

Meeting No. 469

MINUTES OF MEETING
OF THE BOARD OF DIRECTORS
RETIREMENT SYSTEM OF THE TENNESSEE VALLEY AUTHORITY

September 7, 2017

The regular quarterly meeting of the Board of Directors (Board) of the TVA Retirement System (System) was held on Thursday, September 7, 2017, at 12:28 p.m., EDT, at the TVA Chattanooga Office Complex, MRC 1S 419, Chattanooga, Tennessee.

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The following directors were present: Allen E. Stokes, Chair (via telephone); 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; and W. Colby Carter, Senior Counsel.

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469-1 Each director was notified in a memorandum dated September 1, 2017, of the regular quarterly meeting to be held on September 7, 2017. A copy of the notice from the Executive Secretary is filed as Exhibit 469-1.

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469-2 (A-6450). The report from the Vice Chair included the following:

- On behalf of the Board, the Vice Chair thanked TVA and the TVA Board for the approval of a \$500 million discretionary contribution to be made to the System by the end of September.

- The Vice Chair congratulated Sam DeLay on his election to the Board. With the election of Mr. Delay, the Vice Chair noted his term on the Board will end October 31 and thanked the Board and members of the System for his support in serving on the Board for three terms over the last nine years.

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469-3 (A-6451). The Executive Secretary's report included the following:

- The Executive Secretary provided to the Board the proposed budget for the System for fiscal year 2018.
- The Executive Secretary provided the Board a copy of an acknowledgment letter he will be sending to TVA about the \$500 million discretionary contribution to the System.
- The Executive Secretary informed the Board that on September 29 it will teleconference with Jeanna Cullins of Aon Hewitt, the Board's fiduciary and governance consultant. During this meeting, the Board will perform the Board Self Evaluation and Executive Secretary Evaluation in conformance with the Board's governance policies.

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469-4 (A-6452). Senior Counsel informed the Board that all briefs have been filed by all sides with the Sixth Circuit Court of Appeals on the remaining issues in the lawsuit against TVA and the System and provided the Board with a timeline update.

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469-5 (A-6453). The Board approved the minutes of Meeting No. 468 held June 15, 2017.

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469-6 (A-6454). The Board accepted the Treasurer's Report for the quarter ended June 30, 2017. A copy of the Treasurer's Report is filed as Exhibit 469-6.

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469-7 (A-6455). The Board accepted the Investment Performance Report prepared by Wilshire Associates Incorporated (Wilshire) for the quarter ended June 30, 2017. A copy of the Investment Performance Report is filed as Exhibit 469-7.

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469-8 (A-6456). The Board accepted the report of retirements approved for the quarter ended June 30, 2017. A copy of the report is filed as Exhibit 469-8.

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469-9 (A-6457). 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 June 30, 2017. A copy of the 401(k) Plan quarterly review is filed as Exhibit 469-9.

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469-10 (A-6458). The Investment Committee report consisted of the items reported below at A-6459, A-6460, A-6461, A-6462, A-6463 and A-6464, 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 June 30, 2017, is filed as Exhibit 469-10(a).
- The Board was provided and took note of information regarding investment manager asset transfers during the second quarter of 2017. A copy of this information is filed as Exhibit 469-10(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 May 2017 through August 2017. A copy of the information is filed as Exhibit 469-10(c).
- The Board was provided an update on the funded status of the System through June 30, 2017. A copy of the report is filed as Exhibit 469-10(d).
- The Board reviewed and discussed the quarterly 401(k) Plan Discussion Guide from Aon Hewitt Investment Consulting (AHIC) covering the following: market

information, performance of the investment funds in the 401(k) Plan's lineup, manager updates, fee analysis, and managed account update. A copy of the AHIC 401(k) Plan Discussion Guide is filed as Exhibit 469-10(e).

