

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

1401 H St. NW
Washington, DC 20005

INVESTMENT COMPANY BLANKET BOND

ICI MUTUAL INSURANCE COMPANY, a Risk Retention Group

1401 H St. NW
Washington, DC 20005

DECLARATIONS

NOTICE

This policy is issued by your risk retention group. Your risk retention group may not be subject to all of the insurance laws and regulations of your state. State insurance insolvency guaranty funds are not available for your risk retention group.

| | | |
|----------------|--|---------------------------------|
| Item 1. | Name of Insured (the "Insured") The Vanguard Group, Inc. | Bond Number 87117119B |
|----------------|--|---------------------------------|

Principal Office:
The Vanguard Group, Inc.
100 Vanguard Blvd.
Malvern, PA 19355

Mailing Address:
The Vanguard Group, Inc.
100 Vanguard Blvd.
Malvern, PA 19355

Item 2. Bond Period: from 12:01 a.m. on August 1, 2019, to 12:01 a.m. on August 1, 2020, or the earlier effective date of the termination of this Bond, standard time at the Principal Office as to each of said dates.

Item 3. Limit of Liability--
Subject to Sections 9, 10, and 12 hereof:

| | | LIMIT OF LIABILITY | DEDUCTIBLE AMOUNT |
|-----------------------|--------------------------------|-----------------------|----------------------|
| Insuring Agreement A- | FIDELITY | \$400,000,000 | \$1,000,000 |
| Insuring Agreement B- | AUDIT EXPENSE | \$50,000 | \$10,000 |
| Insuring Agreement C- | ON PREMISES | \$400,000,000 | \$1,000,000 |
| Insuring Agreement D- | IN TRANSIT | \$400,000,000 | \$1,000,000 |
| Insuring Agreement E- | FORGERY OR ALTERATION | \$400,000,000 | \$1,000,000 |
| Insuring Agreement F- | SECURITIES | \$400,000,000 | \$1,000,000 |
| Insuring Agreement G- | COUNTERFEIT CURRENCY | \$400,000,000 | \$1,000,000 |
| Insuring Agreement H- | UNCOLLECTIBLE ITEMS OF DEPOSIT | \$25,000 | \$5,000 |
| Insuring Agreement I- | PHONE/ELECTRONIC TRANSACTIONS | \$400,000,000 | \$1,000,000 |

If "Not Covered" is inserted opposite any Insuring Agreement above, such Insuring agreement and any reference thereto shall be deemed to be deleted from this Bond.

OPTIONAL INSURING AGREEMENTS ADDED BY RIDER:

| | | | |
|-----------------------|--|---------------|-------------|
| Insuring Agreement J- | COMPUTER SECURITY | \$400,000,000 | \$1,000,000 |
| Insuring Agreement M- | SOCIAL ENGINEERING FRAUD | \$1,000,000 | \$1,000,000 |
| Insuring Agreement N- | PHONE/ELECTRONIC TRANSACTIONS - INVESTMENT ADVISORY CLIENTS | \$3,000,000 | \$1,000,000 |

Item 4. Offices or Premises Covered--All the Insured's offices or other premises in existence at the time this Bond becomes effective are covered under this Bond, except the offices or other premises excluded by Rider. Offices or other premises acquired or established after the effective date of this Bond are covered subject to the terms of General Agreement A.

Item 5. The liability of ICI Mutual Insurance Company, a Risk Retention Group (the "Underwriter") is subject to the terms of the following Riders attached hereto:

Riders: 1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17

and of all Riders applicable to this Bond issued during the Bond Period.

By: /S/ Swenitha Nalli
Authorized Representative

By: /S/ John T. Mulligan
Authorized Representative

INVESTMENT COMPANY BLANKET BOND

NOTICE

This policy is issued by your risk retention group. Your risk retention group may not be subject to all of the insurance laws and regulations of your state. State insurance insolvency guaranty funds are not available for your risk retention group.

ICI Mutual Insurance Company, a Risk Retention Group (the “Underwriter”), in consideration of an agreed premium, and in reliance upon the Application and all other information furnished to the Underwriter by the Insured, and subject to and in accordance with the Declarations, General Agreements, Provisions, Conditions and Limitations and other terms of this bond (including all riders hereto) (“Bond”), to the extent of the Limit of Liability and subject to the Deductible Amount, agrees to indemnify the Insured for the loss, as described in the Insuring Agreements, sustained by the Insured at any time but discovered during the Bond Period.

INSURING AGREEMENTS

A. FIDELITY

Loss resulting directly from any Dishonest or Fraudulent Act committed by an Employee, committed anywhere and whether committed alone or in collusion with other persons (whether or not Employees), during the time such Employee has the status of an Employee as defined herein, and even if such loss is not discovered until after he or she ceases to be an Employee; and EXCLUDING loss covered under Insuring Agreement B.

B. AUDIT EXPENSE

Expense incurred by the Insured for that part of the costs of audits or examinations required by any governmental regulatory authority or Self-Regulatory Organization to be conducted by such authority or Organization or by an independent accountant or other person, by reason of the discovery of loss sustained by the Insured and covered by this Bond.

C. ON PREMISES

Loss of Property resulting directly from any Mysterious Disappearance, or any Dishonest or Fraudulent Act committed by a person physically present in an office or on the premises of the Insured at the time the Property is surrendered, while the Property is (or reasonably supposed or believed by the Insured to be) lodged or deposited within the Insured’s offices or premises located anywhere, except those offices excluded by Rider; and EXCLUDING loss covered under Insuring Agreement A.

D. IN TRANSIT

Loss of Property resulting directly from any Mysterious Disappearance or Dishonest or Fraudulent Act while the Property is physically (not electronically) in transit anywhere in the custody of any person authorized by an Insured to act as a messenger, except while in the mail or with a carrier for hire (other than a Security Company); and EXCLUDING loss covered under Insuring Agreement A. Property is “in transit” beginning immediately upon receipt of such Property by the transporting person and ending immediately upon delivery to the designated recipient or its agent, but only while the Property is being conveyed.

E. FORGERY OR ALTERATION

Loss resulting directly from the Insured having, in good faith, paid or transferred any Property in reliance upon any Written, Original:

- (1) bills of exchange, checks, drafts, or other written orders or directions to pay sums certain in money, acceptances, certificates of deposit, due bills, money orders, warrants, orders upon public treasuries, or letters of credit; or
- (2) instructions, requests or applications directed to the Insured, authorizing or acknowledging the transfer, payment, redemption, delivery or receipt of money or Property, or giving notice of any bank account (provided such instructions or requests or applications purport to have been signed or endorsed by (a) any customer of the Insured, or (b) any shareholder of or subscriber to shares issued by any Investment Company, or (c) any financial or banking institution or stockbroker, and further provided such instructions, requests, or applications either bear the forged signature or endorsement or have been altered without the knowledge and consent of such customer, such shareholder or subscriber to shares issued by an Investment Company, or such financial or banking institution or stockbroker); or
- (3) withdrawal orders or receipts for the withdrawal of Property, or receipts or certificates of deposit for Property and bearing the name of the Insured as issuer or of another Investment Company for which the Insured acts as agent;

which bear (a) a Forgery, or (b) an Alteration, but only to the extent that the Forgery or Alteration directly causes the loss.

Actual physical possession by the Insured or its authorized representative of the items listed in (1) through (3) above is a condition precedent to the Insured having relied upon the items.

This Insuring Agreement E does not cover loss caused by Forgery or Alteration of Securities or loss covered under Insuring Agreement A.

F. SECURITIES

Loss resulting directly from the Insured, in good faith, in the ordinary course of business, and in any capacity whatsoever, whether for its own account or for the account of others, having acquired, accepted or received, or sold or delivered, or given any value, extended any credit or assumed any liability in reliance on any Written, Original Securities, where such loss results from the fact that such Securities prove to:

- (1) be Counterfeit, but only to the extent that the Counterfeit directly causes the loss, or
- (2) be lost or stolen, or
- (3) contain a Forgery or Alteration, but only to the extent the Forgery or Alteration directly causes the loss,

and notwithstanding whether or not the act of the Insured causing such loss violated the constitution, by-laws, rules, or regulations of any Self-Regulatory Organization, whether or not the Insured was a member thereof.

This Insuring Agreement F does not cover loss covered under Insuring Agreement A.

Actual physical possession by the Insured or its authorized representative of the Securities is a condition precedent to the Insured having relied upon the Securities.

G. COUNTERFEIT CURRENCY

Loss resulting directly from the receipt by the Insured, in good faith of any Counterfeit Currency.

This Insuring Agreement G does not cover loss covered under Insuring Agreement A.

H. UNCOLLECTIBLE ITEMS OF DEPOSIT

Loss resulting directly from the payment of dividends, issuance of Fund shares or redemptions or exchanges permitted from an account with the Fund as a consequence of

- (1) uncollectible Items of Deposit of a Fund's customer, shareholder or subscriber credited by the Insured or its agent to such person's Fund account, or
- (2) any Item of Deposit processed through an automated clearing house which is reversed by a Fund's customer, shareholder or subscriber and is deemed uncollectible by the Insured;

PROVIDED, that (a) Items of Deposit shall not be deemed uncollectible until the Insured's collection procedures have failed, (b) exchanges of shares between Funds with exchange privileges shall be covered hereunder only if all such Funds are insured by the Underwriter for uncollectible Items of Deposit, and (c) the Insured Fund shall have implemented and maintained a policy to hold Items of Deposit for the minimum number of days stated in its Application (as amended from time to time) before paying any dividend or permitting any withdrawal with respect to such Items of Deposit (other than exchanges between Funds). Regardless of the number of transactions between Funds in an exchange program, the minimum number of days an Item of Deposit must be held shall begin from the date the Item of Deposit was first credited to any Insured Fund.

This Insuring Agreement H does not cover loss covered under Insuring Agreement A.

I. PHONE/ELECTRONIC TRANSACTIONS

Loss resulting directly from a Phone/Electronic Transaction, where the request for such Phone/Electronic Transaction:

- (1) is transmitted to the Insured or its agents by voice over the telephone or by Electronic Transmission; and
- (2) is made by an individual purporting to be a Fund shareholder or subscriber or an authorized agent of a Fund shareholder or subscriber; and
- (3) is unauthorized or fraudulent and is made with the manifest intent to deceive;

PROVIDED, that the entity receiving such request generally maintains and follows during the Bond Period all Phone/Electronic Transaction Security Procedures with respect to all Phone/Electronic Transactions; and

EXCLUDING loss resulting from:

- (1) the failure to pay for shares attempted to be purchased; or
- (2) any redemption of Investment Company shares which had been improperly credited to a shareholder's account where such shareholder (a) did not cause, directly or indirectly, such shares to be credited to such account, and (b) directly or indirectly received any proceeds or other benefit from such redemption; or
- (3) any redemption of shares issued by an Investment Company where the proceeds of such redemption were requested (i) to be paid or made payable to other than an Authorized Recipient or an Authorized Bank Account or (ii) to be sent to other than an Authorized Address;
- (4) the intentional failure to adhere to one or more Phone/Electronic Transaction Security Procedures; or
- (5) a Phone/Electronic Transaction request transmitted by electronic mail or transmitted by any method not subject to the Phone/Electronic Transaction Security Procedures; or
- (6) the failure or circumvention of any physical or electronic protection device, including any firewall, that imposes restrictions on the flow of electronic traffic in or out of any Computer System.

This Insuring Agreement I does not cover loss covered under Insuring Agreement A, "Fidelity" or Insuring Agreement J, "Computer Security".

GENERAL AGREEMENTS

A. ADDITIONAL OFFICES OR EMPLOYEES—CONSOLIDATION OR MERGER—NOTICE

1. Except as provided in paragraph 2 below, this Bond shall apply to any additional office(s) established by the Insured during the Bond Period and to all Employees during the Bond Period, without the need to give notice thereof or pay additional premiums to the Underwriter for the Bond Period.
2. If during the Bond Period an Insured Investment Company shall merge or consolidate with an institution in which such Insured is the surviving entity, or purchase substantially all the assets or capital stock of another institution, or acquire or create a separate investment portfolio, and shall within sixty (60) days notify the Underwriter thereof, then this Bond shall automatically apply to the Property and Employees resulting from such merger, consolidation, acquisition or creation from the date thereof; provided, that the Underwriter may make such coverage contingent upon the payment of an additional premium.

B. WARRANTY

No statement made by or on behalf of the Insured, whether contained in the Application or otherwise, shall be deemed to be an absolute warranty, but only a warranty that such statement is true to the best of the knowledge of the person responsible for such statement.

C. COURT COSTS AND ATTORNEYS' FEES

The Underwriter will indemnify the Insured against court costs and reasonable attorneys' fees incurred and paid by the Insured in defense of any legal proceeding brought against the Insured seeking recovery for any loss which, if established against the Insured, would constitute a loss covered under the terms of this Bond; provided, however, that with respect to Insuring Agreement A this indemnity shall apply only in the event that:

1. an Employee admits to having committed or is adjudicated to have committed a Dishonest or Fraudulent Act which caused the loss; or
2. in the absence of such an admission or adjudication, an arbitrator or arbitrators acceptable to the Insured and the Underwriter concludes, after a review of an agreed statement of facts, that an Employee has committed a Dishonest or Fraudulent Act which caused the loss.

The Insured shall promptly give notice to the Underwriter of any such legal proceeding and upon request shall furnish the Underwriter with copies of all pleadings and other papers therein. At the Underwriter's election the Insured shall permit the Underwriter to conduct the defense of such legal proceeding in the Insured's name, through attorneys of the Underwriter's selection. In such event, the Insured shall give all reasonable information and assistance which the Underwriter shall deem necessary to the proper defense of such legal proceeding.

If the amount of the Insured's liability or alleged liability in any such legal proceeding is greater than the amount which the Insured would be entitled to recover under this Bond (other than pursuant to this General Agreement C), or if a Deductible Amount is applicable, or both, the indemnity liability of the Underwriter under this General Agreement C is limited to the proportion of court costs and attorneys' fees incurred and paid by the Insured or by the Underwriter that the amount which the Insured would be entitled to recover under this Bond (other than pursuant to this General Agreement C) bears to the sum of such amount plus the amount which the Insured is not entitled to recover. Such indemnity shall be in addition to the Limit of Liability for the applicable Insuring Agreement.

