MINUTES OF MEETING

OF THE BOARD OF DIRECTORS

RETIREMENT SYSTEM OF THE TENNESSEE VALLEY AUTHORITY

June 15, 2017

[Edited to remove personal information of members and retirees and proprietary or other confidential information pursuant to TVARS Confidentiality Policy]

The regular quarterly meeting of the Board of Directors (Board) of the TVA Retirement System (System) was held on Thursday, June 15, 2017, at 1:53 p.m., EDT, at the TVA Knoxville Office Complex, WT Plaza 402, Knoxville, Tennessee.

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The following directors were present: Allen E. Stokes, Chair; Anthony L. Troyani, Vice Chair; Brian M. Child; James W. Hovious; Leonard J. Muzyn; Wilson Taylor III; and Tammy W. Wilson. Also present were Patrick D. Brackett, Executive Secretary; William B. Jenkins, Jr., Assistant Secretary; Sally R. Weber, Manager, Retirement Operations; Veenita Bisaria, Manager, Investment & Risk Management; Chris A. Stinnett, Sr. Analyst, Investment & Risk Management; W. Colby Carter, Senior Counsel; and Vincent V. Sands, Board Adviser.

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468-1 Each director was notified in a memorandum dated May 30, 2017, of the regular quarterly meeting to be held on June 15, 2017. A copy of the notice from the Executive Secretary is filed as Exhibit 468-1.

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468-2 (A-6424). There were no items to report from the Chair.

468-3 (A-6425). The Executive Secretary's report noted his discussion with the Board on

System personnel and succession planning pursuant to the System's policy on succession

planning, which occurred prior to the Board meeting.

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468-4 (A-6426). The legal update included the following:

- Senior Counsel provided the Board a copy of the latest proposed amendments to provide election options for cash balance participants and an update on the process for a private letter ruling request to the IRS regarding these amendments.
- Senior Counsel informed the Board that plaintiffs in the lawsuit against TVA and TVARS have filed a notice of appeal with the Sixth Circuit Court of Appeals on the remaining claims ruled on by the District Court and provided an update on the status of the case and the upcoming dates for when briefs with the appeal are due to the Court.

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468-5 (A-6427). The Board noted its previous notational action approving an engagement with Fidelity Benefits Consulting to provide personal retirement readiness statements for System members with cash balance and 401(k) plan benefits. A memo and email from the Executive Secretary to the Board regarding the retirement readiness statement project is filed as Exhibit 468-5.

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468-6 (A-6428). The Board noted its previous notational action approving the 1-year renewal of the System's fiduciary liability insurance policy for the Board and System staff from AIG with \$10 million in coverage, subject to a \$500,000 deductible, with no prior acts exclusions. A copy of the insurance policy renewal quote from AIG and the insurance application and policy is filed as Exhibit 468-6.

468-7 (A-6429). The Board approved the minutes of Meeting No. 467 held March 6, 2017.

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468-8 (A-6430). The Board accepted the Treasurer's Report for the quarter ended March31, 2017. A copy of the Treasurer's Report is filed as Exhibit 468-8.

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468-9 (A-6431). The Board accepted the Investment Performance Report prepared by Wilshire Associates Incorporated (Wilshire) for the quarter ended March 31, 2017. A copy of the Investment Performance Report is filed as Exhibit 468-9.

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468-10 (A-6432). The Board accepted the report of retirements approved for the quarter ended March 31, 2017. A copy of the report with summary demographic information regarding retirements in the quarter is filed as Exhibit 468-10.

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468-11 (A-6433). The Board accepted the quarterly review for the TVA Savings and Deferral Retirement Plan (401(k) Plan) prepared by Fidelity Investment Institutional Services Company (Fidelity) for the quarter ended March 31, 2017. A copy of the 401(k) Plan quarterly review is filed as Exhibit 468-11.

