the SPARK Solution approach, an auditing (or examination) "Statement of Position" ("SOP") providing detailed guidance to independent auditors in examining intermediaries will be needed. Toward this end, we are now working to determine the membership of a task force of auditing professionals who could participate in developing an SOP based on the SPARK Criteria.

I hope that this information is helpful. If you have questions, please feel free to contact me.

Sincerely,

Charles E. Landes, CPA
Director, AICPA Audit & Attest Standards Team

Cc: Judith Sherinsky, AICPA technical manager

American Institute of Certified Public Accountants
1211 Avenue of the Americas, New York, NY 10036-8775 (212) 596-6200 • fax (212) 596-6213



The SPARK Institute
Alternative to the
Proposed 4:00 PM Hard Close

Prepared by The SPARK Institute, Inc.
August 18, 2004

Key Aspects

The SPARK Solution:

Allows Financial Intermediaries that service retirement plans to continue to submit trade instructions received from plan participants by market close to mutual funds after market close.

Avoids adverse impacts to participants of “4 p.m. hard close”

Establishes standardized industry controls developed in coordination with the AICPA that leverage automated controls and technology solutions

Requires annual targeted independent accountant examination and compliance attestation report

Requires multiple layers of compliance and management oversight

Provides built-in protections for mutual funds



THE
SPARK
Institute, Inc.

Standardized Industry Controls

- Key Terms (Section 1)*
- Intermediary
- Instructions
- Orders
- Critical Trade Information

* All Section references are to the SPARK Solution Exposure Draft.



Standardized Industry Controls

- Contract standards to protect funds (Section 2)
 - Specifically identifies authorized types of accounts
 - Intermediary required to notify funds of late trading
 - Indemnification of funds
 - Access to trading records
 - Requires Intermediary to supply independent accountant attestation report and executive officer certification
- Account establishment and change controls (Section 3)
 - Dual approval
 - Documentation and retention requirements

Standardized Industry Controls

- Automated electronic trade processing controls (Section 4)
 - All critical trade instruction information must be recorded electronically and time stamped at point of entry
 - Critical trade instruction information cannot be altered after market close, and must be preserved and available for inspection
 - All trade orders submitted to funds for execution must be based on instructions time stamped before market close
 - All instructions received before market close must be submitted to funds for execution unless:
 - Cancelled by market close
 - Specifically exempted



THE
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Standardized Industry Controls

- Automated electronic trade processing controls (Section 4)
 - Automated system processes validate identity of all accounts included in aggregated orders
 - Daily system reporting identifies inclusion of unauthorized account
 - All trade instructions must be traceable from point of entry to submission to the mutual fund
 - History of all orders must be maintained and available for inspection
- Fund position reconciliation requirements (Section 4.7.1)



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Standardized Industry Controls

- “Tamper-proof” verifiable electronic time stamping (Section 5)
 - Electronic time stamps applied automatically at point of entry into trade processing system
 - Third party solution or self-validation
 - Time stamped critical trade information is preserved unalterable and available for inspection
 - Daily synchronization with independent time source
 - System reports and logs maintained
 - Separation of duties between technology and trade processing



THE
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Institute, Inc.

Standardized Industry Controls

- Establishes standards for error correction after hours without creating additional risk of abuse (Section 6)
- Establishes standards for trade processing during system failures without creating additional risk of abuse (Section 7)
- Requires adequate system security and logical access controls of trading systems (Section 8)
 - Leverage existing SAS-70s



THE
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Compliance & Management Oversight

- Real-time automated “red-flag” reporting (Section 9.3.1)
 - Changes to time stamp or critical trade information
 - Modification or deletion of any order after market close, unless specifically exempted
 - Inclusion of trade for unauthorized account
 - Inclusion of instruction received after market close



THE
SPARK
Institute, Inc.

Compliance & Management Oversight

- Senior compliance officer (Section 9.2)
 - Independent of systems operators and trade processors
 - Reports to senior executive
 - Specific oversight responsibilities
 - Red flag reports
 - Review of exception documentation
 - Policies, procedures and controls
- Annual senior executive officer certification that:
 - Internal controls in place to prevent late trading
 - No late trading occurred



THE
SPARK
Institute, Inc.

Independent Accountant Compliance Attestation

- All after hours trade processing systems subject to an annual targeted independent accountant examination
- Criteria developed in conjunction with AICPA
- Independent accountant report must include:
 - Description of controls, policies and procedures
 - Description of review and testing performed
 - Accountant's opinion regarding effectiveness of controls

“TPA” Arrangements

- A Intermediary may accept orders from a Third Party Administrator (“TPA”) (Section 10)
- A TPA may submit orders to an Intermediary after market close only if the TPA meets applicable criteria, including –
 - implementing required controls, policies and procedures
 - obtaining annual compliance attestation reports
 - providing annual senior executive officer certifications
 - entering into written contracts protecting the mutual fund
- An Intermediary may accept orders from a TPA before market close.

Broad Industry Support

- The SPARK Institute, Inc.
- American Bankers Association (“ABA”)
- American Society of Pension Actuaries (“ASPA”)
- American Institute of Certified Public Accountants (“AICPA”)
- National Defined Contributions Council (“NDCC”)
- Profit Sharing Council of America (“PSCA”)



Broad Industry Support

Supporters Include:

- ADP Retirement Plan Services
- American Express Retirement Plan Services
- Amvescap
- AXA Financial
- BISYS
- Calvert Group
- CitiStreet
- Columbia Management Company
- Delaware Investments
- Delta Data
- Diversified Investment Advisors
- DST Systems
- Great West Retirement Services
- Hewitt Associates
- ICMA Retirement Corp.
- ING
- INVESCO
- Janus
- JP Morgan Retirement Plan Services
- MassMutual
- Merrill Lynch
- MetLife
- MFS Retirement Plan Services
- Morgan Stanley
- Morningstar
- Nationwide
- New York Life
- Northern Trust
- Prudential
- Scudder
- Sungard
- T. Rowe Price
- The 401k Company
- Transamerica
- Vanguard
- Wachovia



**CRITERIA FOR FINANCIAL INTERMEDIARIES
PERFORMING AFTER HOURS TRADE PROCESSING**

July 30, 2004

DRAFT

Prepared by the SPARK Institute, Inc.

*714 Hopmeadow Street, Suite 3
Simsbury, Ct 06070*

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INTRODUCTION AND SUMMARY

A. Background

Currently, the “forward pricing” rule under Rule 22c-1 of the Investment Company Act of 1940 allows Intermediaries¹ that service retirement plans to submit Orders received by the Pricing Time to Funds (or their primary transfer agents) after the Pricing Time.² Typically, Intermediaries process the Instructions and Orders they receive by the Pricing Time in the evening hours and submit the Orders to the Funds later that night.

As a result of concerns that current rules may be susceptible to fraud and manipulation, the Securities and Exchange Commission (“SEC”) recently proposed amendments to Rule 22c-1 that would implement a “4 p.m. hard close.”³ Under the proposed rule, all Orders, including Orders submitted by Intermediaries, must be received by the Fund or the Fund’s primary transfer agent, or a registered clearing agency (e.g., NSCC), no later than the Pricing Time in order to receive the Price for that business day.

As proposed, the 4 p.m. hard close would result in significant adverse impact on Plan participants since it is anticipated that the proposal would substantially limit the ability of Plan participants to make and effect timely investment decisions with respect to their plan accounts. Specifically, the 4 p.m. hard close would:

- require early trade “cut-off” times for Plan participant trades
- eliminate same-day exchanges which would result in substantial market risk exposure for Plan participants
- put Plan participants at a disadvantage compared to “retail” Fund shareholders
- discourage diversification among multiple Fund families
- create new opportunities for abuse (e.g., front running)

In addition to the Plan participant impact described above, the 4 p.m. hard close would have a significant impact on the retirement plan industry requiring system modifications that would increase participant costs as well as reduce competition and choice.

¹ Capitalized terms not specifically defined herein refer to the defined terms set forth in Section 1 of the *Criteria for Financial Intermediaries Performing After Hours Trade Processing*.