D. INTERPRETATION

This Bond shall be interpreted with due regard to the purpose of fidelity bonding under Rule 17g-1 under the Investment Company Act of 1940 (i.e., to protect innocent third parties from harm) and to the structure of the investment management industry (in which a loss of Property resulting from a cause described in any Insuring Agreement ordinarily gives rise to a potential legal liability on the part of the Insured), such that the term "loss" as used herein shall include an Insured's legal liability for direct compensatory damages resulting directly from a misappropriation, or measurable diminution in value, of Property.

**THIS BOND, INCLUDING THE FOREGOING INSURING AGREEMENTS
AND GENERAL AGREEMENTS, IS SUBJECT TO THE FOLLOWING
PROVISIONS, CONDITIONS AND LIMITATIONS:**

SECTION 1. DEFINITIONS

The following terms used in this Bond shall have the meanings stated in this Section:

- A. “Alteration”** means the marking, changing or altering in a material way of the terms, meaning or legal effect of a document with the intent to deceive.
- B. “Application”** means the Insured’s application (and any attachments and materials submitted in connection therewith) furnished to the Underwriter for this Bond.
- C. “Authorized Address”** means (1) any Officially Designated address to which redemption proceeds may be sent, (2) any address designated in writing (not to include Electronic Transmission) by the Shareholder of Record and received by the Insured at least one (1) day prior to the effective date of such designation, or (3) any address designated by voice over the telephone or by Electronic Transmission by the Shareholder of Record at least 15 days prior to the effective date of such designation.
- D. “Authorized Bank Account”** means any Officially Designated bank account to which redemption proceeds may be sent.
- E. “Authorized Recipient”** means (1) the Shareholder of Record, or (2) any other Officially Designated person to whom redemption proceeds may be sent.
- F. “Computer System”** means (1) computers with related peripheral components, including storage components, (2) systems and applications software, (3) terminal devices, (4) related communications networks or customer communication systems, and (5) related electronic funds transfer systems; by which data or monies are electronically collected, transmitted, processed, stored or retrieved.
- G. “Counterfeit”** means a Written imitation of an actual valid Original which is intended to deceive and to be taken as the Original.
- H. “Cryptocurrency”** means a digital or electronic medium of exchange, operating independently of a central bank, in which encryption techniques are used to regulate generation of units and to verify transfer of units from one person to another.
- I. “Currency”** means a medium of exchange in current use authorized or adopted by a domestic or foreign government as part of its official currency.
- J. “Deductible Amount”** means, with respect to any Insuring Agreement, the amount set forth under the heading “Deductible Amount” in Item 3 of the Declarations or in any Rider for such Insuring Agreement, applicable to each Single Loss covered by such Insuring Agreement.
- K. “Depository”** means any “securities depository” (other than any foreign securities depository) in which an Investment Company may deposit its Securities in accordance with Rule 17f-4 under the Investment Company Act of 1940.

- L. “Dishonest or Fraudulent Act”** means any dishonest or fraudulent act, including “larceny and embezzlement” as defined in Section 37 of the Investment Company Act of 1940, committed with the conscious manifest intent (1) to cause the Insured to sustain a loss and (2) to obtain an improper financial benefit for the perpetrator or any other person or entity. A Dishonest or Fraudulent Act does not mean or include a reckless act, a negligent act, or a grossly negligent act. As used in this definition, “improper financial benefit” does not include any employee benefits received in the course of employment, including salaries, commissions, fees, bonuses, promotions, awards, profit sharing or pensions.
- M. “Electronic Transmission”** means any transmission effected by electronic means, including but not limited to a transmission effected by telephone tones, Telefacsimile, wireless device, or over the Internet.
- N. “Employee”** means:
- (1) each officer, director, trustee, partner or employee of the Insured, and
 - (2) each officer, director, trustee, partner or employee of any predecessor of the Insured whose principal assets are acquired by the Insured by consolidation or merger with, or purchase of assets or capital stock of, such predecessor, and
 - (3) each attorney performing legal services for the Insured and each employee of such attorney or of the law firm of such attorney while performing services for the Insured, and
 - (4) each student who is an authorized intern of the Insured, while in any of the Insured’s offices, and
 - (5) each officer, director, trustee, partner or employee of
 - (a) an investment adviser,
 - (b) an underwriter (distributor),
 - (c) a transfer agent or shareholder accounting recordkeeper, or
 - (d) an administrator authorized by written agreement to keep financial and/or other required records,for an Investment Company named as an Insured, BUT ONLY while (i) such officer, partner or employee is performing acts coming within the scope of the usual duties of an officer or employee of an Insured, or (ii) such officer, director, trustee, partner or employee is acting as a member of any committee duly elected or appointed to examine or audit or have custody of or access to the Property of the Insured, or (iii) such director or trustee (or anyone acting in a similar capacity) is acting outside the scope of the usual duties of a director or trustee; PROVIDED, that the term “Employee” shall not include any officer, director, trustee, partner or employee of a transfer agent, shareholder accounting recordkeeper or administrator (x) which is not an “affiliated person” (as defined in Section 2(a) of the Investment Company Act of 1940) of an Investment Company named as an Insured or of the adviser or underwriter of such Investment Company, or (y) which is a “Bank” (as defined in Section 2(a) of the Investment Company Act of 1940), and
 - (6) each individual assigned, by contract or by any agency furnishing temporary personnel, in either case on a contingent or part-time basis, to perform the usual duties of an employee in any office of the Insured, and

- (7) each individual assigned to perform the usual duties of an employee or officer of any entity authorized by written agreement with the Insured to perform services as electronic data processor of checks or other accounting records of the Insured, but excluding a processor which acts as transfer agent or in any other agency capacity for the Insured in issuing checks, drafts or securities, unless included under subsection (5) hereof, and
- (8) each officer, partner or employee of
 - (a) any Depository or Exchange,
 - (b) any nominee in whose name is registered any Security included in the systems for the central handling of securities established and maintained by any Depository, and
 - (c) any recognized service company which provides clerks or other personnel to any Depository or Exchange on a contract basis,

while such officer, partner or employee is performing services for any Depository in the operation of systems for the central handling of securities, and

- (9) in the case of an Insured which is an “employee benefit plan” (as defined in Section 3 of the Employee Retirement Income Security Act of 1974 (“ERISA”)) for officers, directors or employees of another Insured (“In-House Plan”), any “fiduciary” or other “plan official” (within the meaning of Section 412 of ERISA) of such In-House Plan, provided that such fiduciary or other plan official is a director, partner, officer, trustee or employee of an Insured (other than an In-House Plan).

Each employer of temporary personnel and each entity referred to in subsections (6) and (7) and their respective partners, officers and employees shall collectively be deemed to be one person for all the purposes of this Bond.

Brokers, agents, independent contractors, or representatives of the same general character shall not be considered Employees, except as provided in subsections (3), (6), and (7).

- O. “Exchange”** means any national securities exchange registered under the Securities Exchange Act of 1934.
- P. “Forgery”** means the physical signing on a document of the name of another person with the intent to deceive. A Forgery may be by means of mechanically reproduced facsimile signatures as well as handwritten signatures. Forgery does not include the signing of an individual’s own name, regardless of such individual’s authority, capacity or purpose.
- Q. “Items of Deposit”** means one or more checks or drafts.
- R. “Investment Company” or “Fund”** means an investment company registered under the Investment Company Act of 1940.
- S. “Limit of Liability”** means, with respect to any Insuring Agreement, the limit of liability of the Underwriter for any Single Loss covered by such Insuring Agreement as set forth under the heading “Limit of Liability” in Item 3 of the Declarations or in any Rider for such Insuring Agreement.
- T. “Mysterious Disappearance”** means any disappearance of Property which, after a reasonable investigation has been conducted, cannot be explained.

- U. **“Non-Fund”** means any corporation, business trust, partnership, trust or other entity which is not an Investment Company.
- V. **“Officially Designated”** means designated by the Shareholder of Record:
- (1) in the initial account application,
 - (2) in writing accompanied by a signature guarantee, or
 - (3) in writing or by Electronic Transmission, where such designation is verified via a callback to the Shareholder of Record by the Insured at a predetermined telephone number provided by the Shareholder of Record to the Insured in writing at least 30 days prior to such callback.
- W. **“Original”** means the first rendering or archetype and does not include photocopies or electronic transmissions even if received and printed.
- X. **“Phone/Electronic Transaction”** means any (1) redemption of shares issued by an Investment Company, (2) election concerning dividend options available to Fund shareholders, (3) exchange of shares in a registered account of one Fund into shares in an identically registered account of another Fund in the same complex pursuant to exchange privileges of the two Funds, or (4) purchase of shares issued by an Investment Company, which redemption, election, exchange or purchase is requested by voice over the telephone or through an Electronic Transmission.
- Y. **“Phone/Electronic Transaction Security Procedures”** means security procedures for Phone/Electronic Transactions as set forth in the Application and/or as otherwise provided in writing to the Underwriter.
- Z. **“Property”** means the following tangible items: money, postage and revenue stamps, precious metals, Securities, bills of exchange, acceptances, checks, drafts, or other written orders or directions to pay sums certain in money, certificates of deposit, due bills, money orders, letters of credit, financial futures contracts, conditional sales contracts, abstracts of title, insurance policies, deeds, mortgages, and assignments of any of the foregoing, and other valuable papers, including books of account and other records used by the Insured in the conduct of its business, and all other instruments similar to or in the nature of the foregoing (but excluding all data processing records), (1) in which the Insured has a legally cognizable interest, (2) in which the Insured acquired or should have acquired such an interest by reason of a predecessor’s declared financial condition at the time of the Insured’s consolidation or merger with, or purchase of the principal assets of, such predecessor or (3) which are held by the Insured for any purpose or in any capacity.
- AA. **“Securities”** means original negotiable or non-negotiable agreements or instruments which represent an equitable or legal interest, ownership or debt (including stock certificates, bonds, promissory notes, and assignments thereof), which are in the ordinary course of business transferable by physical delivery with appropriate endorsement or assignment. “Securities” does not include bills of exchange, acceptances, certificates of deposit, checks, drafts, or other written orders or directions to pay sums certain in money, due bills, money orders, or letters of credit.
- BB. **“Security Company”** means an entity which provides or purports to provide the transport of Property by secure means, including, without limitation, by use of armored vehicles or guards.

CC. “Self-Regulatory Organization” means any association of investment advisers or securities dealers registered under the federal securities laws, or any Exchange.

DD. “Shareholder of Record” means the record owner of shares issued by an Investment Company or, in the case of joint ownership of such shares, all record owners, as designated (1) in the initial account application, or (2) in writing accompanied by a signature guarantee, or (3) pursuant to procedures as set forth in the Application and/or as otherwise provided in writing to the Underwriter.

EE. “Single Loss” means:

- (1) all loss caused by any one act (other than a Dishonest or Fraudulent Act) committed by one person, or
- (2) all loss caused by Dishonest or Fraudulent Acts committed by one person, or
- (3) all expenses incurred with respect to any one audit or examination, or
- (4) all loss caused by any one occurrence or event other than those specified in subsections (1) through (3) above.

All acts or omissions of one or more persons which directly or indirectly aid or, by failure to report or otherwise, permit the continuation of an act referred to in subsections (1) and (2) above of any other person shall be deemed to be the acts of such other person for purposes of this subsection.

All acts or occurrences or events which have as a common nexus any fact, circumstance, situation, transaction or series of facts, circumstances, situations, or transactions shall be deemed to be one act, one occurrence, or one event.

FF. “Telefacsimile” means a system of transmitting and reproducing fixed graphic material (as, for example, printing) by means of signals transmitted over telephone lines or over the Internet.

GG. “Written” means expressed through letters or marks placed upon paper and visible to the eye.

SECTION 2. EXCLUSIONS

THIS BOND DOES NOT COVER:

- A. Loss resulting from (1) riot or civil commotion outside the United States of America and Canada, or (2) war, revolution, insurrection, action by armed forces, or usurped power, wherever occurring; except if such loss occurs while the Property is in transit, is otherwise covered under Insuring Agreement D, and when such transit was initiated, the Insured or any person initiating such transit on the Insured’s behalf had no knowledge of such riot, civil commotion, war, revolution, insurrection, action by armed forces, or usurped power.
- B. Loss in time of peace or war resulting from nuclear fission or fusion or radioactivity, or biological or chemical agents or hazards, or fire, smoke, or explosion, or the effects of any of the foregoing.
- C. Loss resulting from any Dishonest or Fraudulent Act committed by any person while acting in the capacity of a member of the Board of Directors or any equivalent body of the Insured or of any other entity.

- D. Loss resulting from any nonpayment or other default of any loan or similar transaction made by the Insured or any of its partners, directors, officers or employees, whether or not authorized and whether procured in good faith or through a Dishonest or Fraudulent Act, unless such loss is otherwise covered under Insuring Agreement A, E, or F.
- E. Loss resulting from any violation by the Insured or by any Employee of any law, or any rule or regulation pursuant thereto or adopted by a Self-Regulatory Organization, regulating the issuance, purchase or sale of securities, securities transactions upon security exchanges or over the counter markets, Investment Companies, or investment advisers, unless such loss, in the absence of such law, rule or regulation, would be covered under Insuring Agreement A, E, or F.
- F. Loss resulting from Property that is the object of a Dishonest or Fraudulent Act or Mysterious Disappearance while in the custody of any Security Company, unless such loss is covered under this Bond and is in excess of the amount recovered or received by the Insured under (1) the Insured's contract with such Security Company, and (2) insurance or indemnity of any kind carried by such Security Company for the benefit of, or otherwise available to, users of its service, in which case this Bond shall cover only such excess, subject to the applicable Limit of Liability and Deductible Amount.
- G. Potential income, including but not limited to interest and dividends, not realized by the Insured because of a loss covered under this Bond, except when covered under Insuring Agreement H.
- H. Loss in the form of (1) damages of any type for which the Insured is legally liable, except direct compensatory damages, or (2) taxes, fines, or penalties, including without limitation two-thirds of treble damage awards pursuant to judgments under any statute or regulation.
- I. Loss resulting from the surrender of Property away from an office of the Insured as a result of kidnap, ransom, or extortion, or a threat
 - (1) to do bodily harm to any person, except where the Property is in transit in the custody of any person acting as messenger as a result of a threat to do bodily harm to such person, if the Insured had no knowledge of such threat at the time such transit was initiated, or
 - (2) to do damage to the premises or Property of the Insured,unless such loss is otherwise covered under Insuring Agreement A.
- J. All costs, fees, and other expenses incurred by the Insured in establishing the existence of or amount of loss covered under this Bond, except to the extent certain audit expenses are covered under Insuring Agreement B.
- K. Loss resulting from payments made to or withdrawals from any account, involving funds erroneously credited to such account, unless such loss is otherwise covered under Insuring Agreement A.
- L. Loss resulting from uncollectible Items of Deposit which are drawn upon a financial institution outside the United States of America, its territories and possessions, or Canada.
- M. Loss resulting from the Dishonest or Fraudulent Acts or other acts or omissions of an Employee primarily engaged in the sale of shares issued by an Investment Company to persons other than (1) a person registered as a broker under the Securities Exchange Act of 1934 or (2) an "accredited investor" as defined in Rule 501(a) of Regulation D under the Securities Act of 1933, which is not an individual.