- The Board was provided and discussed with Wilshire and System investment staff information on several investment managers and their portfolios and strategies. A copy of this Investment Manager Product Discussion List is filed as Exhibit 469-10(f).
- The Board was provided a copy of an investment management report released by the Government Accountability Office (GAO) dated September 2017 and entitled "Key Practices Could Provide More Options for Federal Entities and Opportunities for Minority and Women-Owned Asset Managers." This report examined how certain federal entities with institutional assets, including the System, select and utilize asset managers, including minority and women-owned firms, and includes a response letter from the System regarding certain best practice recommendations. A copy of the GAO report and the System's letter to the GAO is filed as Exhibit 469-10(g).
- The Board was provided a semi-annual report from Wilshire on the performance of the System's private markets portfolio (private equity, private real estate, and private real assets), which included net internal rate of return (net IRR) performance information for all of the funds in the portfolio compared to both vintage year IRRs for each fund and public market equivalent annualized performance. A copy of Wilshire's report dated March 31, 2017, is filed as Exhibit 469-10(h).
- The Board was provided and discussed with Wilshire a report on the System's U.S. equity portfolio structure and the evaluation of the inclusion of "smart beta" or "multi-factor" strategies within this portfolio. A copy of this Wilshire report is filed as Exhibit 469-10(i).
- The Board was provided and discussed with Wilshire a short-term drawdown risk analysis considering current and potential investment strategies. A copy of this Wilshire analysis is filed as Exhibit 469-10(j).

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469-11 (A-6459). On August 31, 2017, the Investment Committee met with the System investment staff to review the System's Request for Proposal for defined benefit plan investment consulting services. After discussion of the Investment Committee's evaluation of the RFP, upon the recommendation of the Committee, Executive Secretary, and System investment staff, the Board approved retaining Wilshire as the System's investment consultant and authorized the

Executive Secretary to enter into a five-year contract with Wilshire. A copy of the investment consultant RFP evaluation and recommendation is filed as Exhibit 469-11.

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469-12 (A-6460). On August 31, 2017, the Investment Committee discussed with HarbourVest Partners the overall strategic plan, and received an update on the 2017 and 2018 tactical plans, for the System's private equity investments through the HarbourVest Summit Hill Fund. After discussion and review of HarbourVest's strategic and tactical plans, and upon the recommendation of the Investment Committee, the Board approved a commitment of \$300 million for the 2018 tranche investment in the HarbourVest Summit Hill Fund and authorized the Executive Secretary to take any actions necessary to implement this action. A copy of the HarbourVest presentation dated August 2017 is filed as Exhibit 469-12.

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469-13 (A-6461). On August 31, 2017, the Investment Committee discussed with System investment staff a term extension request for the Wilshire Private Markets Fund IV in which the System is a limited partner investor. After discussion, and upon the recommendation of the Investment Committee, the Board approved the one-year extension through July 31, 2018, of the term of the Fund. A copy of the term extension request from the Fund's general partner, along with details related to the distributions from investments during the extension, is filed as Exhibit 469-13.

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469-14 (A-6462). On August 31, 2017, the Investment Committee met with Wilshire to discuss the work on a revised asset allocation policy in order to optimize the investment portfolio's risk/return expectations based on Wilshire's new 10-year capital market assumptions

and factoring in Wilshire's drawdown risk analysis for the System and the implementation of new investments in private credit and long-duration Treasuries. Following discussion, the Board took no action and requested further modeling of alternate scenarios. A copy of Wilshire's asset allocation and downside risk analysis for the System is filed as Exhibit 469-14.

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469-15 (A-6463). On August 31, 2017, the Investment Committee discussed with Wilshire and System investment staff the benefits of transition management services when making manager changes and reviewed Wilshire's highest rated transition managers. After discussion, and upon the recommendation of the Investment Committee, the Board approved the selection of BlackRock Transition Management and Russell Investments Implementation Services as transition management service providers and authorized the Executive Secretary to enter into contracts with both firms on an as-needed service requested basis. A copy of the Wilshire memo with its transition manager recommendations for the System is filed as Exhibit 469-15.

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469-16 (A-6464). On August 31, 2017, the Investment Committee discussed with Wilshire and System investment staff an investment implementation plan for TVA's \$500 million discretionary contribution to the System to be received before the end of September 2017. After discussion, and upon the recommendation of Wilshire and the Investment Committee, the Board approved the proposed implementation plan that will invest the TVA contribution into the System's asset allocation policy over the next 12 months and authorized the Executive Secretary to execute this plan. A copy of the implementation plan for the \$500 million cash contribution is filed as Exhibit 469-16.

