

Meeting No. 459

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

December 10, 2015

[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, December 10, 2015, at 5:00 p.m., EST, in the TVA Knoxville Office Complex, WT 2-180, Knoxville, Tennessee.

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The following directors were present: Allen E. Stokes, Chair; Anthony L. Troyani, Vice-Chair; Brian M. Child; John M. Hoskins; James W. Hovious; Leonard J. Muzyn; and Tammy W. Wilson. Also present were Patrick D. Brackett, Executive Secretary; Pamela K. Ramsey, Assistant Secretary; W. Colby Carter, Senior Counsel, Retirement Benefits & Compliance; Veenita Bisaria, Manager, Investment & Risk Management; Chris A. Stinnett, Sr. Analyst, Investment & Risk Management; and Sally R. Weber, Lead Sr. Consultant, Retirement Benefits.

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459-1 Each director was notified in a memorandum dated November 10, 2015, of the regular quarterly meeting to be held on December 10, 2015. A copy of the notice from the Executive Secretary is filed as Exhibit 459-1.

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459-2 (A-6280). There were no items to report from the Chair.

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459-3 (A-6281). The Executive Secretary's report included the following:

- The Executive Secretary provided information to the Board on the System staff's goals and objectives for fiscal year 2016. A copy of this information is filed as Exhibit 459-3.

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459-4 (A-6282). The Legal Counsel's update included the following:

- Legal Counsel informed the Board about a response to a subpoena involving litigation between a TVARS manager, W.R. Huff, and a former company within a previously-terminated and liquidated high-yield bond portfolio that was managed by W.R. Huff. This litigation does not involve the System and is unrelated to any of the System's current investments. A copy of this subpoena response submitted by TVARS is filed as Exhibit 459-4.

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459-5 (A-6283). The Board approved the minutes of Meeting No. 458 held September 18, 2015.

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459-6 (A-6284). The Board accepted the Treasurer's Report for the quarter ending September 30, 2015. A copy of the Treasurer's Report is filed as Exhibit 459-6.

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459-7 (A-6285). The Board accepted the Investment Performance Report prepared by Wilshire Associates (Wilshire) for the quarter ending September 30, 2015. A copy of the Investment Performance Report is filed as Exhibit 459-7.

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459-8 (A-6286). The Board accepted the report of retirements approved for the quarter ending September 30, 2015. A copy of the report and summary demographic information regarding retirements in the quarter is filed as Exhibit 459-8.

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459-9 (A-6287). 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 ending September 30, 2015. A copy of the 401(k) Plan quarterly review is filed as Exhibit 459-9.

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459-10 (A-6288). The Investment Committee report consisted of the items reported below at A-6289, A-6290, A-6291, A-6292 and A-6293, 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 September 30, 2015, is filed as Exhibit 459-10(a).
- The Board was provided and took note of information regarding investment manager asset transfers during the fourth quarter of fiscal year 2015. A copy of this information is filed as Exhibit 459-10(b).
- The Board was provided and took note of information on due diligence meetings and conference calls between System staff and investment managers during the first quarter of fiscal year 2016. A copy of the information is filed as Exhibit 459-10(c).
- The Board was provided an update on the funded status of the System as of September 30, 2015. A copy of the report is filed as Exhibit 459-10(d).
- The Board was provided and took note of the quarterly 401(k) Plan Discussion Guide from Aon Hewitt Investment Consulting (AHIC) covering the following: performance of the investment funds in the 401(k) Plan's current lineup, performance of the investment funds selected for the 401(k) Plan's new lineup, a review and discussion of Loomis Sayles Core Plus Bond strategy, and the final results of the fee benchmarking analysis and negotiations. A copy of the AHIC 401(k) Plan Discussion Guide is filed as Exhibit 459-10(e).
- The Board was provided an update on Wilshire's 10-year forward-looking capital market assumptions. A copy of this information from Wilshire dated December 10, 2015, is filed as Exhibit 459-10(f).
- The Board was provided an update on the current investments and liquidation status of the W.R. Huff Alternative Fund in which the System is a limited partner. A copy

of this information from a teleconference with W.R. Huff dated October 9, 2015, is filed as Exhibit 459-10(g).