² See Staff Interpretive Position Relating to Rule 22c-1, Investment Company Act Release No. 5569 (Dec. 27, 1968) (rule 22c-1 “contemplates that the time of receipt of the order by the retail dealer is controlling” for purposes of determining the price obtained by the dealer). See also Charles Schwab & Co., Inc., SEC Staff No-Action Letter (July 7, 1997) (the time an order was received by a person designated in the fund’s prospectus will be deemed the time the order was received for purposes of rule 22c-1).

³ Amendments to Rules Governing Pricing of Mutual Fund Shares, Investment Company Act Rel. No. 26288, 68 Fed. Reg. 70388 (Dec. 17, 2003).



As a result, the SPARK Institute, Inc. (“SPARK”)⁴ has developed a proposed alternative to the 4 p.m. hard close that would permit Intermediaries to continue to accept trades up until the Pricing Time and submit those trades to the Funds after the Pricing Time.⁵ This proposal, known as the “SPARK Solution,” includes a number of requirements, including the establishment of standardized industry controls, policies and procedures that would serve as the regulatory framework supporting the proposal. These requirements, along with the “*Criteria for Financial Intermediaries Performing After Hours Trade Processing*” are summarized below.

B. SPARK Solution

The SPARK Solution imposes a “true” 4 p.m. trading deadline that will protect plan participants while continuing to allow Intermediaries to accept trades up until the Pricing Time and submit those trades to the Funds after the Pricing Time subject to certain restrictions and regulatory requirements. For example, in order to be eligible for After Hours Trade Processing, all Critical Trade Information for a trade must be captured electronically by the Pricing Time and, thereafter, no changes to that information would be permitted. In essence, the SPARK Solution eliminates any decision points regarding whether or not to convert an Instruction into an Order after the Pricing Time.

Specifically, the SPARK Solution –

1. establishes standardized industry controls, policies and procedures that leverage automated controls and technology. These controls are summarized in Section C below and are set forth in detail in the attached “*Criteria for Financial Intermediaries Performing After Hours Trade Processing.*”
2. requires an annual targeted comprehensive independent accountant examination and compliance attestation report covering the effectiveness of the Intermediary's controls.

⁴ The SPARK Institute is the legislative arm of the Society of Professional Administrators and Recordkeepers (“SPARK”). SPARK has approximately 250 member companies including mutual funds, banks, insurance companies, third party administrators and brokers’ with operations in the retirement services industry.

⁵ Another proposed alternative to the 4 p.m. hard close (i.e., the clearinghouse solution) would permit limited after hours processing of orders submitted to a specified clearinghouse by 4 p.m.. Under the clearinghouse alternative Plan participants will suffer many of the same negative impacts as they would under the 4 p.m. hard close. Specifically, it appears that the proposed clearinghouse alternative (1) will result in virtually the same early trading cutoff for Plan participants as the 4 p.m. hard close, (2) will require processing exceptions for only certain participant transactions resulting in either different trading deadlines or trading dates that will confuse participants, (3) will be costly for the clearinghouse and Intermediaries to implement and maintain resulting in higher fees, and (4) will not eliminate the potential for abuse by Intermediaries who trade directly through their affiliated fund companies. We believe that these concerns and the costs associated with this alternative outweigh its advantages, if any, and make it inferior to the SPARK Solution.



3. requires multiple layers of compliance and management oversight, including an annual certification by a senior executive officer that the intermediary has the appropriate controls, policies and procedures in place and that no late trades were submitted to the Fund.
4. provides built-in protections for mutual funds, including specific requirements for contracts between the Funds and Intermediaries.
5. with respect to trades received by Intermediaries from a TPA, either (a) requires all Instructions to be received by the Intermediary before the Pricing Time, or (b) requires the TPA to satisfy the requirements described above, including a requirement that the Intermediary have a written agreement with the TPA that meets the conditions of 4 above.

C. Overview of Criteria

The attached “*Criteria for Financial Intermediaries Performing After Hours Trade Processing*” set forth nine requirements applicable to Intermediaries engaged in After Hours Trade Processing. In addition, the requirements include “Illustrative Controls” that are intended to be examples of the various controls but do not constitute specific standards or requirements that must be followed by all Intermediaries. The requirements are designed to address special considerations applicable to tax-qualified plans and certain other retirement savings arrangements (as further defined under Section 1.14 “Plans”).⁶ The nine requirements are as follows.

1. Written After Hours Processing Agreements (Section 2) The requirements include contract standards for the AHP Agreements that are designed to protect the Funds. Specifically, the AHP Agreements must identify the specific Funds and Authorized Plan Accounts that are eligible for After Hours Trade Processing. In addition to these requirements, other provisions would be required under SEC rules, including provisions regarding an accountant attestation report, notice of any Late Trading, indemnification of the Funds, and Fund access to trading records.

2. Account Establishment and Change Controls (Section 3) The Intermediary may only submit Instructions or Orders in After Hours Trade Processing on behalf of properly designated Authorized Plan Accounts. In that regard, Intermediaries are required to establish polices, procedures and controls to ensure that accounts eligible for After Hours Trade Processing are properly documented and approved as eligible under applicable AHP Agreements. These requirements include a Dual Control Procedure approval process for

⁶ However, the criteria described by these requirements may be generally applicable where Intermediaries process Orders for shares of Funds on behalf of other types of investors and, if approved by the SEC, it is possible that the requirements could be expanded to be applicable to other types of investors.



Authorized Plan Account establishment and any subsequent modifications thereto. In addition, the requirements include specific documentation retention requirements.

3. Automatic Trade Processing Controls (Section 4) The Intermediary may only submit Orders to Funds for execution that are based on Instructions that have been time stamped before the Pricing Time. In that regard, all Critical Trade Information is required to be recorded electronically and time stamped at point of entry in order to receive the Price for that business day.⁷ The Critical Trade Information cannot be altered after the Pricing Time and must be preserved and available for inspection for seven years. In addition, except in specific limited circumstances set forth in Section 6, Instructions may not be cancelled or modified after the Pricing Time.

4. Time Stamping (Section 5) The time stamps applied to all Instructions must be tamper proof and verifiable. The time stamps must include both date and time and must be electronically applied and preserved. Either a third party Time Stamping System or a self-validating Time Stamping System is allowed subject to specific and detailed requirements.

5. Order Correction (Section 6) The Intermediary is not permitted to modify, correct or cancel any Instructions after the Pricing Time, except in limited circumstances (e.g., to correct an Order to conform to an Instruction received before the Pricing Time). In that regard, the controls require Intermediaries to document specific policies and procedures for correcting Orders after the Pricing Time, including types of permissible corrections. All corrections are subject to a Dual-Control Procedure and must be documented and are subject to further management review.

6. System Failures (Section 7) The requirements establish standards for trade processing during System Failures without creating additional risk of abuse.

7. System Controls and Security (Section 8) The Intermediary is required to establish reasonable policies, procedures and controls to ensure adequate physical security and logical access control of the systems it uses in connection with After Hours Trade Processing. Generally, this requirement can be met where policies, procedures and controls to ensure adequate physical security have been reviewed and tested by an independent accounting firm and the results of the review are included in a "SAS-70" report, or where the policies, procedures and controls to ensure adequate physical security are reviewed and tested as part of the After Hours Trade Processing independent accountant compliance attestation examination.

8. Compliance Oversight (Section 9) The Intermediary is required to establish policies and procedures that provide for "real time" management oversight of all After Hours Trade Processing and the effectiveness of After Hours Trade Processing controls, policies and

⁷ Orders submitted to the Fund or its primary transfer agent before the Pricing Time are not required to be time stamped by the Intermediary.



procedures. This includes the designation of a “Senior Compliance Officer” responsible for overall compliance of the Intermediary’s After Hours Trade Processing system. In addition, the Intermediary’s Trade Processing Systems must automatically generate daily red flag reports for review by the Senior Compliance Officer, which would identify (a) changes to electronic date time stamp or Critical Trade Information in any Instruction after initial entry of the information in the Trade Processing System (other than a time-stamped cancellation before the Pricing Time), (b) any modification to Instructions after the Pricing Time unless approved in accordance with the Intermediary’s policies and procedures for corrections (see 5 above), and (c) any evidence of the possible inclusion of an Order for a Plan Account that is not an Authorized Plan Account or an Order or Instruction received after the Pricing Time.