- N. Loss resulting from the use of credit, debit, charge, access, convenience, identification, cash management or other cards, whether such cards were issued or purport to have been issued by the Insured or by anyone else, unless such loss is otherwise covered under Insuring Agreement A.
- O. Loss resulting from any purchase, redemption or exchange of securities issued by an Investment Company or other Insured, or any other instruction, request, acknowledgement, notice or transaction involving securities issued by an Investment Company or other Insured or the dividends in respect thereof, when any of the foregoing is requested, authorized or directed or purported to be requested, authorized or directed by voice over the telephone or by Electronic Transmission, unless such loss is otherwise covered under Insuring Agreement A or Insuring Agreement I.
- P. Loss resulting from any Dishonest or Fraudulent Act or committed by an Employee as defined in Section 1.N(2), unless such loss (1) could not have been reasonably discovered by the due diligence of the Insured at or prior to the time of acquisition by the Insured of the assets acquired from a predecessor, and (2) arose out of a lawsuit or valid claim brought against the Insured by a person unaffiliated with the Insured or with any person affiliated with the Insured.
- Q. Loss resulting from the unauthorized entry of data into, or the deletion or destruction of data in, or the change of data elements or programs within, any Computer System, unless such loss is otherwise covered under Insuring Agreement A.
- R. Loss resulting from the theft, disappearance, destruction, disclosure, or unauthorized use of confidential or personal information (including, but not limited to, trade secrets, personal shareholder or client information, shareholder or client lists, personally identifiable financial or medical information, intellectual property, or any other type of non-public information), whether such information is owned by the Insured or held by the Insured in any capacity (including concurrently with another person); provided, however, this exclusion shall not apply to loss arising out of the use of such information to support or facilitate the commission of an act otherwise covered by this Bond.
- S. All costs, fees, and other expenses arising from a data security breach or incident, including, but not limited to, forensic audit expenses, fines, penalties, expenses to comply with federal and state laws and expenses related to notifying affected individuals.
- T. Loss resulting from vandalism or malicious mischief.
- U. Loss resulting from the theft, disappearance, or destruction of Cryptocurrency or from the change in value of Cryptocurrency, unless such loss (1) is sustained by any investment company registered under the Investment Company Act of 1940 that is named as an Insured and (2) is otherwise covered under Insuring Agreement A.

SECTION 3. ASSIGNMENT OF RIGHTS

Upon payment to the Insured hereunder for any loss, the Underwriter shall be subrogated to the extent of such payment to all of the Insured's rights and claims in connection with such loss; provided, however, that the Underwriter shall not be subrogated to any such rights or claims one named Insured under this Bond may have against another named Insured under this Bond. At the request of the Underwriter, the Insured shall execute all assignments or other documents and take such action as the Underwriter may deem necessary or desirable to secure and perfect such rights and claims, including the execution of documents necessary to enable the Underwriter to bring suit in the name of the Insured.

Assignment of any rights or claims under this Bond shall not bind the Underwriter without the Underwriter's written consent.

SECTION 4. LOSS—NOTICE—PROOF—LEGAL PROCEEDINGS

This Bond is for the use and benefit only of the Insured and the Underwriter shall not be liable hereunder to anyone other than the Insured. As soon as practicable and not more than sixty (60) days after discovery of any loss covered hereunder, the Insured shall give the Underwriter written notice thereof and, as soon as practicable and within one year after such discovery, shall also furnish to the Underwriter affirmative proof of loss with full particulars. The Underwriter may extend the sixty-day notice period or the one-year proof of loss period if the Insured requests an extension and shows good cause therefor.

The Insured shall provide the Underwriter with such information, assistance, and cooperation as the Underwriter may reasonably request.

See also General Agreement C (Court Costs and Attorneys' Fees).

The Underwriter shall not be liable hereunder for loss of Securities unless each of the Securities is identified in such proof of loss by a certificate or bond number or by such identification means as the Underwriter may require. The Underwriter shall have a reasonable period after receipt of a proper affirmative proof of loss within which to investigate the claim, but where the Property is Securities and the loss is clear and undisputed, settlement shall be made within forty-eight (48) hours even if the loss involves Securities of which duplicates may be obtained.

The Insured shall not bring legal proceedings against the Underwriter to recover any loss hereunder prior to sixty (60) days after filing such proof of loss or subsequent to twenty-four (24) months after the discovery of such loss or, in the case of a legal proceeding to recover hereunder on account of any judgment against the Insured in or settlement of any suit mentioned in General Agreement C or to recover court costs or attorneys' fees paid in any such suit, twenty-four (24) months after the date of the final judgment in or settlement of such suit. If any limitation in this Bond is prohibited by any applicable law, such limitation shall be deemed to be amended to be equal to the minimum period of limitation permitted by such law.

Notice hereunder shall be given to Manager, Professional Liability Claims, ICI Mutual Insurance Company, RRG, 1401 H St. NW, Washington, DC 20005.

SECTION 5. DISCOVERY

For all purposes under this Bond, a loss is discovered, and discovery of a loss occurs, when the Insured

- (1) becomes aware of facts, or
- (2) receives notice of an actual or potential claim by a third party which alleges that the Insured is liable under circumstances,

which would cause a reasonable person to assume that a loss of a type covered by this Bond has been or is likely to be incurred, regardless of when the act or acts causing or contributing to such loss occurred, even though the exact amount or details of the loss may not be known.

SECTION 6. VALUATION OF PROPERTY

For the purpose of determining the amount of any loss hereunder, the value of any Property shall be the market value of such Property at the close of business on the first business day before the discovery of such loss; except that

- (1) the value of any Property replaced by the Insured prior to the payment of a claim therefor shall be the actual market value of such Property at the time of replacement, but not in excess of the market value of such Property on the first business day before the discovery of the loss of such Property;
- (2) the value of Securities which must be produced to exercise subscription, conversion, redemption or deposit privileges shall be the market value of such privileges immediately preceding the expiration thereof if the loss of such Securities is not discovered until after such expiration, but if there is no quoted or other ascertainable market price for such Property or privileges referred to in clauses (1) and (2), their value shall be fixed by agreement between the parties or by arbitration before an arbitrator or arbitrators acceptable to the parties; and
- (3) the value of books of accounts or other records used by the Insured in the conduct of its business shall be limited to the actual cost of blank books, blank pages or other materials if the books or records are reproduced plus the cost of labor for the transcription or copying of data furnished by the Insured for reproduction.

SECTION 7. LOST SECURITIES

The maximum liability of the Underwriter hereunder for lost Securities shall be the payment for, or replacement of, such Securities having an aggregate value not to exceed the applicable Limit of Liability. If the Underwriter shall make payment to the Insured for any loss of Securities, the Insured shall assign to the Underwriter all of the Insured's right, title and interest in and to such Securities. In lieu of such payment, the Underwriter may, at its option, replace such lost Securities, and in such case the Insured shall cooperate to effect such replacement. To effect the replacement of lost Securities, the Underwriter may issue or arrange for the issuance of a lost instrument bond. If the value of such Securities does not exceed the applicable Deductible Amount (at the time of the discovery of the loss), the Insured will pay the usual premium charged for the lost instrument bond and will indemnify the issuer of such bond against all loss and expense that it may sustain because of the issuance of such bond.

If the value of such Securities exceeds the applicable Deductible Amount (at the time of discovery of the loss), the Insured will pay a proportion of the usual premium charged for the lost instrument bond, equal to the percentage that the applicable Deductible Amount bears to the value of such Securities upon discovery of the loss, and will indemnify the issuer of such bond against all loss and expense that is not recovered from the Underwriter under the terms and conditions of this Bond, subject to the applicable Limit of Liability.

SECTION 8. SALVAGE

If any recovery is made, whether by the Insured or the Underwriter, on account of any loss within the applicable Limit of Liability hereunder, the Underwriter shall be entitled to the full amount of such recovery to reimburse the Underwriter for all amounts paid hereunder with respect to such loss. If any recovery is made, whether by the Insured or the Underwriter, on account of any loss in excess of the applicable Limit of Liability hereunder plus the Deductible Amount applicable to such loss from any source other than suretyship, insurance, reinsurance, security or indemnity taken by or for the benefit of the Underwriter, the amount of such recovery, net of the actual costs and expenses of recovery, shall

be applied to reimburse the Insured in full for the portion of such loss in excess of such Limit of Liability, and the remainder, if any, shall be paid first to reimburse the Underwriter for all amounts paid hereunder with respect to such loss and then to the Insured to the extent of the portion of such loss within the Deductible Amount. The Insured shall execute all documents which the Underwriter deems necessary or desirable to secure to the Underwriter the rights provided for herein.

SECTION 9. NON-REDUCTION AND NON-ACCUMULATION OF LIABILITY AND TOTAL LIABILITY

Prior to its termination, this Bond shall continue in force up to the Limit of Liability for each Insuring Agreement for each Single Loss, notwithstanding any previous loss (other than such Single Loss) for which the Underwriter may have paid or be liable to pay hereunder; PROVIDED, however, that regardless of the number of years this Bond shall continue in force and the number of premiums which shall be payable or paid, the liability of the Underwriter under this Bond with respect to any Single Loss shall be limited to the applicable Limit of Liability irrespective of the total amount of such Single Loss and shall not be cumulative in amounts from year to year or from period to period.

SECTION 10. MAXIMUM LIABILITY OF UNDERWRITER; OTHER BONDS OR POLICIES

The maximum liability of the Underwriter for any Single Loss covered by any Insuring Agreement under this Bond shall be the Limit of Liability applicable to such Insuring Agreement, subject to the applicable Deductible Amount and the other provisions of this Bond. Recovery for any Single Loss may not be made under more than one Insuring Agreement. If any Single Loss covered under this Bond is recoverable or recovered in whole or in part because of an unexpired discovery period under any other bonds or policies issued by the Underwriter to the Insured or to any predecessor in interest of the Insured, the maximum liability of the Underwriter shall be the greater of either (1) the applicable Limit of Liability under this Bond, or (2) the maximum liability of the Underwriter under such other bonds or policies.

SECTION 11. OTHER INSURANCE

Notwithstanding anything to the contrary herein, if any loss covered by this Bond shall also be covered by other insurance or suretyship for the benefit of the Insured, the Underwriter shall be liable hereunder only for the portion of such loss in excess of the amount recoverable under such other insurance or suretyship, but not exceeding the applicable Limit of Liability of this Bond.

SECTION 12. DEDUCTIBLE AMOUNT

The Underwriter shall not be liable under any Insuring Agreement unless the amount of the loss covered thereunder, after deducting the net amount of all reimbursement and/or recovery received by the Insured with respect to such loss (other than from any other bond, suretyship or insurance policy or as an advance by the Underwriter hereunder) shall exceed the applicable Deductible Amount; in such case the Underwriter shall be liable only for such excess, subject to the applicable Limit of Liability and the other terms of this Bond.

No Deductible Amount shall apply to any loss covered under Insuring Agreement A sustained by any Investment Company named as an Insured.

SECTION 13. TERMINATION

The Underwriter may terminate this Bond as to any Insured or all Insureds only by written notice to such Insured or Insureds and, if this Bond is terminated as to any Investment Company, to each such Investment Company terminated thereby and to the Securities and Exchange Commission, Washington, D.C., in all cases not less than sixty (60) days prior to the effective date of termination specified in such notice.

The Insured may terminate this Bond only by written notice to the Underwriter not less than sixty (60) days prior to the effective date of the termination specified in such notice. Notwithstanding the foregoing, when the Insured terminates this Bond as to any Investment Company, the effective date of termination shall be not less than sixty (60) days from the date the Underwriter provides written notice of the termination to each such Investment Company terminated thereby and to the Securities and Exchange Commission, Washington, D.C.

This Bond will terminate as to any Insured that is a Non-Fund immediately and without notice upon (1) the takeover of such Insured's business by any State or Federal official or agency, or by any receiver or liquidator, or (2) the filing of a petition under any State or Federal statute relative to bankruptcy or reorganization of the Insured, or assignment for the benefit of creditors of the Insured.

Premiums are earned until the effective date of termination. The Underwriter shall refund the unearned premium computed at short rates in accordance with the Underwriter's standard short rate cancellation tables if this Bond is terminated by the Insured or pro rata if this Bond is terminated by the Underwriter.

Upon the detection by any Insured that an Employee has committed any Dishonest or Fraudulent Act(s), the Insured shall immediately remove such Employee from a position that may enable such Employee to cause the Insured to suffer a loss by any subsequent Dishonest or Fraudulent Act(s). The Insured, within two (2) business days of such detection, shall notify the Underwriter with full and complete particulars of the detected Dishonest or Fraudulent Act(s).

For purposes of this section, detection occurs when any partner, officer, or supervisory employee of any Insured, who is not in collusion with such Employee, becomes aware that the Employee has committed any Dishonest or Fraudulent Act(s).

This Bond shall terminate as to any Employee by written notice from the Underwriter to each Insured and, if such Employee is an Employee of an Insured Investment Company, to the Securities and Exchange Commission, in all cases not less than sixty (60) days prior to the effective date of termination specified in such notice.