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468-12 (A-6434). The Investment Committee report consisted of the items reported below at A-6435 and A-6436, and of the following items:

- The Board was provided and took note of the quarterly report on manager compliance with investment guidelines. A copy of the report, dated March 31, 2017, is filed as Exhibit 468-12(a).
- The Board was provided and took note of information regarding asset allocation and investment manager asset transfers during the first quarter of 2017. A copy of this information is filed as Exhibit 468-12(b).
- The Board was provided and took note of information on due diligence meetings and conference calls between System staff and investment managers and service providers for the period February 2017 through May 2017. A copy of the information is filed as Exhibit 468-12(c).
- The Board was provided an update on the funded status of the System through March 2017. A copy of the asset liability monitor report is filed as Exhibit 468-12(d).
- The Board reviewed and discussed the quarterly 401(k) Plan Discussion Guide from AHIC covering the following: market information, performance of the investment funds in the 401(k) Plan's lineup, manager updates, fee analysis, and stable value fund review. A copy of the AHIC 401(k) Plan Discussion Guide is filed as Exhibit 468-12(e).
- The Board was provided and discussed with Wilshire and System investment staff information on the following System portfolios: a domestic small cap equity portfolio managed by Neuberger Berman; a global TIPS portfolio managed by Bridgewater Associates; and a high yield fixed income portfolio managed by Oaktree Capital Management. A copy of this information is filed as Exhibit 468-12(f).
- Wilshire provided education to the Board on "smart beta" multi-factor based investment strategies and will work with the System investment staff to develop potential opportunities for the System. A copy of Wilshire's multi-factor based investing presentation is filed as Exhibit 468-12(g).
- The Board was provided informational excerpts from sessions at the recent Wilshire client conference. A copy of this collection of Wilshire conference excerpts is filed as Exhibit 468-12(h).
- The Board was provided information and a timeline on the request for proposal (RFP) process for the System's investment consultant to be conducted by the System investment staff pursuant to the System's Service Provider Evaluation and Interaction Policy. A copy of this information is filed as Exhibit 468-12(i).
- The Board was provided educational information by the System's investment staff on transition management services, providers and agreements. A copy of this transition management information is filed as Exhibit 468-12(j).

• The Board was provided notice of an investment guideline amendment for Bridgewater's global TIPS account. A copy of the amended guidelines is filed as Exhibit 468-12(k).

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468-13 (A-6435). On June 2, 2017, the Investment Committee met in Chattanooga and discussed with the Executive Secretary and the System investment staff the performance of Aon Hewitt Investment Consulting (AHIC) as the consultant for the 401(k) Plan and a proposed extension of the original 3-year contract with AHIC. After discussion, and upon the recommendation of the Investment Committee, the Board approved a 3-year extension of the System's contract with AHIC to provide 401(k) Plan consulting services and delegated authority to the Executive Secretary to take any actions necessary to enter into this new contract. A copy of the new 401(k) Plan consulting agreement with AHIC is filed as Exhibit 468-13.

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468-14 (A-6436). On June 2, 2017, the Investment Committee met in Chattanooga and discussed with Wilshire and the System investment staff an analysis of the asset class benchmark options for the System's high yield portfolio. Upon the recommendation of Wilshire and the Investment Committee, the Board approved revising the high yield asset class benchmark to a composite of 50% Credit Suisse High Yield Index and 50% Citi High Yield Cash Pay Cap All BB/B Index to better reflect the actual strategy and composition of the System's high yield portfolio. A copy of the high yield benchmark fit analysis from Wilshire to the Board is filed as Exhibit 468-14.