9. Third Party Administrator Arrangements (Section 10) The requirements permit Intermediaries to process and submit Instructions and Orders from TPAs as part of After Hours Trade Processing provided such Instructions are received electronically by the Intermediary prior to the Pricing Time.



Criteria For Financial Intermediaries Performing After Hours Trade Processing

1. Definitions

- 1.1. **“After Hours Trade Processing”** (or **“AHP”**) is a procedure in which an Order for the purchase or redemption of Fund shares Received by an Intermediary before the Fund’s Pricing Time (usually, 4 p.m. EST) is processed and submitted to the Fund after the Pricing Time on a business day for execution at the Price determined as of that Pricing Time.
- 1.2. **“AHP Agreement”** means a written agreement pursuant to which an Intermediary is authorized to receive Instructions and Orders for purchases and redemptions of Fund shares on the Fund’s behalf and submit the Orders in After Hours Trade Processing. Criteria for AHP Agreements is described by Section 2.
- 1.3. **“Authorized Plan Account”** is an account that is (i) the type that a Fund has authorized (in an AHP Agreement and in accordance with SEC rules) as eligible to submit Orders for After Hours Trade Processing and (ii) approved by the Intermediary to participate in After Hours Trade Processing in accordance with Section 3.
- 1.4. **“Code”** means the Internal Revenue Code of 1986, as amended.
- 1.5. **“Critical Trade Information”** means the trade information described in Section 4.1.2.
- 1.6. **“Dual-Control Procedure”** means a procedure for authorizing a transaction or other action, meeting conditions under Section 9.1.
- 1.7. **“ERISA”** means the Employee Retirement Income Security Act of 1974, as amended.
- 1.8. **“Fund”** means an investment company registered under the Investment Company Act of 1940 that issues redeemable securities.
- 1.9. An **“Instruction”** is any instruction that will generate Orders for purchases or redemptions of Fund shares to be executed for an Authorized Plan Account on a business day, provided that the Intermediary receives with respect to such Instruction by the Pricing Time all information necessary to determine the Order based on the Instruction, other than the Price to be applied to Fund shares involved in the transaction. By way of illustration, and not limitation, in the case of any participant-directed Plan, —



- 1.9.1. Instructions include requests by a Plan's fiduciary or investment manager to effect changes in Plan investment option offerings, including replacements and portfolio rebalancings.
- 1.9.2. Instructions include directions for the investment of amounts deducted from an employer's payroll in connection with a Plan, whether or not the Intermediary confirms that such payroll amounts are funded, provided that, if the Intermediary Submits an Order based on payroll amounts that are not funded at the time the Order is Submitted, the Intermediary may not revoke that Order after the Pricing Time on the grounds that the payroll amounts were not later funded.
- 1.9.3. Instructions include Plan participant requests under a Plan, including but not limited to requests for loans, hardship or other withdrawals, requests for exchanges between Plan investment options, and portfolio rebalancing requests.
- 1.9.4. An Instruction to liquidate a specified percentage of Fund shares held in a Plan Account (including a total liquidation), or a participant's account maintained as part of such Plan Account, is a valid Instruction.
- 1.9.5. An Instruction includes a request from a Plan fiduciary, participant or investment manager to purchase or redeem a specific number of shares of a Fund, or an indeterminate number of shares of a specific value.
- 1.9.6. In the case of an Instruction to liquidate a fixed dollar amount of Fund shares from a Plan Account, which cannot be satisfied from the Plan Account on the business day on which the Instruction is received, the Instruction includes an Instruction to liquidate the lesser number of available Fund shares held by such Plan Account, provided that the Intermediary's Trade Processing System can maintain an audit trail showing how the application of Price information impacts the Instruction and resulting Order.
- 1.9.7. In the case of an Instruction to liquidate a fixed-dollar amount to fund a participant loan or hardship or other withdrawal under a Plan, if Plan rules or ERISA restricts liquidation of a portion of the participant's account balance, an Instruction includes a valid Instruction to liquidate the lesser dollar amount permitted by plan rules or ERISA, provided that the Intermediary's Trade Processing System can maintain an audit trail showing how the application of Price information impacts the Instruction and the resulting Order.
- 1.10. An "**Intermediary**" is an agent designated pursuant to an AHP Agreement to accept orders on the Fund's behalf for purchases and redemptions of Fund shares. The Intermediary may be designated by a Fund, the Fund's transfer agent, or another



- Intermediary authorized by the Fund or the Fund's transfer agent to designate Intermediaries to accept Orders for the Fund's shares. An Intermediary may be a bank, broker-dealer or other entity, including a retirement plan recordkeeper.
- 1.11. **"Late Trading"** occurs where an Instruction that an Intermediary did not Receive before the Pricing Time on a business day results in an Order submitted to the Fund to be invested at the Price determined by the Fund for that business day.
 - 1.12. **"Omnibus Account"** means a trading account used by the Intermediary with respect to a Fund in which the assets and Orders from multiple Plan Accounts are aggregated.
 - 1.13. An **"Order"** means a direction to purchase or redeem a specific number of Fund shares or an indeterminate number of Fund shares of a specific value. An Order may include a direction to purchase shares using the proceeds of a contemporaneous order to redeem shares of another Fund. (Proposed rule 22c-1(c)(3) definition.)
 - 1.14. **"Plan"** means any of the following: (i) any plan qualified under Code Sections 401(a) or 457, including any deemed individual retirement account maintained in connection with such plan; (ii) a Code Section 403(b) arrangement; (iii) a non-qualified deferred compensation plan allowing participants to elect among investment options; and (iv) payroll-deduction individual retirement account plans (whether or not subject to ERISA).
 - 1.15. **"Plan Account"** means the account holding shares of a Fund or Funds in connection with a Plan. Where individual participant accounts are maintained in connection with a Plan Account (such as where a Plan is participant-directed), the Plan Account means the account maintained for the entire Plan, and does not refer to individual participant accounts, except that, in the case of any individual retirement account, the Authorized Plan Account also is the individual retirement account.
 - 1.16. **"Price"** means the Price at which Fund shares are purchased or redeemed, determined based on the net asset value of the Fund as of the Pricing Time for that business day.
 - 1.17. **"Pricing Time"** is the time (usually, 4 p.m. EST) as of which the net asset value of Fund shares is calculated for that business day.
 - 1.18. **"Processing Disruption"** is defined under Section 7.2.
 - 1.19. An Instruction or Order is deemed to be **"Received"** by an Intermediary before the Pricing Time so long as the Intermediary receives before the Pricing Time, either: (a) an Order for a purchase or redemption of Fund shares, or (b) an Instruction that generates a purchase or redemption Order for the Fund shares. Any Order or Instruction must be irrevocable as of the Pricing Time on the business day it is deemed



to be Received. Orders and Instructions may be cancelled or modified before the Pricing Time on any business day, subject to Sections 4.4 and 4.5.

- 1.20. **“Same Day Correction”** means a correction performed after the Pricing Time in accordance with Section 6.
 - 1.21. **“Senior Compliance Officer”** means an individual designated in accordance with Section 9.2.
 - 1.22. **“Senior Executive Officer”** is defined by Section 9.2.3.
 - 1.23. **“Submitted Order”** or **“Order Submitted”** means any Order submitted by an Intermediary either directly or indirectly (through another Intermediary, the NSCC, a Fund’s transfer agent, or another party designated by the Fund) to a Fund for execution.
 - 1.24. **“System Failure”** is defined under Section 7.1.
 - 1.25. **“Time Stamping System”** is defined under Section 5.2.
 - 1.26. **“Trade Processing System”** is the Intermediary’s computer, telephone and other electronic systems used to receive, process and submit Instructions and Orders. An Intermediary’s Trade Processing System may include, for example, order processing systems, order aggregating and netting systems, order transmittal systems, and also, participant account recordkeeping systems, order-taking systems (such as an automated voice response system, recorded telephone system, electronic mail, or internet web site) and other systems used in the record keeping and administration of Plans to the extent that such systems perform one or more functions in connection with receiving, processing and submitting Instructions and Orders. An Intermediary’s Trade Processing System also includes the Time Stamping System, unless in the context where such term or terms are used the Time Stamping System is specifically excluded. The Trade Processing System can include computer, telephone or other electronic systems owned, maintained, operated, or controlled by a third party for the Intermediary.
- 2. AHP Agreements - All Orders submitted in After Hours Trade Processing are submitted on behalf of Authorized Plan Accounts to Funds under applicable AHP Agreements.**
- 2.1. For each Fund to which the Intermediary submits Orders in After Hours Trade Processing, there is an AHP Agreement between the Intermediary and the Fund or an authorized agent of the Fund, in accordance with Section 2.2.