SECTION 14. RIGHTS AFTER TERMINATION

At any time prior to the effective date of termination of this Bond as to any Insured, such Insured may, by written notice to the Underwriter, elect to purchase the right under this Bond to an additional period of twelve (12) months within which to discover loss sustained by such Insured prior to the effective date of such termination and shall pay an additional premium therefor as the Underwriter may require.

Such additional discovery period shall terminate immediately and without notice upon the takeover of such Insured's business by any State or Federal official or agency, or by any receiver or liquidator. Promptly after such termination the Underwriter shall refund to the Insured any unearned premium.

The right to purchase such additional discovery period may not be exercised by any State or Federal official or agency, or by any receiver or liquidator, acting or appointed to take over the Insured's business.

SECTION 15. CENTRAL HANDLING OF SECURITIES

The Underwriter shall not be liable for loss in connection with the central handling of securities within the systems established and maintained by any Depository ("Systems"), unless the amount of such loss exceeds the amount recoverable or recovered under any bond or policy or participants' fund insuring the Depository against such loss (the "Depository's Recovery"); in such case the Underwriter shall be liable hereunder only for the Insured's share of such excess loss, subject to the applicable Limit of Liability, the Deductible Amount and the other terms of this Bond.

For determining the Insured's share of such excess loss, (1) the Insured shall be deemed to have an interest in any certificate representing any security included within the Systems equivalent to the interest the Insured then has in all certificates representing the same security included within the Systems; (2) the Depository shall have reasonably and fairly apportioned the Depository's Recovery among all those having an interest as recorded by appropriate entries in the books and records of the Depository in Property involved in such loss, so that each such interest shall share in the Depository's Recovery in the ratio that the value of each such interest bears to the total value of all such interests; and (3) the Insured's share of such excess loss shall be the amount of the Insured's interest in such Property in excess of the amount(s) so apportioned to the Insured by the Depository.

This Bond does not afford coverage in favor of any Depository or Exchange or any nominee in whose name is registered any security included within the Systems.

SECTION 16. ADDITIONAL COMPANIES INCLUDED AS INSURED

If more than one entity is named as the Insured:

- A. the total liability of the Underwriter hereunder for each Single Loss shall not exceed the Limit of Liability which would be applicable if there were only one named Insured, regardless of the number of Insured entities which sustain loss as a result of such Single Loss,
- B. the Insured first named in Item 1 of the Declarations shall be deemed authorized to make, adjust, and settle, and receive and enforce payment of, all claims hereunder as the agent of each other Insured for such purposes and for the giving or receiving of any notice required or permitted to be given hereunder; provided, that the Underwriter shall promptly furnish each named Insured Investment Company with (1) a copy of this Bond and any amendments thereto, (2) a copy of each formal filing of a claim hereunder by any other Insured, and (3) notification of the terms of the settlement of each such claim prior to the execution of such settlement,
- C. the Underwriter shall not be responsible or have any liability for the proper application by the Insured first named in Item 1 of the Declarations of any payment made hereunder to the first named Insured,
- D. for the purposes of Sections 4 and 13, knowledge possessed or discovery made by any partner, officer or supervisory Employee of any Insured shall constitute knowledge or discovery by every named Insured,

- E. if the first named Insured ceases for any reason to be covered under this Bond, then the Insured next named shall thereafter be considered as the first named Insured for the purposes of this Bond, and
- F. each named Insured shall constitute “the Insured” for all purposes of this Bond.

SECTION 17. NOTICE AND CHANGE OF CONTROL

Within thirty (30) days after learning that there has been a change in control of an Insured by transfer of its outstanding voting securities the Insured shall give written notice to the Underwriter of:

- A. the names of the transferors and transferees (or the names of the beneficial owners if the voting securities are registered in another name), and
- B. the total number of voting securities owned by the transferors and the transferees (or the beneficial owners), both immediately before and after the transfer, and
- C. the total number of outstanding voting securities.

As used in this Section, “control” means the power to exercise a controlling influence over the management or policies of the Insured.

SECTION 18. CHANGE OR MODIFICATION

This Bond may only be modified by written Rider forming a part hereof over the signature of the Underwriter’s authorized representative. Any Rider which modifies the coverage provided by Insuring Agreement A, Fidelity, in a manner which adversely affects the rights of an Insured Investment Company shall not become effective until at least sixty (60) days after the Underwriter has given written notice thereof to the Securities and Exchange Commission, Washington, D.C., and to each Insured Investment Company affected thereby.

SECTION 19. COMPLIANCE WITH APPLICABLE TRADE AND ECONOMIC SANCTIONS

This Bond shall not be deemed to provide any coverage, and the Underwriter shall not be required to pay any loss or provide any benefit hereunder, to the extent that the provision of such coverage, payment of such loss or provision of such benefit would cause the Underwriter to be in violation of any applicable trade or economic sanctions, laws or regulations, including, but not limited to, any sanctions, laws or regulations administered and enforced by the U.S. Department of Treasury Office of Foreign Assets Control (OFAC).

SECTION 20. ANTI-BUNDLING

If any Insuring Agreement requires that an enumerated type of document be Counterfeit, or contain a Forgery or Alteration, the Counterfeit, Forgery, or Alteration must be on or of the enumerated document itself, not on or of some other document submitted with, accompanying or incorporated by reference into the enumerated document.

IN WITNESS WHEREOF, the Underwriter has caused this Bond to be executed on the Declarations Page.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 1

| INSURED | | BOND NUMBER |
|---------------------------------|---|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

In consideration of the premium charged for this Bond, it is hereby understood and agreed that Item 1 of the Declarations, Name of Insured, shall include the following:

Vanguard Asset Management Ltd.
Vanguard Investments Australia Ltd.
Vanguard Marketing Corporation
Vanguard Admiral Funds
Vanguard Bond Index Funds
Vanguard California Tax-Free Funds
Vanguard Charlotte Funds
Vanguard Chester Funds
Vanguard CMT Funds
Vanguard Explorer Fund
Vanguard Fenway Funds
Vanguard Fixed Income Securities Funds
Vanguard Horizon Funds
Vanguard Index Funds
Vanguard Institutional Index Funds
Vanguard International Equity Index Funds
Vanguard Malvern Funds
Vanguard Massachusetts Tax-Exempt Funds
Vanguard Money Market Reserves
Vanguard Montgomery Funds
Vanguard Municipal Bond Funds
Vanguard New Jersey Tax-Free Funds
Vanguard New York Tax-Free Funds
Vanguard Ohio Tax-Free Funds
Vanguard Pennsylvania Tax-Free Funds
Vanguard Quantitative Funds
Vanguard Scottsdale Funds
Vanguard Specialized Funds
Vanguard STAR Funds
Vanguard Tax-Managed Funds
Vanguard Trustees' Equity Fund

Vanguard Valley Forge Funds
Vanguard Variable Insurance Funds
Vanguard Wellesley Income Fund
Vanguard Wellington Fund
Vanguard Whitehall Funds
Vanguard Windsor Funds
Vanguard World Fund
The Vanguard Group, Inc. Benefit Plan
The Vanguard Group, Inc. Retirement and Savings Plan

It is further understood and agreed that each Investment Company named above shall include (1) each and all series thereof existing at the effective date of this rider; and (2) subject to the requirements of General Agreement A.2 and Rider No. 8, any series thereof newly created or acquired during the Bond Period.

Except as above stated, nothing herein shall be held to alter, waive or extend any of the terms of this Bond.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 2

| INSURED | | BOND NUMBER |
|--------------------------|----------------------------------|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

In consideration of the premium charged for this Bond, it is hereby understood and agreed that this Bond (other than Insuring Agreements C and D) does not cover loss resulting from or in connection with any business, activities, or acts or omissions of (including services rendered by) any Insured which is not an Insured Fund (“Non-Fund”) or any Employee of a Non-Fund, except loss, otherwise covered by the terms of this Bond, resulting from or in connection with

- (1) services rendered by a Non-Fund to an Insured Fund, or to shareholders of such Fund in connection with the issuance, transfer, or redemption of their Fund shares; or
- (2) Investment Advisory Services rendered by Vanguard Group, Inc. (“Entity”) to any investment advisory client of the Entity; or
- (3) administrative services rendered by The Vanguard Group, Inc. to contract holders of the Vanguard Variable Annuity Contracts, or to the Transamerica Premier Life Insurance Company separate account, or to the Transamerica Financial Life Insurance Company separate account utilized for Vanguard Variable Annuity Contracts; or
- (4) in the case of a Non-Fund substantially all of whose business is rendering the services described in (1) or (2) above, the general business, activities or operations of such Non-Fund, excluding (a) the rendering of services (other than those described in (1) or (2) above) to any person, or (b) the sale of goods or property of any kind.

It is further understood and agreed that with respect to any Non-Fund, Insuring Agreements C and D only cover loss of Property which a Non-Fund uses or holds, or in which a Non-Fund has an interest, in each case wholly or partially in connection with the rendering of services described in (1) or (2) above.

Except as above stated, nothing herein shall be held to alter, waive or extend any of the terms of this Bond.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 3

| INSURED | | BOND NUMBER |
|---------------------------------|---|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

In consideration of the premium charged for this Bond, it is hereby understood and agreed that this Bond (other than Insuring Agreements C and D) does not cover loss resulting from or in connection with any business, activities, acts or omissions of any Insured or any Employee of any Insured where such loss is based upon, arises out of or in any way involves the provision of services to any Plan, EXCEPT loss, otherwise covered by the terms of this Bond, resulting from, or in connection with the business of:

- (a) provision of Investment Advisory Services by The Vanguard Group, Inc. to any In-House Plan; or
- (b) provision of Administrative Services by The Vanguard Group, Inc. to any In-House Plan.

It is further understood and agreed that Insuring Agreements C and D only cover loss of Property which an Insured uses or holds, or in which the Insured has an interest, in each case in connection with (a) or (b) above.

It is further understood and agreed that notwithstanding the foregoing, this Bond (other than Insuring Agreements C and D) does not cover loss resulting from or in connection with, and Insuring Agreements C and D do not cover loss of Property which an Insured uses or holds, or in which it has an interest, in each case in connection with:

- (1) the discretionary voting by or on behalf of any Plan of Designated Securities owned or held by such Plan, unless, in the case of a vote by or on behalf of the Plan, such vote was pursuant to the direction of a majority of trustees of such Plan who were not then Interested Trustees;
- (2) custodial services for the safekeeping and custody of securities or other property;
- (3) liability of an Insured arising from its status as the employer of employees covered by a Plan (including liability arising from the Insured's failure to collect contributions or to pay benefits).

It is further understood and agreed that for purposes of this rider:

- (1) “Administrative Services” shall mean administrative services, including, without limitation, voting securities which are Plan assets, causing Plan assets to be invested as directed in accordance with the Plan, and maintaining records and preparing reports with respect to Plan contributions, participant accounts and investments.
- (2) “Affiliated Entity” means any entity controlling, controlled by, or under common control with an Insured.
- (3) “Designated Securities” means securities issued by an Insured, or by any Affiliated Entity, or by any Fund to which such Insured or any Affiliated Entity provides any services.
- (4) “Interested Trustee” means any trustee of a Plan who is also (a) an officer, director, trustee, partner or employee of, or who owns, controls, or holds power to vote 5% or more of the outstanding voting securities of, (i) any Insured (other than such Plan), or (ii) any Affiliated Entity, or (iii) any Fund to which such Insured or any Affiliated Entity provides any services, or (b) an Insured or an Affiliated Entity.
- (5) “Investment Advisory Services” means (a) advice with respect to the desirability of investing in, purchasing or selling securities or other property, including the power to determine what securities or other property shall be purchased or sold, but not including furnishing only statistical and other factual information (such as economic factors and trends); and (b) the provision of financial, economic or investment management services, but only if ancillary and related to the advice referred to in clause (a) above.
- (6) “Plan” means any retirement or other employee benefit plan, including any trust relating thereto.
- (7) “In-House Plan” means any Plan for employees of an Insured, or for any Affiliated Entity, but always excluding employee stock ownership plans, stock bonus plans, and any trusts relating thereto.

It is further understood and agreed that with respect to In-House Plans, for purposes of Rider No. 2 of this bond only, an In-House Plan named as an Insured under this bond shall not be deemed to be a Non-Fund.

Except as above stated, nothing herein shall be held to alter, waive or extend any of the terms of this Bond.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 4

| INSURED | | BOND NUMBER |
|--------------------------|----------------------------------|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

In consideration of the premium charged for this Bond, it is hereby understood and agreed that notwithstanding Section 2.Q of this Bond, this Bond is amended by adding an additional Insuring Agreement J as follows:

J. COMPUTER SECURITY

Loss (including loss of Property) resulting directly from Computer Fraud; provided, that the Insured has adopted in writing and generally maintains and follows during the Bond Period all Computer Security Procedures. The isolated failure of the Insured to maintain and follow a particular Computer Security Procedure in a particular instance will not preclude coverage under this Insuring Agreement, subject to the specific exclusions herein and in the Bond.