- The Board was provided and discussed proposed revisions to the 401(k) Plan Investment Policy Statement (IPS) developed by the System staff with AHIC. A copy of the 401(k) Plan IPS with the proposed revisions is filed as Exhibit 459-10(h).
- The Board was provided information on BNY Mellon's current securities lending program and proposal for TVARS, which the Board discussed with System staff. A copy of BNY Mellon's securities lending presentation dated December 10, 2015, is filed as Exhibit 459-10(i).
- The Board was provided and discussed a report from Wilshire analyzing downside liquidity risk scenarios. A copy of Wilshire's report, dated December 10, 2015, is filed as Exhibit 459-10(j).
- The Board was provided a timeline and related information for a proposed Request for Proposal for TVARS's master trustee and custodian during 2016. A copy of the Trustee/Custodian Search Timeline is filed as Exhibit 459-10(k).

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459-11 (A-6289). After discussion, and upon the recommendation of the Investment Committee, the Board approved housekeeping revisions to the TVARS Investment Policy Statement, including the removal of tail-risk hedging language. A copy of the TVARS Investment Policy Statement, with amendments dated December 10, 2015, is filed as Exhibit 459-11.

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459-12 (A-6290). Prior to the meeting, the Board met with HarbourVest Partners, which presented an overall strategic plan and a 3-year tactical plan for the System's private equity investments through the HarbourVest Summit Hill Fund. After discussion and review of HarbourVest's strategic and tactical plans, as well as Wilshire's updated private equity investment pacing analysis, and upon the recommendation of Wilshire and the Investment Committee, the Board approved a commitment of \$300 million for the 2016 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 December 2015, and the Wilshire updated packing analysis dated November 19, 2015, is filed as Exhibit 459-12.

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459-13 (A-6291). Upon the recommendation of the Investment Committee, the Board voted to approve, and authorized the Executive Secretary to execute, a contract with Wilshire for investment consulting services for the period January 1, 2016, through December 31, 2016. A copy of the contract is filed as Exhibit 459-13.

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459-14 (A-6292). The Investment Committee notified the Board that a majority of the limited partners of the Huff Alternative Fund, L.P., in which TVARS is a limited partner, approved an amendment to the Fund's Limited Partnership Agreement extending the limited partnership termination date by an additional year through October 15, 2016, in order to facilitate an efficient and orderly liquidation of the partnership's remaining investments and holdings.

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459-15 (A-6293). After discussion, and upon the recommendation of the Investment Committee, the Board approved the selection of Vince Sands as a non-voting member of and adviser to the Board's investment, retirement and audit committees, and authorized the Executive Secretary to execute an advisory services contract with Mr. Sands. A copy of Vince Sands' bio and the letter agreement for advisory services with Vince Sands is filed as Exhibit 459-15.

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459-16 (A-6294). The Retirement Committee report consisted of items reported below at A-6295, A-6296, A-6297, A-6298, A-6299, A-6300, A-6301 and A-6302, and of the following items:

- The Board was provided and took note of the quarterly report on System communications at TVARA meetings. A copy of the Quarterly Communication Update is filed as Exhibit 459-16(a).
- The Board was provided the final results of the 401(k) Plan live fee benchmarking analysis performed by AHIC. A copy of AHIC's 401(k) Plan fee benchmarking analysis and results, dated October 14, 2015, is filed as Exhibit 459-16(b).
- The Board was provided a communication plan from Fidelity and the System staff for the rollout of the 401(k) Plan's new investment lineup. A copy of this communication plan and timeline is filed as Exhibit 459-16(c).
- Legal Counsel provided for the Retirement Committee and Board a litigation review of main issues and takeaways for fiduciaries from significant 401(k) plan-related cases during 2015. A copy of articles and summaries from the cases reviewed is filed as Exhibit 459-16(d).

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459-17 (A-6295). The Board discussed and approved a tentative schedule and locations for the Board meetings to be held in calendar year 2016. This tentative schedule is filed as Exhibit 459-17.