- 2.2. A Fund may authorize its transfer agent as its agent to enter AHP Agreements with Intermediaries. A Fund or its transfer agent may authorize Intermediaries to enter AHP Agreements with TPAs. An Intermediary may accept Orders from a TPA only if the criteria under Section 10 are met.
 - 2.3. The AHP Agreement applicable to each Fund permits the Intermediary to receive and process Orders for the Fund in After Hours Trade Processing.
 - 2.4. The AHP Agreement identifies the types of investors (*e.g.*, Plans) from which the Intermediary may Receive Instructions and Orders to be Submitted in After Hours Trade Processing.
 - 2.5. The AHP Agreements may authorize the Intermediary to submit Orders for individual Plans on a Plan-by-Plan basis, or for a group of Plans on an aggregated basis, *i.e.*, for an Omnibus Account.
- 3. Authorization of Authorized Plan Accounts - The Intermediary only submits Orders in After Hours Trade Processing on behalf of properly designated Authorized Plan Accounts.**
- 3.1. The Intermediary has documented policies, procedures and controls for establishing Authorized Plan Accounts on its Trade Processing System.
 - 3.1.1. The policies, procedures and controls, and any changes thereto, are reviewed and approved by the Senior Compliance Officer.
 - 3.2. The Intermediary determines that an account is the type of account eligible for After Hours Trade Processing under applicable AHP Agreements before submitting any Orders on the account's behalf in After Hours Processing.
 - 3.2.1. Before submitting Orders in After Hours Trade Processing on behalf of a new account, the Intermediary reviews account information and documentation to determine whether the account is the type of account eligible for After Hours Trade Processing under the AHP Agreements with the Funds in which the account is expected to invest.
 - 3.2.2. The Intermediary approves an account as an Authorized Plan Account only if the account is the type of account eligible for After Hours Trade Processing under the AHP Agreements with the Funds in which the account has indicated that it will invest.
 - 3.2.3. The review and approval of each Authorized Plan Account is performed under a Dual-Control Procedure.



- 3.2.4. A change in designation of any account to become an Authorized Plan Account is performed under a Dual-Control Procedure.
- 3.2.5. Documents evidencing the Intermediary's determination of the eligibility of each Authorized Plan Account are retained for a minimum of seven calendar years after the date on which the Authorized Plan Account is closed.
- 3.3. Each Authorized Plan Account is identified with an account number or account identification code that is unique to the Intermediary's Trade Processing System.
 - 3.3.1. Upon initial set-up, the Authorized Plan Account is assigned a unique account number or identification code on the Intermediary's Trade Processing System.
 - 3.3.2. Any modification to the Authorized Plan Account unique account number or identification code on the Intermediary's Trade Processing System is subject to a Dual-Control Procedure.
 - 3.3.3. A report containing a detailed record of the initial designation of each Authorized Plan Account, its unique account number or identification code and any modifications to the account number or identification code is maintained.
 - 3.3.3.1. A log is maintained of the date, time and identity of the person or entity that designates the Authorized Plan Account as such and assigns the unique account number or identification code, or modifies such designation, the account number or identification code.
 - 3.3.3.2. The log is periodically reviewed by the Senior Compliance Officer or a designee and available for inspection by auditors and regulators.
- 4. Trade Processing – Orders Submitted through After Hours Trade Processing on a business day only include Orders for an Authorized Plan Account that are the result of Instructions Received by the Pricing Time.**
 - 4.1. All Instructions and Orders to be effected in After Hours Trade Processing are recorded in electronic form on the Trade Processing System.
 - 4.1.1. The Intermediary's Trade Processing System only processes Instructions captured electronically by the Pricing Time.
 - 4.1.2. The Intermediary's Trade Processing System electronically captures the following **"Critical Trade Information"** for all Instructions or Orders.



- 4.1.2.1. Identity of the Authorized Plan Account.
- 4.1.2.2. Identity of the Fund(s).
- 4.1.2.3. In the case of an Order, the number of shares or dollar amount involved in the transaction.
- 4.1.2.4. In the case of an Instruction, all information necessary to determine an Order from the Instruction other than the Fund Price.
- 4.1.3. Records of each Instruction and Order are maintained for no less than seven calendar years and are available for inspection by auditors, Funds and regulators.
- 4.2. All Instructions to be effected in After Hours Trade Processing are automatically time stamped by the Time Stamping System at point of entry into the Trade Processing System.
 - 4.2.1. Processes for applying the time stamping comply with Section 5.
 - 4.2.2. For paper Instructions, point of entry occurs when the Instruction is captured electronically and time stamped in accordance with Section 5.
 - 4.2.3. For voice Instructions received over a telephone line, point of entry occurs when the Instruction is captured electronically and time stamped in accordance with Section 5, except as otherwise provided under Section 7.5.4, relating to System Failures.
- 4.3. Each Instruction is irrevocable as of the Pricing Time on the business day it is deemed to be Received.
 - 4.3.1. All Instructions that are neither canceled nor modified before the Pricing Time are included in an Order for execution at the Price on the business day the Instruction is Received.
 - 4.3.2. Instructions entered into the Intermediary's Trade Processing System are irrevocable at the Pricing Time and are not cancelled or removed from processing with the Orders executed at the Price on the business day the Instruction is Received.
 - 4.3.3. The Trade Processing System has electronic reporting that identifies any Instruction entered into the Trade Processing System by the Pricing Time that is removed from processing at the Price for that business day (unless properly



cancelled or modified).

- 4.3.3.1. All changes made to Critical Trade Information after the Pricing Time are subject to a Dual-Control Procedure and are reviewed by the Senior Compliance Officer or his or her designee.
 - 4.3.3.2. Access to Critical Trade Information stored in the Trade Processing System is available only to applications that log the identity of the user or operator, and the date and time of any addition, modification or deletion to Critical Trade Information.
 - 4.3.3.3. Logs with changes to Critical Trade Information are retained for a minimum of seven calendar years and are available to auditors, Funds and regulators.
- 4.4. If any Instruction entered on an Intermediary's Trade Processing System is cancelled before the Pricing Time, the cancellation of the Instruction is time-stamped.
 - 4.5. If any Instruction entered on the Intermediary's Trade Processing System is modified before the Pricing Time, the modification is performed by either (a) canceling the original Instruction and the entry of the new Instruction before the Pricing Time or (b) the Instruction is modified and a record of the original Instruction is maintained and traceable to the modified Instruction. The cancellation or modification of the original Instruction and the entry of the new or modified Instruction are both time-stamped.
 - 4.6. Only valid Instructions are included in Orders Submitted in After Hours Trade Processing on a business day.
 - 4.6.1. An Instruction is not treated as Received until all Critical Trade Information is captured electronically. See definition of Instruction in Section 1.9, for illustrations of what constitutes a valid Instruction.
 - 4.6.2. The Trade Processing System submits Orders in After Hours Processing only from Instructions Received for an Authorized Plan Account.
 - 4.6.3. The Trade Processing System submits Orders to a Fund on a business day only based on Instructions with time stamps showing the Instruction was Received by the Pricing Time.
 - 4.6.4. When processing payroll files, all data from the payroll file is captured electronically, and is complete and accurate by the Pricing Time in order to be processed at the Prices for that business day. If any Critical Trade Information from the payroll file must be edited, modified, deleted, inserted, or altered in



any way after the Pricing Time, the entire payroll file is treated as not received by the Pricing Time for that business day and is not processed as of that business day, except as may otherwise be permitted under Section 6 (relating to Order Corrections) or Section 7 (relating to System Failures). No decisions regarding whether or not any Instruction from a payroll file will or will not generate a Submitted Order is made after the Pricing Time. See Section 1.9.2 regarding funding of payroll amounts.