1. Definitions. The following terms used in this Insuring Agreement shall have the following meanings:
 - a. "Authorized User" means any person or entity designated by the Insured (through contract, assignment of User Identification, or otherwise) as authorized to use a Covered Computer System, or any part thereof. An individual who invests in an Insured Fund shall not be considered to be an Authorized User solely by virtue of being an investor.
 - b. "Computer Fraud" means the unauthorized entry of data into, or the deletion or destruction of data in, or change of data elements or programs within, a Covered Computer System which:
 - (1) is committed by any Unauthorized Third Party anywhere, alone or in collusion with other Unauthorized Third Parties; and
 - (2) is committed with the conscious manifest intent (a) to cause the Insured to sustain a loss, and (b) to obtain financial benefit for the perpetrator or any other person; and

- (3) causes (x) Property to be transferred, paid or delivered; or (y) an account of the Insured, or of its customer, to be added, deleted, debited or credited; or (z) an unauthorized or fictitious account to be debited or credited.
 - c. "Computer Security Procedures" means procedures for prevention of unauthorized computer access and use and administration of computer access and use as provided in writing to the Underwriter.
 - d. "Covered Computer System" means any Computer System as to which the Insured has possession, custody and control.
 - e. "Unauthorized Third Party" means any person or entity that, at the time of the Computer Fraud, is not an Authorized User.
 - f. "User Identification" means any unique user name (*i.e.*, a series of characters) that is assigned to a person or entity by the Insured.
2. Exclusions. It is further understood and agreed that this Insuring Agreement J shall not cover:
- a. Any loss covered under Insuring Agreement A, "Fidelity," of this Bond; and
 - b. Any loss resulting from the intentional failure to adhere to one or more Computer Security Procedures; and
 - c. Any loss resulting from a Computer Fraud committed by or in collusion with:
 - (1) any Authorized User (whether a natural person or an entity); or
 - (2) in the case of any Authorized User which is an entity, (a) any director, officer, partner, employee or agent of such Authorized User, or (b) any entity which controls, is controlled by, or is under common control with such Authorized User ("Related Entity"), or (c) any director, officer, partner, employee or agent of such Related Entity; or
 - (3) in the case of any Authorized User who is a natural person, (a) any entity for which such Authorized User is a director, officer, partner, employee or agent ("Employer Entity"), or (b) any director, officer, partner, employee or agent of such Employer Entity, or (c) any entity which controls, is controlled by, or is under common control with such Employer Entity ("Employer-Related Entity"), or (d) any director, officer, partner, employee or agent of such Employer-Related Entity;
- and
- d. Any loss resulting from physical damage to or destruction of any Covered Computer System, or any part thereof, or any data, data elements or media associated therewith; and

- e. Any loss not directly and proximately caused by Computer Fraud (including, without limitation, disruption of business and extra expense); and
- f. Payments made to any person(s) who has threatened to deny or has denied authorized access to a Covered Computer System or otherwise has threatened to disrupt the business of the Insured.

For purposes of this Insuring Agreement, "Single Loss," as defined in Section 1.EE of this Bond, shall also include all loss caused by Computer Fraud(s) committed by one person, or in which one person is implicated, whether or not that person is specifically identified. A series of losses involving unidentified individuals, but arising from the same method of operation, may be deemed by the Underwriter to involve the same individual and in that event shall be treated as a Single Loss.

It is further understood and agreed that nothing in this Rider shall affect the exclusion set forth in Section 2.O of this Bond.

Coverage under this Insuring Agreement shall terminate upon termination of this Bond. Coverage under this Insuring Agreement may also be terminated without terminating this Bond as an entirety:

- (a) by written notice from the Underwriter not less than sixty (60) days prior to the effective date of termination specified in such notice; or
- (b) immediately by written notice from the Insured to the Underwriter.

Except as above stated, nothing herein shall be held to alter, waive or extend any of the terms of this Bond.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 5

| INSURED | | BOND NUMBER |
|--------------------------|----------------------------------|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

In consideration of the premium charged for this Bond, it is hereby understood and agreed that the exclusion set forth at Section 2.M of this Bond shall not apply with respect to loss resulting from the Dishonest or Fraudulent Acts or other acts or omissions in connection with offers or sales of securities issued by an Insured Fund effected by an Employee (a) who is an employee of that Fund or of its investment adviser, principal underwriter, or affiliated transfer agent, and (b) who is communicating with purchasers of such securities only in person in an office of an Insured or by telephone or in writing, and (c) who does not receive commissions on such sales; provided, that such Dishonest or Fraudulent Acts or other acts or omissions do not involve, and such loss does not arise from, a statement or representation which is not (1) contained in a currently effective prospectus regarding such securities, which has been filed with the Securities and Exchange Commission, or (2) made as part of a scripted response to a question regarding that Investment Company or such securities, if the script has been filed with, and not objected to by, the Financial Industry Regulatory Authority, and if the entire scripted response has been read to the caller, and if any response concerning the performance of such securities is not outdated.

It is further understood and agreed that notwithstanding anything to the contrary set forth above in this Rider or in Section 2.M of this Bond, this Bond does not cover loss resulting from the Dishonest or Fraudulent Acts or other acts or omissions of an Employee in connection with offers or sales of securities issued by any Fund where such offers or sales are made to any employee benefit plan ("Plan"), regardless of whether such Plan is an "accredited investor" as defined in Rule 501(a) of Regulation D under the Securities Act of 1933, unless

- (1) such Employee is a "sales representative" employed by The Vanguard Group, Inc.; and
- (2) such Employee is communicating only with a person authorized under such Plan to define permissible investments for the Plan; and
- (3) such Dishonest or Fraudulent Acts or other acts or omissions are in connection with such Employee's offer or sale of securities issued by an Insured Fund; and
- (4) such Dishonest or Fraudulent Acts or other acts or omissions do not involve, and such loss does not arise from, a statement or representation which is not (a) contained in a currently effective prospectus regarding such securities, which has been filed with

the Securities and Exchange Commission, or (b) made as part of a scripted response to a question regarding that Investment Company or such securities, if the script has been filed with, and not objected to by, the Financial Industry Regulatory Authority, and if the entire scripted response has been read to the caller, and if any response concerning the performance of such securities is not outdated; and

- (5) such Employee does not (a) have or exercise any discretionary authority or discretionary control respecting management of a Plan or disposition of Plan assets, (b) render investment advice for a fee or other compensation with respect to any money or other property of a Plan, or (c) perform any discretionary act in the capacity of a trustee, fiduciary or co-fiduciary under any applicable law, including without limitation ERISA and state statutory or common law,

and then only to the extent such loss is otherwise covered by the terms of this Bond.

Except as above stated, nothing herein shall be held to alter, waive or extend any of the terms of this Bond.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 6

| INSURED | | BOND NUMBER |
|---------------------------------|---|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

In consideration of the premium charged for this Bond, it is hereby understood and agreed that the Deductible Amount for Insuring Agreement E, Forgery or Alteration, and Insuring Agreement F, Securities, shall not apply with respect to loss through Forgery of a signature on the following documents:

- (1) letter requesting redemption of \$100,000 or less payable by check to the Shareholder of Record and sent to an Authorized Address; or
- (2) letter requesting redemption of \$100,000 or less by wire transfer to the Shareholder of Record of an Authorized Bank Account; or
- (3) written request to a trustee or custodian for a Designated Retirement Account (“DRA”) which holds shares of an Insured Fund, where such request (a) purports to be from or at the instruction of the Owner of such DRA, and (b) directs such trustee or custodian to transfer \$100,000 or less from such DRA to a trustee or custodian for another DRA established for the benefit of such Owner;

provided, that the Limit of Liability for a Single Loss as described above shall be \$100,000 and that the Insured shall bear 20% of each such loss. This Rider shall not apply in the case of any such Single Loss which exceeds \$100,000; in such case the Deductible Amounts and Limits of Liability set forth in Item 3 of the Declarations shall control.

For purposes of this Rider:

- (A) “Designated Retirement Account” means any retirement plan or account described or qualified under the Internal Revenue Code of 1986, as amended, or a subaccount thereof.
- (B) “Owner” means the individual for whose benefit the DRA, or a subaccount thereof, is established.

Except as above stated, nothing herein shall be held to alter, waive or extend any of the terms of this Bond.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 7

| INSURED | | BOND NUMBER |
|---------------------------------|---|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

In consideration of the premium charged for this Bond, it is hereby understood and agreed that this Bond does not cover any loss resulting from or in connection with the acceptance of any Third Party Check, unless

- (1) such Third Party Check is used to open or increase an account which is registered in the name of one or more of the payees on such Third Party Check, and
- (2) reasonable efforts are made by the Insured, or by the entity receiving Third Party Checks on behalf of the Insured, to verify all endorsements on all Third Party Checks made payable in amounts greater than \$100,000 (provided, however, that the isolated failure to make such efforts in a particular instance will not preclude coverage, subject to the exclusions herein and in the Bond),

and then only to the extent such loss is otherwise covered under this Bond.

For purposes of this Rider, "Third Party Check" means a check made payable to one or more parties and offered as payment to one or more other parties.

It is further understood and agreed that notwithstanding anything to the contrary above or elsewhere in the Bond, this Bond does not cover any loss resulting from or in connection with the acceptance of a Third Party Check where:

- (1) any payee on such Third Party Check reasonably appears to be a corporation or other entity; or
- (2) such Third Party Check is made payable in an amount greater than \$100,000 and does not include the purported endorsements of all payees on such Third Party Check.

It is further understood and agreed that this Rider shall not apply with respect to any coverage that may be available under Insuring Agreement A, "Fidelity."

Except as above stated, nothing herein shall be held to alter, waive or extend any of the terms of this Bond.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 8

| INSURED | | BOND NUMBER |
|---------------------------------|---|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

In consideration of the premium charged for this Bond, it is hereby understood and agreed that, notwithstanding anything to the contrary in General Agreement A of this Bond, Item 1 of the Declarations shall include any Newly Created Investment Company or series, provided that the Insured shall submit to the Underwriter, at least annually, a list of all Newly Created Investment Companies or series, the estimated annual assets of each Newly Created Investment Company or series, and copies of any prospectuses and statements of additional information relating to such Newly Created Investment Companies or series, unless said prospectuses and statements of additional information have been previously submitted.

For purposes of this Rider, Newly Created Investment Company or series shall mean any Investment Company or series declared effective by the U.S. Securities and Exchange Commission after the inception date of this Bond which is advised, distributed or administered by The Vanguard Group, Inc. and for which it has the responsibility of placing fidelity bond coverage.

Except as above stated, nothing herein shall be held to alter, waive or extend any of the terms of this Bond.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 9

| INSURED | | BOND NUMBER |
|---------------------------------|---|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

In consideration for the premium charged for this Bond, it is hereby understood and agreed that notwithstanding anything to the contrary in this Bond (including Insuring Agreement I), this Bond does not cover any loss resulting from any Online Redemption(s) or Online Purchase(s) involving an aggregate amount in excess of the Designated Transaction Limit per shareholder account per day, unless before such redemption(s) or purchase(s), in a procedure initiated by the Insured or by the entity receiving the request for such Online Redemption(s) or Online Purchase(s):

- (a) the Shareholder of Record verifies, by some method other than an Electronic Transmission effected over the Internet, that each such redemption or purchase has been authorized, and
- (b) if such redemption or purchase is to be effected by wire to or from a particular bank account, a duly authorized employee of the bank verifies the account number to or from which funds are being transferred, and that the name on the account is the same as the name of the intended recipient of the proceeds.

It is further understood and agreed that, notwithstanding the Limit of Liability set forth herein or any other provision of this Bond, the Limit of Liability with respect to any Single Loss caused by an Online Transaction shall be Fifty Million Dollars (\$50,000,000) and the Deductible Amount applicable to any such Single Loss is One Million Dollars (\$1,000,000).

It is further understood and agreed that, notwithstanding Section 9, Non-Reduction and Non-Accumulation of Liability and Total Liability, or any other provision of this Bond, the Aggregate Limit of Liability of the Underwriter under this Bond with respect to any and all loss or losses caused by Online Transactions shall be an aggregate of Fifty Million Dollars (\$50,000,000) for the Bond Period, irrespective of the total amount of such loss or losses.

For purposes of this Rider, the following terms shall have the following meanings:

“Designated Transaction Limit” means the Qualified Transaction Limit or the Large Transaction Limit, as appropriate, in effect for each Investment Company and each shareholder account, as such limit has been established by the Insured for each Investment Company, and the determination of which was described and reported in writing to the Underwriter on October 9, 2018.

“Online Purchase” means any purchase of shares issued by an Investment Company, which purchase is requested through an Electronic Transmission over the Internet.

“Online Redemption” means any redemption of shares issued by an Investment Company, which redemption is requested through an Electronic Transmission over the Internet.

“Online Transaction” means any Phone/Electronic Transaction requested through an Electronic Transmission over the Internet.

Except as above stated, nothing herein shall be held to alter, waive, or extend any of the terms of this Bond.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 10

| INSURED | | BOND NUMBER |
|---------------------------------|---|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

In consideration for the premium charged for this Bond, it is hereby understood and agreed that, with respect to Insuring Agreement I only, the Deductible Amount set forth in Item 3 of the Declarations ("Phone/Electronic Deductible") shall not apply with respect to a Single Loss, otherwise covered by Insuring Agreement I, caused by:

- (a) a Phone/Electronic Redemption requested to be paid or made payable by check to the Shareholder of Record and sent to an Authorized Address; or
- (b) a Phone/Electronic Redemption requested to be paid or made payable by wire transfer to the Shareholder of Record at an Authorized Bank Account,

provided, that the Limit of Liability for a Single Loss as described in (1) or (2) above shall be the lesser of 80% of such loss or \$80,000 and that the Insured shall bear the remainder of each such Loss. This Rider shall not apply if the application of the Phone/Electronic Deductible to the Single Loss would result in coverage of greater than \$80,000; in such case the Phone/Electronic Deductible and Limit of Liability set forth in Item 3 of the Declarations shall control.

For purposes of this Rider, "Phone/Electronic Redemption" means any redemption of shares issued by an Investment Company, which redemption is requested (a) by voice over the telephone, (b) through an automated telephone tone or voice response system, (c) by Telefacsimile, or (d) by transmission over the Internet.

Except as above stated, nothing herein shall be held to alter, waive or extend any of the terms of this Bond.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 11

| INSURED | | BOND NUMBER |
|--------------------------|----------------------------------|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

ENHANCED AUTHENTICATION MEASURES AMENDMENT

In consideration for the premium charged for this Bond, it is hereby understood and agreed that SECTION 1. DEFINITIONS is amended by deleting the definition of “Officially Designated” in paragraph U in its entirety and replacing it with the following:

U. “**Officially Designated**” means designated by the Shareholder of Record:

- (1) in the initial account application,
- (2) in writing accompanied by a signature guarantee,
- (3) in writing or by Electronic Transmission, where such designation is verified via a callback to the Shareholder of Record by the Insured at a predetermined telephone number provided by the Shareholder of Record in writing to the Insured at least thirty (30) days prior to such callback,
- (4) in writing, by voice over the telephone, or by Electronic Transmission, where the identity of the Shareholder of Record is contemporaneously confirmed using Enhanced Authentication Measures, or
- (5) solely with respect to requests to send the proceeds of any redemption to any address not designated in accordance with subparagraphs (1) through (4) above, by voice over the telephone or by Electronic Transmission at least 15 days prior to such redemption.