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469-17 (A-6465). The Retirement Committee report consisted of items reported below at A-6466, A-6467, A-6468, and A-6469, and of the following items:

- At its June 15, 2017, quarterly meeting, the Board reviewed with Mercer the results of a long-term funding policy study for the System, which also included various funding alternatives and modeled potential outcomes (see Minute Entry 468-15). Following this review, the Board requested several additional scenarios to be modeled by Mercer. The Board was provided a final long-term funding policy study from Mercer that included all requested funding alternatives and outcome scenarios, which the Board discussed with Mercer and System staff. A copy of Mercer's funding policy study alternative scenarios report dated July 7, 2017, is filed as Exhibit 469-17(a).
- The System staff provided the Board an update on the personal retirement readiness statements developed with Fidelity for System members with cash balance and 401(k) Plan benefits along with the planned mailing date for the statements in September. A copy of a final sample retirement readiness statement is filed as Exhibit 469-17(b).
- Senior Counsel provided the Board with the latest information on in-plan 401(k) Roth rollovers. Following a discussion, the Board asked the Executive Secretary and Senior Counsel to proceed with evaluating adding this election option for participants in the 401(k) Plan. A copy of information on 401(k) in-plan Roth rollovers is filed as Exhibit 469-17(c).

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469-18 (A-6466). Upon the recommendation of the Retirement Committee, the Board approved Mercer's Statement of Work to provide actuarial services to the System for fiscal year 2018, and delegated to the Executive Secretary the authority to take any actions necessary to effect that approval. A copy of Mercer's Statement of Work is filed as Exhibit 469-18.

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469-19 (A-6467). Prior to the meeting, the Board discussed the System's actuarial valuation assumptions with Mercer, the System's actuary. After a discussion, upon the recommendation of the Retirement Committee and Mercer, the Board voted to approve the actuarial assumptions to be used in the valuation of the System's liability and benefit calculations

as of September 30, 2017. The actuarial assumptions approved by the Board include the following: (a) a 6.75% assumed rate of return on investments of the System's assets consistent with the previous year; (b) an assumed rate of inflation of 2.25% consistent with the previous year; (c) increase in cash balance benefit cash out elections from 15% to 25% based on actual participant experience; and (d) for liability valuation and minimum contribution requirements, continued use of the following mortality tables: (i) for the base table, the RP-2014 table with a 5% load based on actual plan experience, and (ii) for the mortality improvement scale, the MSS-2016 scale developed by Mercer based on Social Security data and Mercer research. A copy of Mercer's actuarial assumptions review presentation dated September 7, 2017, is filed as Exhibit 469-19.

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469-20 (A-6468). 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. After discussion, the Board approved submitting a Private Letter Ruling request with the IRS on these amendments and election options and authorized the Senior Counsel to work with Groom Law Group to make the submission. A copy of the proposed amendments is filed as Exhibit 469-20.

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469-21 (A-6469). At the June 15, 2017, quarterly meeting, a motion was tabled by the Board regarding proposed 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 (see Minute Entry 468-28). This item was placed on the Retirement Committee for further discussion.

After discussion, Director Muzyn made a motion to approve these amendments to the minimum funding rules in Section 9B of the System Rules and Regulations as presented to the Board. The motion received a second from Director Hovious. After further discussion, the motion to amend Section 9B failed by a roll call vote of 5 to 2. Directors Hovious and Muzyn voted for the motion, and Directors Child, Stokes, Taylor, Troyani and Wilson voted against the motion.

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469-22 (A-6470). The Election Committee report consisted of the item reported below at A-6471.

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469-23 (A-6471). The Election Committee presented, and the Board accepted, the results of the election that ended September 6, 2017. Sam DeLay received 50.85% of the votes to win election to the System Board for a three-year term from November 1, 2017, through October 31, 2020. Overall voter participation was 32% with 93% of the votes cast via the Internet. A copy of the certified election results from Election America is filed as Exhibit 469-23.

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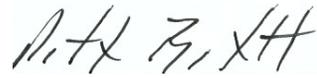
469-24 (A-6472). The Audit Committee report consisted of the following items:

- 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.

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The meeting was adjourned at 12:52 p.m., EDT.



Executive Secretary



Chair