4.7. Where the Intermediary aggregates and nets Instructions of multiple Authorized Plan Accounts in After Hours Trade Processing, the Intermediary's Trade Processing System validates whether each Instruction included in an Order is for an Authorized Plan Account.

4.7.1. At least once per week, the Intermediary's records identifying the position of the Funds recorded on behalf of each Authorized Plan Account, and by all Authorized Plan Accounts in the aggregate, are reconciled to reports of the positions held in such Funds provided by the Funds.

4.7.1.1. Differences are researched and any differences that involve an unauthorized account are documented and reported to the Senior Compliance Officer.

4.7.1.2. Reconciliation reports are maintained and available for inspection by auditors and regulators.

4.7.2. Illustrative Controls

4.7.2.1. The Trade Processing system creates Orders only from Instructions entered on behalf of Authorized Plan Accounts.

4.8. When the Intermediary aggregates and nets Instructions or Orders of multiple Authorized Plan Accounts in After Hours Trade Processing, the Intermediary's Trade Processing System validates whether each Instruction included in an Order was Received by the Pricing Time on the business day on which the Order is submitted.

4.8.1. Illustrative Controls

4.8.1.1. The Trade Processing System submits only those Orders that result from Instructions that are received and time stamped by the Pricing Time.



- 4.8.1.2. The aggregation application or process detects any Instruction or Order from the Trade Processing System with a time stamp after the Pricing Time.
- 4.8.1.3. Any addition, modification, or deletion of Critical Trade Information complies with Section 4.3.3.
- 4.9. Every Order submitted to a Fund in After Hours Trade Processing is traceable and auditable from the original Instruction through the resulting Submitted Order.
 - 4.9.1. Each Order Submitted to a Fund is traceable through linked unique identification, reference or control numbers to the Authorized Plan Account and an Instruction Received by the Pricing Time.
 - 4.9.1.1. The history of each Order Submitted to a Fund is maintained and available for inspection by auditors, Funds, and regulators.
 - 4.9.2. Each Instruction is auditable from point of entry into the Intermediary's Trade Processing System to the resulting Submitted Order through linked unique identification, reference or control numbers.
 - 4.9.2.1. A unique transaction identification, reference or control number is assigned to each Order, or an Instruction that generates an Order.
 - 4.9.3. If the Intermediary aggregates and nets Instructions or Orders of multiple Authorized Plan Accounts, the Intermediary's Trade Processing System allows Instructions to be audited through the aggregation and netting processes (i.e., from point of entry of Instructions to the aggregated and netted Order Submitted to the Fund)
 - 4.9.4. The Intermediary can produce on demand detailed electronic reports showing:
 - (a) the audit trail for any Submitted Order traced back to Authorized Plan Account(s) and Instructions Received by the Pricing Time, and (b) the audit trail for any Instruction traced to a Submitted Order on a business day.



5. Time Stamping – Orders Submitted by the Intermediary through After Hours Trade Processing, and Instructions that result in Submitted Orders, are time-stamped in a “tamper-proof” time stamp process.

5.1. The time stamp applied or assigned to an Instruction or Order includes the date and time, to the second.

5.2. Each Instruction is time-stamped by an automated electronic “Time Stamping System.”

5.2.1. Third Party Time Stamping - The Time Stamping System used by the Intermediary may be a third party time stamping system or software application.

5.2.1.1. Illustrative Controls

5.2.1.1.1. The time stamp indicating when an Instruction or Order was present on the Intermediary’s Trade Processing System is publicly verifiable or verifiable by an independent third party.

5.2.1.1.2. The third party time stamping system includes the use of cryptographically and independently verifiable processes such as the methods specified in ISO 18014-3 and RFC 3161.

5.2.1.1.3. The third party time stamping system uses a secure standard hashing algorithm, such as SHA-1, MD-5, or similar algorithm, for each file processed.

5.2.1.1.4. If the security of the third party time stamping system relies on the protection of cryptographic keys for each applied time stamp, then the relevant cryptographic modules are protected to FIPS PUB 140-2 Level 3.

5.2.1.1.5. The Time Stamping System supports a unique path of traceability for each time stamp issued.

5.2.1.1.6. The third party time stamping system requests and responses use secure communication including a mutual authentication mechanism.



- 5.2.1.1.7. The third party time stamping system has the ability to tunnel requests as HTTPS traffic allowing for no modification or reconfiguration of the firewall.
 - 5.2.1.1.8. The Time Stamping System is 100% fault tolerant to any single component or connection failure. Multiple ISP connections assure continuous availability of the service. The time stamping system is hosted in a secure facility.
- 5.2.2. Self-Validation – The Time Stamping System may be an internal time stamping system or software application of the Intermediary.
- 5.2.2.1. Illustrative Controls
 - 5.2.2.1.1. Trade Processing System logs any access to time stamp data by anyone and logs any additions, changes or deletions to time stamp data including identification of the personnel performing the function. All logs are retained for a minimum of seven calendar years and are available to auditors, and regulators.
 - 5.2.2.1.2. Access to Trade Processing System time-stamp data is restricted to specific applications that log user/operator access. All such logs must be secured from unauthorized access.
 - 5.2.2.1.3. The source code for all Intermediary applications is protected and not accessible by unauthorized parties.
 - 5.2.2.1.4. Intermediary applications will keep an unalterable log file with entries created periodically with the current time, and for each business event.
 - 5.2.2.1.5. For each Instruction, Intermediary applications will compare the current time and ensure that it is later than the latest time stored in the log file. (This provides protection against users attempting to set the system time back to a prior time).
 - 5.2.2.1.6. All servers on which applications are installed will be configured to disallow the changing of the system time except by authorized system administrators.



- 5.2.3. The Time Stamping System applies the time stamp to the Instruction after all Critical Trade Information is electronically captured. For example, with respect to payroll files, the time stamp is applied after all initial processing of the payroll file is complete and all of the Critical Trade Information is captured electronically.
- 5.3. The electronic time stamp and Critical Trade Information in the original Instruction is preserved unaltered and available for inspection.
 - 5.3.1. The time stamp data element and Critical Trade Information for each Instruction or Order is protected from alteration after the Instruction or Order is created.
 - 5.3.1.1. Illustrative Controls
 - 5.3.1.1.1. Any changes to the Critical Trade Information for an Instruction can only occur prior to the Pricing Time for that Instruction to become an Order for that business day.
 - 5.3.1.1.2. Any change to the Critical Trade Information for an Instruction is tracked by the Trade Processing System and is logged with the identity of the user or operator, and the date and time of any addition, modification or deletion of the Critical Trade Information.
 - 5.3.1.1.3. Logs with changes to the Critical Trade Information are retained for a minimum of seven calendar years and are available to auditors, Funds and regulators.
 - 5.3.2. The Intermediary's Time Stamping System can readily produce reporting of time stamp information and Critical Trade Information with regard to all Instructions and Orders.
- 5.4. All time stamps are provided from a secure, tamper-proof time source capable of validation.
 - 5.4.1. The Intermediary's Time Stamping System is accurate to within five seconds of an independent time source. An external governmental approved time source (e.g., the National Institute of Standards and Technology ("NIST")) is presumed to be independent and accurate.
 - 5.4.2. At least one synchronization (within a 5 second tolerance) between the time applied by the Intermediary's Time Stamping System and independent time



source occurs each business day.

5.4.3. Processes for applying time stamps are protected from alteration or manipulation.

5.4.3.1. Illustrative Controls

5.4.3.1.1. The Trade Processing System is programmed to obtain time stamp values for Instructions from a machine or time source that is synchronized with the external authorized time source.