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468-15 (A-6437). The Retirement Committee report consisted of items reported below at A-6438, A-6439, A-6440, A-6441, A-6442, A-6443 and A-6444, and of the following items:

- The System staff provided the Board an update on the implementation timeline for the defined benefit plan disbursement services to be provided by Bank of New York Mellon (BNY Mellon), the System's master trustee. A copy of the BNY Mellon payroll conversion timeline is filed as Exhibit 468-15(a).
- The Board was provided and discussed with Senior Counsel the latest version of proposed amendments to the System Rules and Regulations and 401(k) Plan Provisions that would be part of an IRS Private Letter Ruling request, which would allow those System members with cash balance accounts and benefits to elect to receive future retirement benefits through the 401(k) Plan only and also allow them to transfer their cash balance account value to the 401(k) Plan. A copy of the proposed amendments is filed as Exhibit 468-15(b).
- On June 2, 2017, the Board reviewed with Mercer the preliminary results of a longterm funding policy study for the System. As a part of the Retirement Committee, the Board further discussed the long-term funding policy study results, including various funding alternatives and accompanying model potential outcomes. As a part of its review of the long-term funding policy study, the Board requested several additional scenarios to be modeled by Mercer. A copy of Mercer's funding policy study preliminary results for the System, dated June 2, 2017, is filed as Exhibit 468-15(c).
- The Board was provided a March 2017 report by the U.S. Government Accountability Office (GAO) to TVA entitled "Actions Needed to Better Communicate Debt Reduction Plans and Address Billions in Unfunded Pension Liabilities" and discussed the analysis and recommendations by the GAO regarding the liabilities and funding of the System. A copy of the GAO report is filed as Exhibit 468-15(d).
- The System staff provided the Board an implementation timeline for the personal retirement readiness statements to be developed with and provided by Fidelity to System members with cash balance and 401(k) Plan benefits along with a sample content document for the statements. A copy of the implementation timeline and content document are filed as Exhibit 468-15(e).

468-16 (A-6438). Upon the recommendation of the Retirement Committee, the Board voted 6 to 1 to accept the Report of Actuary on the Seventy-Seventh Actuarial Valuation of the TVA Retirement System prepared as of September 30, 2016. As set forth in the report, Mercer calculated the minimum required contribution to the System for fiscal year 2018 to be \$300 million per section 9B4 of the System Rules and Regulations. Directors Child, Hovious, Stokes, Taylor, Troyani and Wilson voted in favor of accepting the report, and Director Muzyn voted

against accepting the report. A copy of Mercer's actuarial report of the System as of September 30, 2016, is filed as Exhibit 468-16.

Director statements submitted regarding the vote

Statement of Director Muzyn:

I voted against accepting this report not because I disagree with any facts contained in the report, but because the calculated contribution for fiscal year 2018 of \$202 million is so obviously inadequate. TVARS has a deferred pension liability of \$6 billion measured the way TVA does, or \$2.5 billion the way TVARS does using a high 6.75 percent discount rate. \$161 million of the \$202 million is an accrued liability contribution. The annual accrued liability contributions are meant to eventually pay off the existing deferred pension liability. The \$161 million was calculated based on a 30-year open amortization period. The Government Accountability Office has told TVA that best practices require a closed amortization period of no more than 15 to 20 years. Following best practices would increase the calculated required annual contribution amounts to more reasonable levels.

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468-17 (A-6439). Upon the recommendation of the Retirement Committee, the Board accepted the actuarial valuation of the Variable Annuity Fund as of September 30, 2016, by Mercer, and its recommendation that the outstanding variable units should be increased by 240,326. The increase in number of units will result in a decrease in the unit value and will be applied beginning with the July 2017 payroll. A copy of Mercer's TVA Retirement System Variable Annuity Valuation Report as of September 30, 2016, is filed as Exhibit 468-17.