It is further understood and agreed that, notwithstanding the Limit of Liability set forth herein or any other provision of this Bond, the Limit of Liability with respect to any Single Loss caused by a Voice Verified Transaction shall be Ten Million Dollars (\$10,000,000).

It is further understood and agreed that notwithstanding Section 9, Non-Reduction and Non-Accumulation of Liability and Total Liability, or any other provision of this Bond, the Aggregate Limit of Liability of the Underwriter under this Bond with respect to any and all loss or losses

caused by Voice Verified Transactions shall be an aggregate of Ten Million Dollars (\$10,000,000) for the Bond Period, irrespective of the total amount of such loss or losses.

For purposes of this Rider, the following terms shall have the following meanings:

1. “Enhanced Authentication Measures” means the Insured’s security procedures, as implemented through Vanguard Voice Verification™, for authenticating the identity of individuals purporting to be Fund shareholders or subscribers or authorized agents of Fund shareholders or subscribers.
2. “Voice Verified Transaction” means any Phone/Electronic Transaction which is requested by voice over the telephone and which is subject to the Insured’s Enhanced Authentication Measures, as set forth in this Rider.

Except as above stated, nothing herein shall be held to alter, waive or extend any of the terms of this Bond.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 12

| INSURED | | BOND NUMBER |
|--------------------------|----------------------------------|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

Most property and casualty insurers, including ICI Mutual Insurance Company, a Risk Retention Group (“ICI Mutual”), are subject to the requirements of the Terrorism Risk Insurance Act of 2002, as amended (the “Act”). The Act establishes a federal insurance backstop under which ICI Mutual and these other insurers may be partially reimbursed by the United States Government for future **“insured losses”** resulting from certified **“acts of terrorism.”** (Each of these **bolded terms** is defined by the Act.) The Act also places certain disclosure and other obligations on ICI Mutual and these other insurers.

Pursuant to the Act, any future losses to ICI Mutual caused by certified **“acts of terrorism”** may be partially reimbursed by the United States government under a formula established by the Act. Under this formula, the United States government would generally reimburse ICI Mutual for the Federal Share of Compensation of ICI Mutual’s **“insured losses”** in excess of ICI Mutual’s **“insurer deductible”** until total **“insured losses”** of all participating insurers reach \$100 billion (the “Cap on Annual Liability”). If total **“insured losses”** of all property and casualty insurers reach the Cap on Annual Liability in any one calendar year, the Act limits U.S. Government reimbursement and provides that the insurers will not be liable under their policies for their portions of such losses that exceed such amount. Amounts otherwise payable under this Bond may be reduced as a result.

This Bond has no express exclusion for **“acts of terrorism.”** However, coverage under this Bond remains subject to all applicable terms, conditions, and limitations of the Bond (including exclusions) that are permissible under the Act.

The portion of the premium that is attributable to any coverage potentially available under the Bond for **“acts of terrorism”** is one percent (1%) and does not include any charges for the portion of loss that may be covered by the U.S. Government under the Act

As used herein, “Federal Share of Compensation” shall mean 85% in calendar year 2015 and shall be reduced by 1% per calendar year until equal to 80%.

Except as above stated, nothing herein shall be held to alter, waive or extend any of the terms of this Bond.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 13

| INSURED | | BOND NUMBER |
|---------------------------------|---|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

In consideration of the premium charged for this Bond, it is hereby understood and agreed that the Underwriter shall use its best efforts to enter into an agreement with each Facultative Reinsurer on this Bond, regarding the Insureds' rights against such Facultative Reinsurer ("Cut Through Agreement"), in substantially the form(s) previously reviewed and agreed to by the Insureds.

It is further understood and agreed that as used in this rider, "Facultative Reinsurer" means any entity providing reinsurance for this Bond to the Underwriter on a facultative basis (and always excluding any entity providing reinsurance for this Bond to the Underwriter pursuant to treaty).

Nothing herein contained shall be held to vary, alter, waive or extend any of the terms, conditions, provisions, agreements or limitations of this Bond other than as above stated.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 14

| INSURED | | BOND NUMBER |
|--------------------------|----------------------------------|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

In consideration of the premium charged for this Bond, it is hereby understood and agreed that no action involving Vanguard Asset Management Ltd. (“VAM”) and Vanguard Investments Australia Limited (“VIA”) as a party, or otherwise relating to VAM or VIA, may be brought against the Underwriter anywhere other than in a court within the State of Vermont in the United States of America. In the case of any such action, this Bond shall be governed by and construed and enforced only in accordance with (1) the internal laws of the State of Vermont (without reference to choice of law doctrine applicable in such state); and (2) the English text as it appears in this Bond.

It is further understood and agreed that as used in Insuring Agreement F., Securities and Section 2.E of this Bond only, the term “Self-Regulatory Organization” shall be deemed to include any association or organization of investment advisers or securities dealers registered or authorized under the securities laws of any government or any securities exchange registered with any government.

It is further understood and agreed that notwithstanding Section 17 or any other provision of this Bond, this Bond shall terminate immediately as to VAM or VIA without prior notice to any Insured: (1) if there is a change in control (as defined in Section 17 of this Bond) of VAM or VIA by transfer of its outstanding voting securities or otherwise, or (2) if VAM or VIA shall merge or consolidate with an entity such that VAM or VIA is the surviving entity, or purchase or otherwise acquire any other entity or substantially all the assets of another entity, or acquire or create a subsidiary or separate investment portfolio, unless, prior to such change in control, or merger or consolidation, or purchase, or acquisition or creation, respectively (“Event”), VAM or VIA notifies the Underwriter in writing of the impending Event and the Underwriter, in its sole discretion, determines to continue the Bond upon such terms and conditions as the Underwriter may deem appropriate.

Except as above stated, nothing herein shall be held to alter, waive or extend any of the terms of this Bond.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 15

| INSURED | | BOND NUMBER |
|--------------------------|----------------------------------|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

SOCIAL ENGINEERING FRAUD

In consideration of the premium charged for this Bond, it is hereby understood and agreed that this Bond is amended by adding an additional Insuring Agreement M, as follows:

M. Social Engineering Fraud

Loss resulting directly from the Insured, in good faith, transferring, paying, or delivering money from its own account as a direct result of a Social Engineering Fraud;

PROVIDED, that the entity receiving such request generally maintains and follows during the Bond Period all Social Engineering Security Procedures.

The Limit of Liability for a Single Loss under this Insuring Agreement M shall be the lesser of (a) 50% of the amount by which such Single Loss exceeds the Deductible Amount or (b) \$1,000,000 (One Million Dollars), and the Insured shall bear the remainder of any such Single Loss. The Deductible Amount for this Insuring Agreement M is \$1,000,000 (One Million Dollars).

Notwithstanding any other provision of this Bond, the aggregate Limit of Liability under this Bond with respect to any and all loss or losses under this Insuring Agreement M shall be \$1,000,000 (One Million Dollars) for the Bond Period, irrespective of the total amount of such loss or losses.

This Insuring Agreement M does not cover loss covered under any other Insuring Agreement of this Bond.

It is further understood and agreed that for purposes of this rider:

1. "Communication" means an instruction that (a) directs an Employee to transfer, pay, or deliver money from the Insured's own account, (b) contains a material misrepresentation of fact, and (c) is relied upon by the Employee, believing it to be true.

2. "Social Engineering Fraud" means the intentional misleading of an Employee through the use of a Communication, where such Communication:
 - (a) is transmitted to the Employee in writing, by voice over the telephone, or by Electronic Transmission;
 - (b) is made by an individual who purports to be (i) an Employee who is duly authorized by the Insured to instruct another Employee to transfer, pay, or deliver money, or (ii) an officer or employee of a Vendor who is duly authorized by the Insured to instruct an Employee to transfer, pay, or deliver money; and
 - (c) is unauthorized, dishonest or fraudulent and is made with the manifest intent to deceive.
3. "Social Engineering Security Procedures" means security procedures intended to prevent Social Engineering Fraud as set forth in the Application and/or as otherwise provided in writing to the Underwriter.
4. "Vendor" means any entity or individual that provides goods or services to the Insured under a pre-existing, written agreement.

Except as above stated, nothing herein shall be held to alter, waive, or extend any of the terms of this Bond.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 16

| INSURED | | BOND NUMBER |
|--------------------------|----------------------------------|---------------------------|
| The Vanguard Group, Inc. | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

PHONE/ELECTRONIC TRANSACTIONS – INVESTMENT ADVISORY CLIENTS

In consideration of the premium charged for this Bond, it is hereby understood and agreed that this Bond is amended by adding Insuring Agreement N, as follows:

N. Phone/Electronic Transactions – Investment Advisory Clients

Loss resulting directly from an IAC Phone/Electronic Transaction, where the request for such IAC Phone/Electronic Transaction:

1. is transmitted to the Insured by voice over the telephone or by Electronic Transmission; and
2. is made by an individual or entity purporting to be a Designated Client or an authorized agent of a Designated Client; and
3. is unauthorized or fraudulent and is made with the manifest intent to deceive;

PROVIDED, that the entity receiving such request maintains and follows during the Bond Period all IAC Phone/Electronic Transaction Security Procedures with respect to all IAC Phone/Electronic Transactions; and

EXCLUDING loss resulting from:

1. the failure to pay for securities attempted to be purchased; or
2. any transaction involving IAC Account Holdings which had been improperly credited to a Designated Client's account where such Designated Client (a) did not cause, directly or indirectly, such holdings to be credited to such account, and (b) directly or indirectly received any proceeds or other benefit from such transaction; or
3. any transaction involving IAC Account Holdings where the transaction proceeds were requested (i) to be paid or made payable to other than an Authorized IAC Recipient or an Authorized IAC Bank Account or (ii) to be sent to other than an Authorized IAC Address;

4. the failure to adhere to one or more IAC Phone/Electronic Transaction Security Procedures; or
5. any IAC Phone/Electronic Transaction request transmitted by electronic mail or transmitted by any method not subject to the IAC Phone/Electronic Transaction Security Procedures; or
6. the failure or circumvention of any physical or electronic protection device, including any firewall, that imposes restrictions on the flow of electronic traffic in or out of any Computer System.

This Insuring Agreement N does not cover loss covered under Insuring Agreement A, "Fidelity", Insuring Agreement I, "Phone/Electronic Transactions", or Insuring Agreement J, "Computer Security".

The Limit of Liability for a Single Loss under this Insuring Agreement N is \$3,000,000 (Three Million Dollars) and the Deductible Amount is \$1,000,000 (One Million Dollars).

Notwithstanding any other provision of this Bond, the aggregate Limit of Liability with respect to any and all loss or losses under this Insuring Agreement N shall be \$3,000,000 (Three Million Dollars) for the Bond Period, irrespective of the total amount of all such losses.

It is further understood and agreed that for purposes of this rider:

1. "Authorized IAC Bank Account" means any IAC Officially Designated bank account to which transaction proceeds may be sent.
2. "Authorized IAC Address" means (1) any IAC Officially Designated address to which transaction proceeds may be sent, (2) any address designated in writing (not to include Electronic Transmission) by the Designated Client received by the Insured at least one (1) day prior to the effective date of such designation, or (3) any address designated by voice over the telephone or by Electronic Transmission by the Designated Client at least fifteen (15) days prior to the effective date of such designation.
3. "Authorized IAC Recipient" means (1) the Designated Client, or (2) any other IAC Officially Designated person to whom transaction proceeds may be sent.
4. "Designated Client" means any client, other than an Investment Company, (a) to which an Insured provides Investment Advisory Services and (b) which has a written agreement with such Insured authorizing IAC Phone/Electronic Transactions.
5. "IAC Account Holdings" shall mean (a) money on deposit in a Designated Client's account or (b) a Designated Client's securities.
6. "IAC Officially Designated" means designated by the Designated Client:
 - (1) in the initial account application,
 - (2) in writing accompanied by a signature guarantee, or

- (3) in writing or by Electronic Transmission, where such designation is verified via a call back to the Designated Client at a predetermined telephone number provided by the Designated Client in writing to the Insured at least 30 days prior to such call back.
- 7. "IAC Phone/Electronic Transaction" shall mean any transfer, payment, or delivery of IAC Account Holdings, which transfer, payment, or delivery is requested by voice over the telephone or through an Electronic Transaction.
- 8. "IAC Phone/Electronic Transaction Security Procedures" means security procedures for IAC Phone/Electronic Transactions as set forth in the Application and/or as otherwise provided in writing to the Underwriter.

Except as above stated, nothing herein shall be held to alter, waive, or extend any of the terms of this Bond.

**ICI MUTUAL INSURANCE COMPANY,
a Risk Retention Group**

INVESTMENT COMPANY BLANKET BOND

RIDER NO. 17

| INSURED | | BOND NUMBER |
|----------------------------------|----------------------------------|---------------------------|
| Vanguard Fiduciary Trust Company | | 87117119B |
| EFFECTIVE DATE | BOND PERIOD | AUTHORIZED REPRESENTATIVE |
| August 1, 2019 | August 1, 2019 to August 1, 2020 | /S/ Swenitha Nalli |

**ENHANCED AUTHENTICATION MEASURES AMENDMENT
(INVESTMENT ADVISORY CLIENTS)**

In consideration for the premium charged for this Bond, it is hereby understood and agreed that the definition of "IAC Officially Designated" in Rider 16 is replaced in its entirety with the following:

6. **"IAC Officially Designated"** means designated by the Designated Client:
- (1) in the initial account application,
 - (2) in writing accompanied by a signature guarantee,
 - (3) in writing or by Electronic Transmission, where such designation is verified via a callback to the Designated Client by the Insured at a predetermined telephone number provided by the Designated Client in writing to the Insured at least thirty (30) days prior to such callback,
 - (4) in writing, by voice over the telephone, or by Electronic Transmission, where the identity of the Designated Client is contemporaneously confirmed using IAC Enhanced Authentication Measures, or
 - (5) solely with respect to requests to send the proceeds of any redemption to any address not designated in accordance with subparagraphs (1) through (4) above, by voice over the telephone or by Electronic Transmission at least 15 days prior to such redemption.

It is further understood and agreed that, notwithstanding the Limit of Liability set forth herein or any other provision of this Bond, the Limit of Liability with respect to any Single Loss caused by an IAC Voice Verified Transaction shall be Three Million Dollars (\$3,000,000).