5.4.3.1.2. Random comparisons of time values on machines, or other time sources used by the Trade Processing System are made at least once per day to the external authorized time source. Any differences of more than 5 seconds are logged and reported to the Senior Compliance Officer for resolution.

5.4.3.1.3. Access to update the time value on the machine or other time sources used by the Trade Processing System, is restricted to the technology unit responsible for programming and maintaining the Time Stamping System.

5.4.4. Any programming changes or other modification to the Time Stamping System (other than synchronization within a 5 second tolerance) are subject to a Dual-Control Procedure and reviewed by the Senior Compliance Officer.

5.4.5. Adjustments to the time applied by the Time Stamping System outside of the 5-second tolerance are communicated to the Senior Compliance Officer immediately.

5.4.6. A log containing a detailed record of all synchronizations, adjustments, programming changes or other modifications to the Time Stamping System is maintained.

5.4.6.1. The log is available for inspection by auditors and regulators.

5.4.6.2. The log is maintained for seven calendar years from the date of each entry.



- 5.5. The Intermediary establishes a separation between the technology unit responsible for programming and maintaining the Time Stamping System and operational business unit(s) responsible for receiving, processing and submitting Instructions and Orders.
 - 5.5.1. The technology unit responsible for programming and maintaining the Time Stamping System, and the operational business unit(s) responsible for receiving, processing and submitting Instructions and Orders do not have common personnel.
 - 5.5.2. Operational business unit personnel only have inquiry access to the time stamp information on any Instruction or Order.
6. **Order Correction – The Intermediary does not modify, correct or cancel any Order after the Pricing Time⁸ on a business day, except to correct an Order to conform to an Instruction Received by the Pricing Time.**
 - 6.1. The Intermediary has documented policies and procedures for correcting Orders after the Pricing Time.
 - 6.1.1. The policies and procedures define the circumstances in which corrections⁹ to Orders after the Pricing Time on any business day (“Same-Day Corrections”) are permitted, which may include:
 - 6.1.1.1. Calculation errors in determining an Order caused by the incorrect entry of the Price by the Intermediary into its Trade Processing System (i.e., an Intermediary error or pricing service error).
 - 6.1.1.2. Errors in transmission of an Order to the Fund.
 - 6.1.1.2.1. Prospectus violations (e.g., order exceeds maximum single-day purchase).

⁸ Modifications, corrections or cancellations made before the Pricing Time must conform to Sections 4.4 or 4.5.

⁹ Orders modified after the Pricing Time for purposes of implementing Instructions that include an Instruction to trade a lesser available amount are not corrections. See the definition of “Instruction” under Section 1.9, which provides that an Instruction includes (a) in the case of an Instruction to liquidate a fixed dollar amount of Fund shares that cannot be satisfied from the Plan Account on the business day on which the Instruction is received, the Instruction includes a valid Instruction to liquidate the lesser number of available Fund shares held by such Plan Account, and (b) in the case of an Instruction to liquidate a fixed-dollar amount to fund a participant loan or hardship or other withdrawal under a Plan, if Plan rules or ERISA restricts liquidation of a portion of the participant’s account balance, the Instruction includes a valid Instruction to liquidate the lesser dollar amount permitted by Plan rules or ERISA. Changes to an Order to reflect Instructions applying to the lesser available amount in these circumstances are not treated as corrections provided that the Intermediary’s Trade Processing Systems can maintain an audit trail showing how application of Price information impacts the Instruction and resulting Order.



- 6.1.1.2.2. Incorrect coding or erroneous information included in an Order (*e.g.*, incorrect CUSIP, or account number).
- 6.1.1.3. Fund corrections.
 - 6.1.1.3.1. An Order correction for a Fund resulting from an erroneous Price received from the Fund or any other Fund.
 - 6.1.1.3.2. Rejection by a Fund of a Submitted Order in error (*e.g.*, perceived prospectus violation, mis-processed trade file).
- 6.1.1.4. In the case of an Instruction to liquidate a fixed dollar amount or fixed share amount that will overdraft a Plan Account or a participant account within a Plan Account, the Instruction or Instructions includes a provision to liquidate a lesser amount of Fund shares.
- 6.1.1.5. In the case of two or more Instructions that create a transaction conflict within an individual participant account or the Plan Account on the business day on which the Instruction(s) are received, the Instruction(s) include a provision to liquidate a lesser amount of Fund shares held by the Plan Account, provided that the Intermediary's Trade Processing Systems maintain an audit trail of the original Instruction(s).
- 6.1.2. The policies and procedures prohibit Same-Day Corrections under the following circumstances.
 - 6.1.2.1. Any change made after the Pricing Time to modify or cancel an Instruction Received by the Intermediary by the Pricing Time, except that any such Instruction may be modified or cancelled prior to the Pricing Time in accordance with Section 4.4 or 4.5.
 - 6.1.2.2. Any error made by the Intermediary in connection with entering and processing Instructions on a business day may not be modified or corrected after the Pricing Time, unless the basis for such change was present on the Intermediary's Trade Processing Systems prior to the Pricing Time and time stamped in accordance with Section 5.
- 6.1.3. The policies and procedures provide for a Dual-Control Procedure for Same Day Corrections.



- 6.2. The Intermediary does not correct, modify or cancel any Order after the Pricing Time, unless in connection with a permissible Same Day Correction.¹⁰
 - 6.2.1. Same Day Corrections are only performed in permissible circumstances in accordance with the Intermediary's policies and procedures.
 - 6.2.2. Each Same Day Correction is based on an underlying Instruction that is supported by electronic evidence that the Instruction was Received by the Pricing Time.
 - 6.2.3. Each Same Day Correction is approved by a Dual-Control Procedure.
- 6.3. The Intermediary documents each Same Day Correction.
 - 6.3.1. The documentation includes a system-generated report that includes the following.
 - 6.3.1.1. Identifies the erroneous Instruction or Order, and date and time of entry into the trade processing system.
 - 6.3.1.2. Identifies the correcting Instruction or Order, and the date and time of submission.
 - 6.3.1.3. The affected Plan Account(s)
 - 6.3.1.4. The affected Fund Account(s)
 - 6.3.1.5. Agent or operator performing correction
 - 6.3.1.6. Reviewer of the correction
 - 6.3.2. The documentation also includes the following information:
 - 6.3.2.1. Nature of error and correction
 - 6.3.2.2. Reference to other supporting documentation and its location

¹⁰ An Intermediary may correct any error (including errors for which Same Day Correction are permitted as well as any other errors) by submission of a correcting Order to the Fund by any means acceptable to the Fund (e.g., manually, electronically, or by telephone) by the Pricing Time on a business day, or by electronic entry of an Instruction into the Trade Processing System by the Pricing Time.



- 6.3.3. The documentation is maintained and available for inspection by auditors, Funds and regulators.
 - 6.3.3.1. The documentation is maintained for seven calendar years.
- 7. **System Failures – The Intermediary has reasonable policies, procedures and controls in place relating to “System Failures” that provide for the submission of Orders relating to Instructions received prior to the Pricing Time on a business day.**
 - 7.1. A “**System Failure**” means the temporary or permanent failure or cessation of the ability of any computer, electronic, telephone, internet, and any other technologically based system to perform its required functions, except that any failure or cessation caused by the intentional or willful misconduct by or on behalf of the Intermediary shall not be deemed to be a System Failure. Routine data or processing errors that cause the Trade Processing System to terminate an otherwise properly operating function or to stop processing a transaction do not constitute a System Failure (e.g., Trade Processing System fails to process a payroll file because of incorrect data within the file), and any such processing must be completed by the Pricing Time, unless otherwise eligible for Order Correction under Section 6.
 - 7.2. “**Processing Disruption**” means a System Failure that:
 - 7.2.1. Causes one or more of the Intermediary’s Trade Processing Systems to become inoperative.
 - 7.2.2. Causes the Intermediary to be unable to complete the electronic processing of Instructions received prior to the Pricing Time for that business day and fail to include such Instructions in the Orders Submitted on that business day.
 - 7.3. The Intermediary has documented its policies, procedures and controls for processing Instructions and Orders in the event of a Processing Disruption.
 - 7.3.1. The policies and procedures provide a Dual-Control Procedure for approving the handling of Instructions and Orders impacted by the Processing Disruption, in accordance with Section 7.5, below.
 - 7.4. The Intermediary documents each Processing Disruption.
 - 7.4.1. The documentation includes a system-generated report that identifies the occurrence of a System Failure, where possible.
 - 7.4.2. The documentation includes the following:



- 7.4.2.1. A description of the nature and cause of the Processing Disruption, including information regarding the systems involved, the manner and time of identification, and the duration.
 - 7.4.2.2. An explanation regarding the steps taken to resolve the Processing Disruption and the time it was resolved.
 - 7.4.2.3. Dual-Control Procedure approval regarding the handling of any Instructions or Orders impacted by the Processing Disruption, in accordance with the procedures provided for in Section 7.5.
- 7.5. On any business day that a Processing Disruption occurs, the Intermediary submits all recoverable Instructions and Orders that the Intermediary Received, provided that the Intermediary electronically “time stamps” the Instructions or Orders prior to the Pricing Time on that business day.
- 7.5.1. The Orders Submitted in accordance with this section are traceable back to the Instruction regardless of the manner in which they are submitted to the Fund, provided that they are submitted in a manner acceptable to the Fund.
 - 7.5.2. The Intermediary does not knowingly withhold from submission any Instructions or Orders that are electronically time stamped prior to the Pricing Time on that business day.
 - 7.5.3. The Intermediary only submits the Instructions and Orders that the Intermediary Received and electronically time stamped prior to the Pricing Time for the trading day. In the event that a Processing Disruption causes Instructions or Orders to become unrecoverable, the Intermediary only submits recoverable Instructions and Orders that the Intermediary Received and electronically time stamped prior to the Pricing Time for the trading day.
 - 7.5.4. Time stamped voice Instructions as back-up during System Failure – In the case of a System Failure, only Instructions that include Critical Trade Information that is captured electronically in an alternative format that is time stamped prior to the Pricing Time in accordance with Section 5 are included in After Hours Processing for that business day.
- 8. System Controls and Security – The Intermediary has reasonable policies, procedures and controls in place to ensure adequate physical security and logical access control of the systems it uses in connection with After Hours Trade Processing.**
- 8.1. The policies, procedures and controls in place to ensure adequate physical security and logical access control of the Trade Processing Systems have been reviewed and tested



by an independent accounting firm during the current or previous calendar year and the results of such review are contained in a report prepared in accordance with the Statement on Auditing Standards No. 70 (typically referred to as a “SAS 70 Report”).

- 8.1.1. The most recently issued SAS-70 Report for the current or previous calendar year is available for review.
- 8.1.2. The most recently issued SAS-70 Report demonstrates that the policies, procedures and controls in place to ensure physical security and logical access control of the Trade Processing Systems are operating with sufficient effectiveness to provide reasonable assurance that the Trade Processing Systems are properly controlled.
- 8.2. If a SAS-70 Report is not available or at the option of the Intermediary, the policies, procedure and controls in place to ensure adequate physical security and logical access control of the Trade Processing Systems may be reviewed and tested by the independent accounting firm conducting the After Hours Trade Processing review.
 - 8.2.1. The review is conducted in accordance with relevant AICPA auditing guidelines.
 - 8.2.2. The results of the review are contained in a written report, and available for inspection.
 - 8.2.3. The review demonstrates that policies, procedures and controls in place to ensure physical security and logical access control of the Trade Processing Systems are operating with sufficient effectiveness to provide reasonable assurance that the Trade Processing Systems are properly controlled.
 - 8.2.4. Illustrative Controls
 - 8.2.4.1. Logical Access
 - 8.2.4.1.1. User access requires approval by authorized manager or business unit coordinator.
 - 8.2.4.1.2. An authorized manager or business unit coordinator maintains all access levels and grants access only after appropriate level of authorization is obtained and is notified when an employee has changed responsibilities or employment status.
 - 8.2.4.2. Physical Access



- 8.2.4.2.1. The communication and computer rooms are secured using a security mechanism that is changed periodically to prevent unauthorized access.
 - 8.2.4.2.2. Access is restricted to authorized information systems processing personnel and is reviewed and updated for changes in responsibilities and employment status.
 - 8.2.4.2.3. The computer rooms are equipped with air conditioners and a fire suppression system including a fire sprinkler system, fire alarm, fire extinguisher and a fire detection system consisting of heat and smoke detectors.
 - 8.2.4.2.4. The computer rooms are equipped with an uninterruptible power supply including surge suppression and an alternative power supply.
- 8.3 Where the Intermediary provides computer, telephone or other electronic trading applications or systems that are owned, maintained, operated or controlled by the Intermediary for use by one or more TPAs in capturing and submitting Instructions or Orders to the Intermediary's Trade Processing System, the requirements under Section 10 are satisfied with respect to each TPA, and the Intermediary's policies, procedures and controls in place to ensure physical security and logical access control address the TPAs' use of the Intermediary's Trade Processing Systems.
- 8.3.1 The Intermediary's Trade Processing System restricts the ability of the TPA to revoke, modify, cancel or add to Instructions or Orders after the Pricing Time, or to in any way interfere with or alter the creation of Orders from Instructions after the Pricing Time.

9. Compliance Oversight – The Intermediary has policies and procedures in place that provide for management oversight of After Hours Trade Processing and the effectiveness of After Hours Trade Processing controls, policies and procedures.

- 9.1. Where required,¹¹ the Intermediary maintains appropriate Dual-Control Procedures.
 - 9.1.1. The Intermediary's Dual-Control Procedures require that an issue or action is reviewed and approved by at least two persons.

¹¹ Dual-Control Procedures are required under Section 3 (Authorization of Authorized Plan Accounts), Section 6 (Order Correction), and Section 7 (System Failures).



- 9.1.1.1. By way of illustration, an issue or action is subject to a Dual-Control Procedure if the issue or action initially reviewed and approved by a system operator, and then reviewed and approved by the operator's immediate supervisor before the issue or action is effected.
- 9.1.1.2. Committee review and approval of an issue or action initiated by an individual also constitutes a Dual-Control Procedure.
- 9.1.2. Each person authorized to review and approve matters or actions under the Dual-Control Procedure or provide any other approval required in connection with After Hours Trade Processing is designated in writing by name, position or title.
- 9.1.3. The Dual-Control Procedure includes a process for documenting in writing or electronically the identity of persons responsible for review and approval of the issue or action.
- 9.2. A "Senior Compliance Officer" responsible for overall compliance of the Intermediary's After Hours Trade Processing processes and review of reports relating to After Hours Trade Processing is designated.
 - 9.2.1. A Senior Compliance Officer and at least one alternate are designated.
 - 9.2.2. The Senior Compliance Officer (and any alternate) is not supervised by and does not supervise personnel operating or maintaining the Trade Processing System or their immediate supervisors.
 - 9.2.3. The Senior Compliance Officer reports directly to a "Senior Executive Officer" of the Intermediary who has oversight responsibility over compliance (*e.g.*, its chief executive officer, legal department, or the executive officer in charge of the business line that submits Orders for After Hours Trade Processing).
- 9.3. Material issues are reported and reviewed by management.
 - 9.3.1. The Trade Processing System automatically generates daily "Red-Flag Reports" for delivery to the Senior Compliance Officer, which identify:
 - 9.3.1.1. any changes to the electronic date-time stamp or Critical Trade Information of an Instruction after initial entry of such information on the Trade Processing System, other than a modification or cancellation of an Instruction before the Pricing Time;