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468-18 (A-6440). The Board previously reviewed with Fidelity information on the utilization of the 401(k) Plan loan program by participants in the 401(k) Plan. The review indicated that the 401(k) Plan has higher loan utilization than peer plans and a higher percentage of participants who take back-to-back loans. Following the review, Fidelity provided to the Board information on how loans impact the savings rates and long-term accumulation of 401(k)

Plan savings by those participants who use loans. As a result, the Board indicated its desire to appropriately manage the 401(k) Plan loan program to ensure that participants may still access loans when needed but in a way that does not negatively impact their ability to prepare for retirement. The System staff informed the Board that Fidelity has already implemented education tools for participants going through the loan application process, including pop up screens indicating the effects on retirement accounts to be considered. During the review process, Fidelity indicated that a best practice is to implement a waiting period between loans, which the Board discussed with System staff as well as other best practices to manage loan use and utilization. Following this discussion, and upon the recommendation of the Retirement Committee, the Board approved by a 6 to 1 vote implementing a 60-day waiting period between loans by participants in the 401(k) Plan. Directors Child, Muzyn, Stokes, Taylor, Troyani and Wilson voted in favor of the waiting period, and Director Hovious voted against the waiting period. As a part of this approved loan policy change, the Board adopted the following resolution regarding the 401(k) Plan loan program conditions:

WHEREAS, Article 8.6 of the Provisions of the Tennessee Valley Authority Savings and Deferral Retirement Plan (401(k) Plan) provides that the TVARS Board may, in its sole discretion, authorize loans to participants who are active TVA employees subject to the terms and conditions set forth in Article 8.6; and

WHEREAS, Article 8.6 of the 401(k) Plan Provisions further provides that the TVARS Board may adopt additional uniform conditions regarding such loans;

WHEREAS, the TVARS Board, by resolutions dated April 27, 1989 (Minute Entry 279-2) and dated December 2, 2005 (Minute Entry 400-28) adopted additional uniform conditions regarding loans under Article 8.6; and

WHEREAS, the TVARS Board previously approved using for the 401(k) Plan the loan and hardship withdrawal approval and loan interest rate services of Fidelity Investments (Fidelity), the 401(k) Plan's provider of recordkeeping services (Minute Entry 443-17);

WHEREAS, as a part of the 401(k) Plan loan and hardship withdrawal services, which are provided in accordance with the terms and conditions set forth in Article 8.6 of the 401(k) Plan Provisions, TVARS and Fidelity agree on the additional guidelines and conditions that Fidelity will use in the administration of these service; and

WHEREAS, the TVARS Board desires to have the flexibility to determine and make changes to the guidelines and conditions for 401(k) Plan loans and hardship withdrawals in agreement with Fidelity in its administration of these services; and

WHEREAS, as a part of analyzing and determining with Fidelity new guidelines and conditions for 401(k) Plan loans in an effort to improve retirement outcomes for participants, the TVARS Board desires to add a waiting period of 60 days between loans by participants in the 401(k) Plan;

BE IT RESOLVED, that the TVARS Board hereby determines that, as allowed by Article 8.6 of the 401(k) Plan Provisions, the Board will adopt additional uniform conditions regarding loans and hardship withdrawals under the 401(k) Plan by agreement with Fidelity as the provider of loan and hardship withdrawals services; and

BE IT FURTHER RESOLVED, that the conditions and guidelines already agreed to by TVARS and Fidelity in the administration of loan and hardship withdrawal services will become the additional uniform conditions adopted by the TVARS Board pursuant to Article 8.6; and

BE IT FURTHER RESOLVED, that the TVARS Board in agreement with Fidelity will also establish a 60-day waiting period between loans by eligible 401(k) Plan participants; and

BE IT FURTHER RESOLVED, that the previous resolutions dated April 27, 1989 and December 2, 2005, adopted uniform conditions for 401(k) Plan loans are hereby rescinded.

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468-19 (A-6441). Pursuant to Section 6C1 of the System's Rules and Regulations, the

Board considered the disability retirement application of [redacted], a current TVA employee.

After review and discussion of the medical evaluation, human resources information, and an

independent medical review, the Board approved [redacted]'s disability retirement application.

A copy of the disability retirement application materials is filed as Exhibit 468-19.