It is further understood and agreed that notwithstanding Section 9, Non-Reduction and Non-Accumulation of Liability and Total Liability, or any other provision of this Bond, the Aggregate Limit of Liability of the Underwriter under this Bond with respect to any and all loss or losses

caused by IAC Voice Verified Transactions shall be an aggregate of Three Million Dollars (\$3,000,000) for the Bond Period, irrespective of the total amount of such loss or losses.

For purposes of this Rider, the following terms shall have the following meanings:

1. "IAC Enhanced Authentication Measures" means the Insured's security procedures, as implemented through Vanguard Voice Verification™, for authenticating the identity of individuals purporting to be Designated Clients or authorized agents of Designated Clients.
2. "IAC Voice Verified Transaction" means any IAC Phone/Electronic Transaction which is requested by voice over the telephone and which is subject to the Insured's IAC Enhanced Authentication Measures, as set forth in this Rider.

Except as above stated, nothing herein shall be held to alter, waive or extend any of the terms of this Bond.

CERTIFICATION OF ADOPTION OF RESOLUTIONS

THE UNDERSIGNED HEREBY CERTIFIES individually and on behalf of the following Delaware statutory trusts and their constituent funds (the “Funds”):

- Vanguard Admiral Funds, a series fund consisting of:
 - Vanguard S&P 500 Growth Index Fund
 - Vanguard S&P 500 Value Index Fund
 - Vanguard S&P Mid-Cap 400 Growth Index Fund
 - Vanguard S&P Mid-Cap 400 Index Fund
 - Vanguard S&P Mid-Cap 400 Value Index Fund
 - Vanguard S&P Small-Cap 600 Growth Index Fund
 - Vanguard S&P Small-Cap 600 Index Fund
 - Vanguard S&P Small-Cap 600 Value Index Fund
 - Vanguard Treasury Money Market Fund
- Vanguard Bond Index Funds, a series fund consisting of:
 - Vanguard Inflation-Protected Securities Fund
 - Vanguard Intermediate-Term Bond Index Fund
 - Vanguard Long-Term Bond Index Fund
 - Vanguard Short-Term Bond Index Fund
 - Vanguard Total Bond Market Index Fund
 - Vanguard Total Bond Market II Index Fund
- Vanguard California Tax-Free Funds, a series fund consisting of:
 - Vanguard California Intermediate-Term Tax-Exempt Fund
 - Vanguard California Long-Term Tax-Exempt Fund
 - Vanguard California Municipal Money Market Fund
- Vanguard Charlotte Funds, a series fund consisting of:
 - Vanguard Global Credit Bond Fund
 - Vanguard Total International Bond Index Fund
- Vanguard Chester Funds, a series fund consisting of:
 - Vanguard Institutional Target Retirement Income Fund
 - Vanguard Institutional Target Retirement 2015 Fund
 - Vanguard Institutional Target Retirement 2020 Fund
 - Vanguard Institutional Target Retirement 2025 Fund
 - Vanguard Institutional Target Retirement 2030 Fund
 - Vanguard Institutional Target Retirement 2035 Fund
 - Vanguard Institutional Target Retirement 2040 Fund
 - Vanguard Institutional Target Retirement 2045 Fund
 - Vanguard Institutional Target Retirement 2050 Fund
 - Vanguard Institutional Target Retirement 2055 Fund
 - Vanguard Institutional Target Retirement 2060 Fund
 - Vanguard Institutional Target Retirement 2065 Fund
 - Vanguard PRIMECAP Fund
 - Vanguard Target Retirement Income Fund
 - Vanguard Target Retirement 2015 Fund
 - Vanguard Target Retirement 2020 Fund
 - Vanguard Target Retirement 2025 Fund
 - Vanguard Target Retirement 2030 Fund
 - Vanguard Target Retirement 2035 Fund
 - Vanguard Target Retirement 2040 Fund
 - Vanguard Target Retirement 2045 Fund
 - Vanguard Target Retirement 2050 Fund
 - Vanguard Target Retirement 2055 Fund
 - Vanguard Target Retirement 2060 Fund

- Vanguard Target Retirement 2065 Fund
- Vanguard CMT Funds, a series fund consisting of:
 - Vanguard Market Liquidity Fund
 - Vanguard Municipal Cash Management Fund
- Vanguard Explorer Fund
- Vanguard Fenway Funds, a series fund consisting of:
 - Vanguard Equity Income Fund
 - Vanguard PRIMECAP Core Fund
- Vanguard Fixed Income Securities Funds, a series fund consisting of:
 - Vanguard GNMA Fund
 - Vanguard High-Yield Corporate Fund
 - Vanguard Intermediate-Term Investment-Grade Fund
 - Vanguard Intermediate-Term Treasury Fund
 - Vanguard Long-Term Investment-Grade Fund
 - Vanguard Long-Term Treasury Fund
 - Vanguard Real Estate II Index Fund
 - Vanguard Short-Term Federal Fund
 - Vanguard Short-Term Investment-Grade Fund
 - Vanguard Short-Term Treasury Fund
 - Vanguard Ultra-Short-Term Bond Fund
- Vanguard Horizon Funds, a series fund consisting of:
 - Vanguard Capital Opportunity Fund
 - Vanguard Global Equity Fund
 - Vanguard Strategic Equity Fund
 - Vanguard Strategic Small-Cap Equity Fund
- Vanguard Index Funds, a series fund consisting of:
 - Vanguard 500 Index Fund
 - Vanguard Extended Market Index Fund
 - Vanguard Growth Index Fund
 - Vanguard Large-Cap Index Fund
 - Vanguard Mid-Cap Growth Index Fund
 - Vanguard Mid-Cap Index Fund
 - Vanguard Mid-Cap Value Index Fund
 - Vanguard Small-Cap Growth Index Fund
 - Vanguard Small-Cap Index Fund
 - Vanguard Small-Cap Value Index Fund
 - Vanguard Total Stock Market Index Fund
 - Vanguard Value Index Fund
- Vanguard Institutional Index Funds, a series fund consisting of:
 - Vanguard Institutional Index Fund
 - Vanguard Institutional Total Stock Market Index Fund
- Vanguard International Equity Index Funds, a series fund consisting of:
 - Vanguard Emerging Markets Stock Index Fund
 - Vanguard European Stock Index Fund
 - Vanguard FTSE All-World Ex-US Index Fund
 - Vanguard FTSE All-World Ex-US Small-Cap Index Fund
 - Vanguard Global ex-U.S. Real Estate Index Fund
 - Vanguard Pacific Stock Index Fund
 - Vanguard Total World Stock Index Fund
- Vanguard Malvern Funds, a series fund consisting of:
 - Vanguard Capital Value Fund
 - Vanguard Core Bond Fund
 - Vanguard Emerging Markets Bond Fund
 - Vanguard Institutional Intermediate-Term Bond Fund
 - Vanguard Institutional Short-Term Bond Fund
 - Vanguard Short-Term Inflation-Protected Securities Index Fund
 - Vanguard U.S. Value Fund

Vanguard Massachusetts Tax-Exempt Funds, a series fund consisting of:
 Vanguard Massachusetts Tax-Exempt Fund

Vanguard Money Market Reserves, a series fund consisting of:
 Vanguard Federal Money Market Fund
 Vanguard Prime Money Market Fund

Vanguard Montgomery Funds, a series fund consisting of:
 Vanguard Market Neutral Fund

Vanguard Municipal Bond Funds, a series fund consisting of:
 Vanguard High-Yield Tax-Exempt Fund
 Vanguard Intermediate-Term Tax-Exempt Fund
 Vanguard Limited-Term Tax-Exempt Fund
 Vanguard Long-Term Tax-Exempt Fund
 Vanguard Municipal Money Market Fund
 Vanguard Short-Term Tax-Exempt Fund
 Vanguard Tax-Exempt Bond Index Fund

Vanguard New Jersey Tax-Free Funds, a series fund consisting of:
 Vanguard New Jersey Long-Term Tax-Exempt Fund
 Vanguard New Jersey Municipal Money Market Fund

Vanguard New York Tax-Free Funds, a series fund consisting of:
 Vanguard New York Long-Term Tax-Exempt Fund
 Vanguard New York Municipal Money Market Fund

Vanguard Ohio Tax-Free Funds, a series fund consisting of:
 Vanguard Ohio Long-Term Tax-Exempt Fund

Vanguard Pennsylvania Tax-Free Funds, a series fund consisting of:
 Vanguard Pennsylvania Long-Term Tax-Exempt Fund
 Vanguard Pennsylvania Municipal Money Market Fund

Vanguard Quantitative Funds, a series fund consisting of:
 Vanguard Growth and Income Fund

Vanguard Scottsdale Funds, a series fund consisting of:
 Vanguard Explorer Value Fund
 Vanguard Intermediate-Term Corporate Bond Index Fund
 Vanguard Intermediate-Term Treasury Index Fund
 Vanguard Long-Term Corporate Bond Index Fund
 Vanguard Long-Term Treasury Index Fund
 Vanguard Mortgage-Backed Securities Index Fund
 Vanguard Russell 1000 Growth Index Fund
 Vanguard Russell 1000 Index Fund
 Vanguard Russell 1000 Value Index Fund
 Vanguard Russell 2000 Growth Index Fund
 Vanguard Russell 2000 Index Fund
 Vanguard Russell 2000 Value Index Fund
 Vanguard Russell 3000 Index Fund
 Vanguard Short-Term Corporate Bond Index Fund
 Vanguard Short-Term Treasury Index Fund
 Vanguard Total Corporate Bond ETF
 Vanguard Total World Bond ETF

Vanguard Specialized Funds, a series fund consisting of:
 Vanguard Dividend Appreciation Index Fund
 Vanguard Dividend Growth Fund
 Vanguard Energy Fund
 Vanguard Health Care Fund
 Vanguard Global Capital Cycles Fund
 Vanguard Global ESG Select Stock Fund
 Vanguard Real Estate Index Fund

Vanguard STAR Funds, a series fund consisting of:
 Vanguard LifeStrategy Conservative Growth Fund
 Vanguard LifeStrategy Growth Fund

- Vanguard LifeStrategy Income Fund
- Vanguard LifeStrategy Moderate Growth Fund
- Vanguard STAR Fund
- Vanguard Total International Stock Index Fund
- Vanguard Tax-Managed Funds, a series fund consisting of:
 - Vanguard Developed Markets Index Fund
 - Vanguard Tax-Managed Balanced Fund
 - Vanguard Tax-Managed Capital Appreciation Fund
 - Vanguard Tax-Managed Small-Cap Fund
- Vanguard Trustees' Equity Fund, a series fund consisting of:
 - Vanguard Alternative Strategies Fund
 - Vanguard Commodity Strategy Fund
 - Vanguard Diversified Equity Fund
 - Vanguard Emerging Markets Select Stock Fund
 - Vanguard International Value Fund
- Vanguard Valley Forge Funds, a series fund consisting of:
 - Vanguard Balanced Index Fund
 - Vanguard Managed Payout Fund
- Vanguard Variable Insurance Funds, a series fund consisting of:
 - Vanguard Balanced Portfolio
 - Vanguard Capital Growth Portfolio
 - Vanguard Conservative Allocation Portfolio
 - Vanguard Diversified Value Portfolio
 - Vanguard Equity Income Portfolio
 - Vanguard Equity Index Portfolio
 - Vanguard Global Bond Index Portfolio
 - Vanguard Growth Portfolio
 - Vanguard High Yield Bond Portfolio
 - Vanguard International Portfolio
 - Vanguard Mid-Cap Index Portfolio
 - Vanguard Moderate Allocation Portfolio
 - Vanguard Money Market Portfolio
 - Vanguard Real Estate Index Portfolio
 - Vanguard Short-Term Investment-Grade Portfolio
 - Vanguard Small Company Growth Portfolio
 - Vanguard Total Bond Market Index Portfolio
 - Vanguard Total International Stock Market Index Portfolio
 - Vanguard Total Stock Market Index Portfolio
- Vanguard Wellesley Income Fund
- Vanguard Wellington Fund, a series fund consisting of:
 - Vanguard U.S. Liquidity Factor ETF
 - Vanguard U.S. Minimum Volatility Factor ETF
 - Vanguard U.S. Momentum Factor ETF
 - Vanguard U.S. Multifactor ETF
 - Vanguard U.S. Multifactor Fund
 - Vanguard U.S. Quality Factor ETF
 - Vanguard U.S. Value Factor ETF
 - Vanguard Wellington Fund
- Vanguard Whitehall Funds, a series fund consisting of:
 - Vanguard Emerging Markets Government Bond Index Fund
 - Vanguard Global Minimum Volatility Fund
 - Vanguard High Dividend Yield Index Fund
 - Vanguard International Dividend Appreciation Index Fund
 - Vanguard International Explorer Fund
 - Vanguard International High Dividend Yield Index Fund
 - Vanguard Mid-Cap Growth Fund
 - Vanguard Selected Value Fund

Vanguard Windsor Funds, a series fund consisting of:
Vanguard Windsor Fund
Vanguard Windsor II Fund
Vanguard World Fund, a series fund consisting of:
Vanguard Communication Services Index Fund
Vanguard Consumer Discretionary Index Fund
Vanguard Consumer Staples Index Fund
Vanguard Energy Index Fund
Vanguard ESG U.S. Stock ETF
Vanguard ESG International Stock ETF
Vanguard Extended Duration Treasury Index Fund
Vanguard FTSE Social Index Fund
Vanguard Financials Index Fund
Vanguard Global Wellesley Income Fund
Vanguard Global Wellington Fund
Vanguard Health Care Index Fund
Vanguard Industrials Index Fund
Vanguard Information Technology Index Fund
Vanguard International Growth Fund
Vanguard Materials Index Fund
Vanguard Mega Cap Growth Index Fund
Vanguard Mega Cap Index Fund
Vanguard Mega Cap Value Index Fund
Vanguard U.S. Growth Fund
Vanguard Utilities Index Fund

that I am the duly elected and qualified Assistant Secretary of each of the Funds, and that set forth below is a true and correct copy of resolutions duly adopted by a majority of the Trustees who are not interested persons of the Funds at meetings of the Board of Trustees of each of the Funds (each, a “Board”) duly held on July 25 & 26, 2019, and that such resolutions have not been amended or rescinded and are now in full force and effect:

RESOLVED, that the form and amount of the joint insured fidelity bond maintained through ICI Mutual Insurance Company (“ICI Mutual”) in the aggregate amount of \$400 million covering the Vanguard Funds (“Funds”), The Vanguard Group, Inc. (“Vanguard”), and Vanguard Marketing Corporation, for the 12-month period ending July 31, 2020, is approved by the Board, including a majority of the Trustees of the Board that are not interested persons of any Fund (“Independent Trustees”) as that term is defined in the Investment Company Act of 1940, as amended (“1940 Act”), in substantially the form presented at the meeting with such changes as management, in consultation with counsel, deems necessary or appropriate;

FURTHER RESOLVED, that the Board, including a majority of the Independent Trustees, determines that the form and amount of fidelity bond coverage is reasonable after consideration of all factors deemed relevant by the Board, including, but not limited to, the value of the Funds’ assets; the Board-approved expense-sharing methodology; the capacity of the insurance marketplace; the other parties named as insureds; the nature of the business activities of the other insureds; the ratable allocation of the premium among the parties named as insured; the arrangements made for the custody and safekeeping of the Funds’ assets; the Funds’ internal controls; and the nature of the securities in the Funds’ portfolios;

FURTHER RESOLVED, that the officers of each Fund, individually, are authorized and directed to execute such other documents and take such other action as may be deemed necessary or appropriate to effect the intent of the foregoing resolutions and maintain each Fund’s fidelity bond including, but not limited to, changing or amending the recovery allocation agreement (the “Agreement”) as the officers, in consultation with counsel, deem necessary or appropriate, and executing the Agreement on behalf of each Fund; and

FURTHER RESOLVED, that the officers of the Funds are hereby authorized to make the filings and give the notices required by Rule 17g-1(g) under the 1940 Act.