- 9.3.1.2. any cancellation, correction or modification of an Order after the Pricing Time, unless reported as an approved Same Day Correction under Section 6;
- 9.3.1.3. any evidence of the possible inclusion in an Order of an Instruction or Order for an account that is not an Authorized Plan Account or an Instruction or Order Received after the Pricing Time.
- 9.3.2. The Senior Compliance Officer reviews the following:
 - 9.3.2.1. Every issue identified by a Red-Flag Report.
 - 9.3.2.2. The policies, procedure and controls relating to After Hours Processing, and any material changes thereto.
 - 9.3.2.3. A record of review (including identification and resolution of any issues) is maintained and available for inspection by auditors, and regulators.
- 9.3.3. The Trade Processing System automatically generates the following reports for delivery to the Senior Compliance Officer or a designee on his or her staff.
 - 9.3.3.1. Periodic reports showing the opening of each Authorized Plan Account and any change in account set-up information of an account to identify it as an Authorized Plan Account.
 - 9.3.3.2. Daily reports of Same Day Corrections approved under Section 6.
 - 9.3.3.3. Daily reports of programming changes, adjustments and any other modifications to the Time Stamping System (outside of synchronization within the 5 second tolerance).
- 9.3.4. The Senior Compliance Officer or a designee on his or her staff periodically reviews the following:
 - 9.3.4.1. The reports provided in accordance with Section 9.3.3.
 - 9.3.4.2. The documentation reports and logs provided under Section 3.3 (record of designation of and modifications to Authorized Plan Accounts), Section 5.4 (records of synchronizations, adjustments, programming changes and other modifications of the Time Stamping System), Section 6.3 (Same Day Corrections), and Section 7.4 (Processing Disruptions).



- 9.3.4.3. Records of this periodic review together with any resolution of issues identified are maintained and available for inspection by auditors and regulators.
- 9.3.5. The Senior Compliance Officer reports all material issues to the Senior Executive Officer.
 - 9.3.5.1. “Material” issues include the opening of any ineligible account as an Authorized Plan Account, and any possible incidents of Late-Trading.
- 9.3.6. The Senior Executive Officer or Senior Compliance Officer reports any Late-Trading to the affected Fund(s).
- 9.4. All policies and procedures relating to After Hours Trade Processing:
 - 9.4.1. Comply in all material respects with the standards set forth herein.
 - 9.4.2. Are approved by the Senior Compliance Officer.
 - 9.4.3. Are communicated as applicable to the Intermediary’s personnel responsible for the functions affected by such policies and procedures.
- 10. Third Party Administrator Arrangements (“TPA”) – The Intermediary only accepts Instructions and Orders for After Hours Trade Processing from a TPA that acts on behalf of a Plan Account if the TPA either (a) submits such Instructions or Orders to the Intermediary by the Pricing Time, or (b) meets the requirements for submitting Instructions and Orders in After Hours Trade Processing under applicable SEC rules and AHP Agreements.**
 - 10.1. A “TPA” is a plan service provider for an Authorized Plan Account that submits Instructions or Orders for such Authorized Plan Account to an Intermediary for After Hours Trade Processing.
 - 10.2. The Intermediary only accepts Instructions and Orders for After Hours Trade Processing from a TPA if the TPA either (a) electronically submits such Instructions or Orders to the Intermediary by the Pricing Time, or (b) meets the requirements for After Hours Trade Processing under applicable SEC rules.
 - 10.3. In the case of Instructions or Orders Received electronically by an Intermediary from a TPA by the Pricing Time, or entered electronically by the TPA to systems or applications owned, maintained, operated or controlled by the Intermediary as part of the Intermediary's Trade Processing System, such Instructions and Orders are time



stamped by the Intermediary's Trade Processing System or by the systems owned, maintained, operated or controlled by the Intermediary, in accordance with Section 5.

10.3.1. Upon receipt of such Instruction and Orders, such Instructions and Orders are otherwise processed by the Intermediary following the Intermediary's policies, procedures and controls applicable to Instructions and Orders received directly from an Authorized Plan Account.

10.3.2. Any TPA that submits Instructions or Orders to an Intermediary for After Hours trade Processing under Section 10.3 satisfies the requirements of Section 3 (relating to Authorization of Authorized Plan Accounts) by any one of the following methods-

10.3.2.1. The TPA undertakes to satisfy the requirements of Section 3. The TPA provides to the Intermediary on an annual basis an independent accountant compliance attestation examination report relating solely to the authorization of Authorized Plan Accounts in accordance with SEC rules. The TPA provides to the Intermediary on an annual basis a Senior Executive Officer certification that provides that the TPA has policies, procedure and controls in place meeting the requirements of Section 3 and that no Instructions or Orders for an unauthorized account were submitted for After Hours Trade Processing.

10.3.2.2. The TPA undertakes to satisfy the requirements of Section 3, and provides a Senior Executive Officer Certification to the Intermediary as provided under Section 10.3.2.1. The accountant engaged by the Intermediary to perform the Intermediary's independent compliance attestation examination report examines the TPA's compliance with Section 3 as part of its examination of the Intermediary.

10.3.2.3. The Intermediary reviews all new accounts with respect to which the TPA proposes to submit Instructions or Orders to the Intermediary for After Hours Trade Processing. Such new accounts are approved by the Intermediary in accordance with its policies, procedures and controls meeting the requirements of Section 3 before the Intermediary accepts any Instructions or Orders for the TPA from the account.

10.3.3. Where the Intermediary provides computer, telephone or other electronic trading applications or systems that are owned, maintained, operated or controlled by the Intermediary for the TPA's use in capturing and submitting Instructions or Orders to the Intermediary's Trade Processing System, the Intermediary may treat any Orders or Instructions entered electronically through such systems to the Intermediary's Trade Processing System by the Pricing



Time as Received by the Pricing Time, provided that there are systems controls in place to ensure that the TPA may not revoke, modify, cancel or add to the Orders or Instructions after the Pricing Time. This does not preclude the Intermediary from correcting an Order Submitted by the TPA in accordance with Section 6.

10.4. In the case where Instructions or Orders are not electronically submitted by the TPA and received by the Intermediary before the Pricing Time, the TPA meets the requirements for After Hours Trade Processing under applicable SEC rules (including these criteria) and AHP Agreements.

10.4.1. The TPA After Hours Trade Processing arrangement is authorized and documented in one or more written agreements.

10.4.1.1. The Intermediary is authorized in its AHP Agreements with the Funds to accept Instructions and Orders from TPAs that act on behalf of Authorized Plan Accounts.

10.4.1.2. The TPA enters into a written agreement with the Intermediary authorizing the TPA to accept Instructions and Orders by the Pricing Time and submit Instructions and Orders to the Intermediary after the Pricing Time for After Hours Trade Processing.

10.4.1.2.1. The agreement identifies the types of investors (e.g., Plans) from which the TPA may accept Instructions and Orders for After Hours Trade Processing.

10.4.1.2.2. The agreement identifies the Funds (either individually or by Fund family) with respect to which the TPA may accept Instructions and Orders for After Hours Trade Processing.

10.4.1.2.3. The agreement requires the TPA to comply with these criteria.

10.4.1.2.4. The agreement includes all other applicable terms required under applicable SEC rules.

10.4.2. The Intermediary receives from the TPA on an annual basis copies of the TPA's independent accountant compliance attestation examination report and the TPA's Senior Executive Officer certification in accordance with applicable SEC rules.



- 10.4.2.1. The Intermediary's Senior Compliance Officer maintains copies of the TPA's independent accountant compliance attestation examination report and the TPA's Senior Executive Officer certification and said documents are available to the Funds on request.
 - 10.4.2.2. Where a TPA's Trade Processing System incorporates or utilizes one or more computer, telephone, or other electronic systems that are operated, maintained and controlled by an Intermediary, the independent accountant compliance attestation examination of the TPA's Trade Processing System may exclude an examination of said Intermediary's system provided that the Intermediary's system is examined as part of the Intermediary's own independent accountant compliance attestation examination.
- 10.5. The Intermediary has adequate policies, procedures and controls in place to reasonably assure itself that the requirements of this Section 10 are satisfied.
- 10.5.1. In the case where the TPA submits Instructions or Orders to the Intermediary under Section 10.3, the Intermediary may rely on the TPA's independent accountant compliance attestation examination report, if applicable, and the TPA's Senior Executive Officer certification, if applicable, in order to assure itself that the requirements of Section 10 are satisfied with respect to the TPA.