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468-20 (A-6442). Pursuant to Section 6C1 of the System's Rules and Regulations, the Board considered the disability retirement application of [*redacted*], a current TVA employee. After review and discussion of the medical evaluation, human resources information, and an independent medical review, the Board disapproved [*redacted*]'s disability retirement application. A copy of the disability retirement application materials is filed as Exhibit 468-20.

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468-21 (A-6443). Pursuant to the System's Administrative Claims and Appeals Procedures, the Board considered an appeal from [*redacted*], a current TVA employee who elected to change to a cash balance benefit in 1998, requesting a retroactive reinstatement to the Original Benefit Structure based on the fact that non-creditable service for some periods of leave without pay were used in his benefit comparison estimates at the time of his election decision. After discussion with System staff and review of alternate information scenarios without the creditable service, the Board did not find any potential detrimental reliance in [*redacted*]'s situation and voted 6 to 1 to deny [*redacted*]'s request to be reinstated in the Original Benefit Structure. Directors Child, Muzyn, Stokes, Taylor, Troyani and Wilson voted to deny the appeal request, and Director Hovious voted to grant the appeal request. A copy of the appeal materials is filed as Exhibit 468-21.

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468-22 (A-6444). The Executive Secretary provided the Board information on the System's practice of paying interest on lump-sum benefit payments calculated from the effective date of benefit certification or approval through the date of payment. After discussion, the Board approved ending the practice of paying interest on lump-sum benefit payments with the following resolution:

WHEREAS, the TVARS Board previously voted to provide interest on lump-sum pension and annuity benefit payments, transfers, and rollovers to retirees and beneficiaries and established guidelines for the accrual of interest from the effective date of benefit certification or approval through the date of payment, transfer, or rollover; and

WHEREAS, the TVARS Board approved adding interest to lump-sum payments, transfers, and rollovers by resolution and not by amendment to the TVARS Rules and Regulations; and

WHEREAS, the TVARS Board has determined that the original reasons for the TVARS Board approving interest on lump-sum benefit payments, transfers, and rollovers no longer exist (high interest rates on short-term savings accounts and the length of time between the benefit distribution event and the actual payment of the benefit); and

WHEREAS, the TVARS Board acknowledges that payment of interest on such lump sums to retirees and beneficiaries is not a common practice, is currently a burden for System staff to administer, and will not be possible once payment services are outsourced to the System's trustee and custodian;

BE IT RESOLVED, given the fact that the original reasons for providing interest no longer exist, the TVARS Board determines that, effective August 1, 2017, the System will no longer provide for or accrue interest on lump-sum benefit payments to retirees and beneficiaries associated with the processing time between the benefit distribution event and the actual payment, transfer, or rollover of the benefit; and

BE IT FURTHER RESOLVED, that as a part of this action, the previous resolutions in Minute Entries 311-22, 339-21, 344-25, and 365-19 establishing interest accruals and guidelines on lump sums are hereby rescinded.

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468-23 (A-6445). The Election Committee report consisted of the item reported below at

A-6446.

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468-24 (A-6446). Upon the recommendation of the Election Committee, the Board

approved the 2017 TVARS Election Schedule. As a part of this approval, the Board confirmed

with the System staff that the election services provider, Election America, will provide System

members with both electronic and paper election ballots. A copy of the Election Schedule is filed

as Exhibit 468-24.

468-25 (A-6447). The Audit Committee report consisted of the items reported below at

A-6448 and A-6449, and of the following items:

- The Board was provided and took note of the System Board's travel expenses for the previous quarter.
- The Board was provided and took note of a summary of charges on the System's credit card for the previous quarter.
- Prior to the meeting, pursuant to the System's Succession Planning Policy, the Board received an annual update from the Executive Secretary on System staff personnel and succession planning and had a discussion regarding the Executive Secretary position with regard to the Succession Planning Policy. A copy of a memo from the Executive Secretary to the Board regarding succession planning and development and a position description for the Executive Secretary is filed as Exhibit 468-25.