IN WITNESS WHEREOF, I have executed this Certification as of this 10th day of September, 2019.

/s/ Laura J. Merianos
Laura J. Merianos
Assistant Secretary

The Vanguard Group, Inc. maintains a \$400 million joint fidelity bond for all of the registered investment companies in the Vanguard Group, underwritten by ICI Mutual Insurance Company. The bond is for a one-year term beginning August 1, 2019, with an annual premium of \$1.9 million. The premium was paid in full on September 3, 2019.

AGREEMENT

Made as of this 30th day of August, 2017, by and among VANGUARD ADMIRAL FUNDS, VANGUARD BOND INDEX FUNDS, VANGUARD CALIFORNIA TAX-FREE FUNDS, VANGUARD CHARLOTTE FUNDS, VANGUARD CHESTER FUNDS, VANGUARD CMT FUNDS, VANGUARD CONVERTIBLE SECURITIES FUND, VANGUARD EXPLORER FUND, VANGUARD FENWAY FUNDS, VANGUARD FIXED INCOME SECURITIES FUNDS, VANGUARD HORIZON FUNDS, VANGUARD INDEX FUNDS, VANGUARD INSTITUTIONAL INDEX FUNDS, VANGUARD INTERNATIONAL EQUITY INDEX FUNDS, VANGUARD MALVERN FUNDS, VANGUARD MASSACHUSETTS TAX-EXEMPT FUNDS, VANGUARD MONEY MARKET RESERVES, VANGUARD MONTGOMERY FUNDS, VANGUARD MORGAN GROWTH FUND, VANGUARD MUNICIPAL BOND FUNDS, VANGUARD NEW JERSEY TAX-FREE FUNDS, VANGUARD NEW YORK TAX-FREE FUNDS, VANGUARD OHIO TAX-FREE FUNDS, VANGUARD PENNSYLVANIA TAX-FREE FUNDS, VANGUARD QUANTITATIVE FUNDS, VANGUARD SCOTTSDALE FUNDS, VANGUARD SPECIALIZED FUNDS, VANGUARD STAR FUNDS, VANGUARD TAX-MANAGED FUNDS, VANGUARD TRUSTEES' EQUITY FUND, VANGUARD VALLEY FORGE FUNDS, VANGUARD VARIABLE INSURANCE FUNDS, VANGUARD WELLESLEY INCOME FUND, VANGUARD WELLINGTON FUND, VANGUARD WHITEHALL FUNDS, VANGUARD WINDSOR FUNDS, AND VANGUARD WORLD FUND (hereinafter collectively referred to as the "Funds") and THE VANGUARD GROUP, INC. ("Vanguard"), AND VANGUARD MARKETING CORPORATION ("VMC").

THIS AGREEMENT is entered into under the following circumstances:

WHEREAS, Section 17(g) of the Investment Company Act of 1940 ("the Act") provides that the Securities and Exchange Commission ("SEC") is authorized to require that the officers and employees of registered management investment companies who, either singly or jointly with others, may have access to the Funds' assets, be bonded against larceny and embezzlement, and the SEC has promulgated such rules and regulations ("Rule 17g-1"); and

WHEREAS, the Funds, Vanguard and WMC are named as joint insureds under the terms of a bond or policy of insurance with total coverage of \$400,000,000 which insures against larceny and embezzlement by officers and employees (the "Joint Insured Bond"); and

WHEREAS, a majority of the members of the Boards of Trustees of the Funds (the “Board”), who are not “interested persons” as defined by Section 2(a)(19) of the Act, have given due consideration to all factors relevant to the form, amount and apportionment of recoveries and premium on the Joint Insured Bond, and the Boards have approved the term and amount of the Joint Insured Bond, the portion of the premium payable by each party, and the manner in which recovery on the Joint Insured Bond, if any, shall be shared by and among the parties as set forth below in this Agreement; and

WHEREAS, the Funds, Vanguard and VMC now desire to enter into this Agreement as required by Rule 17g-1(f) of the Act to establish the manner in which recovery on the Joint Insured Bond, if any, shall be shared.

NOW, THEREFORE, IT IS HEREBY AGREED by and among the parties as follows:

1. ALLOCATION OF PREMIUMS

The annual premium shall be allocated among the Funds, based on relative net assets, in accordance with a Board-approved methodology, and expensed monthly over the term of the Joint Insured Bond.

2. ALLOCATION OF RECOVERIES

A. In the event of a separate loss or losses under the Joint Insured Bond, the party suffering a loss or losses shall be entitled to be indemnified up to the full amount of the Joint Insured Bond.

B. If more than one party is damaged in a single loss or occurrence for which recovery is received under the Joint Insured Bond, each such party shall receive that portion of the recovery which represents the loss sustained by that party, unless the recovery is inadequate to fully indemnify each party sustaining a loss.

C. If the recovery is inadequate to fully indemnify each party sustaining a loss, the recovery shall be allocated among the parties as follows:

(i) Each party sustaining a loss shall be allocated an amount equal to the lesser of its actual loss or at least equal to the amount which it would have received had it provided and maintained a single insured bond with the minimum coverage as set forth in Exhibit A as attached.

(ii) The remaining portion of the recovery shall be allocated to each party sustaining a loss not fully indemnified by the allocation under subparagraph (i) above, in ratio of the premium paid by each such party to the premium paid by all parties.

3. BOND COVERAGE REQUIRED

Each party has determined the minimum amount of fidelity bond coverage deemed appropriate to be maintained. This amount is set forth in Exhibit A and each Fund represents and warrants to each of the other parties that the minimum amount of coverage required by Rule 17g-1(d)(1) is not more than reflected in Exhibit A. Each Fund further agrees that its minimum coverage shall not be less than the minimum coverage required by Rule 17g-1(d)(1).

4. This Agreement shall apply to the present fidelity bond coverage and any renewal or replacement thereof and shall continue until terminated by any party that provides 60 days' written notice to the other parties.

5. Any dispute arising under this Agreement shall be submitted to arbitration under the Rules of the American Arbitration Association and the decision rendered therein shall be final and binding upon the parties hereto.

6. No amendment, modification, or supplement of any provision of this Agreement will be valid or effective unless made in writing and signed by a duly authorized representative of each party. Notwithstanding the foregoing, Exhibit A to this Agreement shall be reviewed and updated by the parties from time to time as agreed by the parties. Such Exhibit A may be revised and replaced by (a) mutual written agreement, which does not require an amendment to the Agreement, or (b) one party providing written notice to the other parties. Such written agreement or notice shall set forth the revised version of the Exhibit A and the date on which such revisions shall be effective.

- Remainder of page intentionally left blank. -

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed on their behalf by their duly authorized officers as of the date first written above.

VANGUARD ADMIRAL FUNDS
VANGUARD BOND INDEX FUNDS
VANGUARD CALIFORNIA TAX-FREE FUNDS
VANGUARD CHARLOTTE FUNDS
VANGUARD CHESTER FUNDS
VANGUARD CMT FUNDS
VANGUARD CONVERTIBLE SECURITIES FUND
VANGUARD EXPLORER FUND
VANGUARD FENWAY FUNDS
VANGUARD FIXED INCOME SECURITIES FUNDS
VANGUARD HORIZON FUNDS
VANGUARD INDEX FUNDS
VANGUARD INSTITUTIONAL INDEX FUNDS
VANGUARD INTERNATIONAL EQUITY INDEX FUNDS
VANGUARD MALVERN FUNDS
VANGUARD MASSACHUSETTS TAX-EXEMPT FUNDS
VANGUARD MONEY MARKET RESERVES
VANGUARD MONTGOMERY FUNDS
VANGUARD MORGAN GROWTH FUND
VANGUARD MUNICIPAL BOND FUNDS
VANGUARD NEW JERSEY TAX-FREE FUNDS
VANGUARD NEW YORK TAX-FREE FUNDS
VANGUARD OHIO TAX-FREE FUNDS
VANGUARD PENNSYLVANIA TAX-FREE FUNDS
VANGUARD QUANTITATIVE FUNDS
VANGUARD SCOTTSDALE FUNDS
VANGUARD SPECIALIZED FUNDS
VANGUARD STAR FUNDS
VANGUARD TAX-MANAGED FUNDS
VANGUARD TRUSTEES' EQUITY FUND
VANGUARD VARIABLE INSURANCE FUNDS
VANGUARD VALLEY FORGE FUNDS
VANGUARD WELLESLEY INCOME FUND
VANGUARD WELLINGTON FUND
VANGUARD WHITEHALL FUNDS
VANGUARD WINDSOR FUNDS
VANGUARD WORLD FUND

By: /s/ Anne E. Robinson
Anne E. Robinson
Secretary

Attest: /s/ Laura J. Merianos
Laura J. Merianos
Assistant Secretary

THE VANGUARD GROUP, INC.

By: /s/ Anne E. Robinson
Anne E. Robinson
Managing Director, General Counsel, and Secretary

Attest: /s/ Michael L. Kimmel
Michael L. Kimmel
Principal and Assistant Secretary

VANGUARD MARKETING CORPORATION

By: /s/ Anne E. Robinson
Anne E. Robinson
Director and Senior Vice President

Attest: /s/ Michael L. Kimmel
Michael L. Kimmel
Assistant Secretary

EXHIBIT A

Rule 17g-1 Minimum Bond Requirements

| Fund/Portfolio Name | Net Assets | Bond Requirement |
|---|--------------------------|-------------------------|
| Vanguard Admiral Funds | 36,491,568,670 | 2,500,000 |
| Vanguard Bond Index Funds | 514,367,273,949 | 2,500,000 |
| Vanguard California Tax-Free Funds | 24,744,967,810 | 2,500,000 |
| Vanguard Charlotte Funds | 125,336,190,016 | 2,500,000 |
| Vanguard Chester Funds | 527,353,269,312 | 2,500,000 |
| Vanguard CMT Funds | 84,221,660,206 | 2,500,000 |
| Vanguard Explorer Fund | 16,399,346,190 | 2,500,000 |
| Vanguard Fenway Funds | 46,228,277,902 | 2,500,000 |
| Vanguard Fixed Income Securities Funds | 188,206,409,218 | 2,500,000 |
| Vanguard Horizon Funds | 32,953,940,880 | 2,500,000 |
| Vanguard Index Funds | 1,834,719,178,434 | 2,500,000 |
| Vanguard Institutional Index Funds | 272,139,155,781 | 2,500,000 |
| Vanguard International Equity Index Funds | 185,383,922,335 | 2,500,000 |
| Vanguard Malvern Funds | 58,827,936,667 | 2,500,000 |
| Vanguard Massachusetts Tax-Exempt Funds | 1,971,705,234 | 1,500,000 |
| Vanguard Money Market Reserves | 242,394,631,579 | 2,500,000 |
| Vanguard Montgomery Funds | 1,186,159,911 | 1,500,000 |
| Vanguard Municipal Bond Funds | 160,644,863,815 | 2,500,000 |
| Vanguard New Jersey Tax-Free Funds | 3,720,343,629 | 2,100,000 |
| Vanguard New York Tax-Free Funds | 8,191,865,285 | 2,500,000 |
| Vanguard Ohio Tax-Free Funds | 1,277,457,534 | 1,250,000 |
| Vanguard Pennsylvania Tax-Free Funds | 5,710,715,386 | 2,500,000 |
| Vanguard Quantitative Funds | 11,285,532,889 | 2,500,000 |
| Vanguard Scottsdale Funds | 102,244,525,159 | 2,500,000 |
| Vanguard Specialized Funds | 196,084,896,988 | 2,500,000 |
| Vanguard STAR Funds | 440,570,857,195 | 2,500,000 |
| Vanguard Tax-Managed Funds | 136,768,661,400 | 2,500,000 |
| Vanguard Trustees' Equity Fund | 13,002,468,678 | 2,500,000 |
| Vanguard Valley Forge Funds | 42,845,000,007 | 2,500,000 |
| Vanguard Variable Insurance Funds | 34,057,565,993 | 2,500,000 |
| Vanguard Wellesley Income Fund | 54,293,700,105 | 2,500,000 |
| Vanguard Wellington Fund | 105,471,506,210 | 2,500,000 |
| Vanguard Whitehall Funds | 56,931,906,651 | 2,500,000 |
| Vanguard Windsor Funds | 66,297,948,664 | 2,500,000 |
| Vanguard World Fund | 150,729,154,613 | 2,500,000 |
| TOTALS | 5,783,054,564,295 | 87,600,000 |