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468-26 (A-6448). Upon the recommendation of the Audit Committee, the Board voted to approve, and authorized the Executive Secretary to execute, an engagement letter with Crowe Horwath to perform the fiscal year 2017 financial statement audits of the System and the 401(k) Plan. A copy of the engagement letter between Crowe Horwath and the System is filed as Exhibit 468-26.

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468-27 (A-6449). The Board discussed with the Executive Secretary and Senior Counsel proposed amended and restated TVARS Bylaws and draft Committee Charters, which were developed and revised over the last year with the Board's governance consultant, Jeanna Cullins, Partner, AHIC. After further discussion among the Board members, the Board voted 5 to 2 to adopt the amended and restated TVARS Bylaws and Charters for the Investment, Retirement, Audit and Election Committees. Directors Child, Stokes, Taylor, Troyani and Wilson voted in favor of adoption, and Directors Muzyn and Hovious voted against adoption. A copy of the new

TVARS Bylaws and Committee Charters will be posted on the TVARS website.

Director statements submitted regarding the vote

Statement of Director Muzyn:

I voted against these by-laws because they contain a provision which allows members of this board who were duly elected by TVA employees to be removed without employees' consent. Previously unthinkable, this is now possible because of last year's package of rule changes approved at TVA's request. These new by-laws give five board members absolute power to remove one or both of the other two board members. Five members can become judge, jury and executioner rolled into one. This makes a mockery of the idea of having representatives on this board who truly represent employee interests because this power can only be used against board members who disagree with TVA and its three appointed board members. Only in an Orwellian world can one believe this provision is equitable to both TVA executives and TVA employees. TVA can remove its three appointed board members at will. TVA employees have no such power over their elected members if one or more should join with TVA to remove an elected member employees wish to retain. This provision is unheard of in any other independent retirement system. It is a red flag identifying a board which tolerates extremely poor governance practices.

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468-28. Director Muzyn made a motion to approve amendments to the minimum funding rules in Section 9B of the System Rules and Regulations to calculate the "accrued liability" using a 20-year closed amortization period to replace the current 30-year open rolling amortization period consistent with the recommendation of the March 2017 GAO report on TVA's debt reduction plan and unfunded pension liabilities, which was previously discussed by the Board as a part of the Retirement Committee (see Minute Entry 468-15). The motion received a second from Director Hovious.

After discussion by the Board members on the motion, Director Child made a motion to table the Board's vote on the proposed amendments to the System Rules and Regulations to

allow for further discussion and analysis of the GAO report and given Mercer's current work

analyzing the long-term funding policy of the System. The motion received a second from

Director Wilson. After further discussion, the motion to table passed by a roll call vote of 4 to 3.

Directors Child, Stokes, Taylor and Wilson voted for the motion to table, and Directors Muzyn,

Hovious and Troyani voted against the motion to table.

Director statements submitted regarding the vote

Statement of Director Muzyn:

I voted against this motion because it blocked a vote to amend TVARS' rules to meet the funding recommendations in the March 2017 GAO Report to Congress. This parliamentary procedure was able to block the vote because I could not obtain the support of a third board member to place it on the meeting agenda as a voting item.

Had the amendments to the rules been approved, TVARS' funding shortfall would be eliminated in 20 years. Per the GAO's report, 15 to 20 years is the maximum period recommended by a Blue Ribbon Panel commissioned by the Society of Actuaries. The GAO report indicates that TVA officials have stated a goal to fully fund the pension within 20 years, but that TVA has not identified such a goal or milestones in its performance plan or report. In contrast to TVA's stated goal, TVA officials told the GAO that TVA does not plan to contribute more than the TVARS Rules require. Without this amendment, today's pension obligations would essentially be passed down to future generations of ratepayers. Current TVARS Rules require the use of a rolling 30year period. This is analogous to refinancing your house with a new 30 year mortgage every year so that you never have to pay off the loan.

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The meeting was adjourned at 2:22 p.m., EDT.

Mith Zixtt

Executive Secretary

Ille Stokes

Chair