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459-18 (A-6296). The Chair presented recommendations for the Board's standing and special committee members. After discussion of the recommendations, the Board approved the following standing and special committee assignments, as recommended by the Chair:

Audit Committee

John M. Hoskins, Chair
James W. Hovious
Tammy W. Wilson

Retirement Committee

Leonard J. Muzyn, Chair
Brian M. Child
John M. Hoskins

Investment Committee

Tammy W. Wilson, Chair
Anthony L. Troyani, Vice Chair
Brian M. Child
John M. Hoskins
James W. Hovious
Leonard J. Muzyn
Allen E. Stokes
Michael Brakebill (non-voting)

Election Committee

Anthony L. Troyani, Chair
Allen E. Stokes
Brian M. Child

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459-19 (A-6297). According to sections 6I, 7L and 18C3 of the System Rules, the monthly pension and supplemental benefits payable to eligible retirees and beneficiaries receive a cost-of-living adjustment (COLA) whenever the 12-month average of the Consumer Price Index – All Urban Consumers (CPI-U) exceeds by as much as 1% the CPI-U average for the prior year for which an adjustment was made. Because the average CPI-U increased by 0.19%, which is less than 1%, no COLA will be made for 2016. A COLA will be made when the cumulative percentage increase in the average CPI-U since the last adjustment exceeds 1% and will reflect the full increase since the time of the last adjustment. A copy of the calculation of the percentage change in the average yearly CPI-U is filed as Exhibit 459-19.

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459-20 (A-6298). The Board approved the calculation of a 6% annual interest rate credit to participants' accounts in the Cash Balance Benefit Structure for calendar year 2016 in accordance with the System Rules. Under section 7C3 of the System Rules, this interest rate credit is calculated as the greater of (i) the percentage change in the CPI-U plus 3 percent (not to exceed 10 percent unless approved by the System Board and TVA) or (ii) 6 percent. The CPI-U

increase of 0.19% plus 3% equaled 3.19%. A copy of the Cash Balance annual interest rate calculation is filed as Exhibit 459-20.

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459-21 (A-6299). As a result of the Board's previous action adopting new mortality tables for System liability valuation and minimum contribution requirements (see Minute Entry 458-18), upon the recommendation of the Retirement Committee, the Board approved the following amendments to the Actuarial Assumptions in the Appendix to the Rules and Regulations of the System (System Rules):

BE IT RESOLVED, that Section 1 of the Actuarial Assumptions in the Appendix to the Rules and Regulations of the TVA Retirement System is amended to delete the language marked through and to add the language underlined as follows:

APPENDIX TO THE RULES AND REGULATIONS OF THE
TVA RETIREMENT SYSTEM

Actuarial Assumptions

Certain benefit payments are calculated on the basis of actuarial assumptions, mortality tables, and interest rates. The following have been adopted by the board. The board may change these assumptions, tables, and rates from time to time.

1. a. The mortality tables for service retirements are based on the 1971 Group Annuity Mortality Table rated back one year (hereinafter referred to as service mortality tables) and the mortality tables for disability retirements are based on the Society of Actuaries Disability Exposure Table Ultimate 1985 rated back six years (hereinafter referred to as disability mortality tables).
- b. Effective for service retirements on or after January 1, 2003, the mortality table used shall be the 1983 Group Annuity Mortality Table (references to service mortality tables for service retirements on or after that date shall be deemed as references to this table). Effective for disability retirements on or after January 1, 2003, the mortality table used shall be the 1983 Group Annuity Mortality Table, set forward eight years (references to disability mortality tables for disability retirements on or after that date shall be deemed as references to this table).
- c. Effective for service retirements on or after April 1, 2009, the mortality table used shall be the Combined Healthy RP-2000 Mortality Table without a collar adjustment (references to service mortality tables for service retirements on or after that date shall be

deemed as references to this table). Effective for disability retirements on or after April 1, 2009, the mortality table used shall be the Combined Healthy RP-2000 Mortality Table without a collar adjustment, with a set forward that is ten years before age 70, grades down to six years from age 70 to age 73, is six years from age 73 to age 79, grades down to zero years from age 80 to age 85, and is zero above age 85 (references to disability mortality tables for disability retirements on or after that date shall be deemed as references to this table).

d. Effective for service retirements on or after February 1, 2014, the mortality table used shall be the Combined Healthy RP-2000 Mortality Table without a collar adjustment, projected with Scale AA to 2022 (references to service mortality tables for service retirements on or after that date shall be deemed as references to this table). Effective for disability retirements on or after February 1, 2014, the mortality table used shall be the Combined Healthy RP-2000 Mortality Table without a collar adjustment, projected with Scale AA to 2022, with a set forward that is 20 years until age 55, decreasing from 20 years to 10 years from age 55 to 65, remaining 10 years from age 65 to age 75, decreasing from 10 years to zero between ages 75 and 85 and staying zero after age 85 (references to disability mortality tables for disability retirements on or after that date shall be deemed as references to this table).

e. Such service mortality tables and disability mortality tables, as heretofore defined, are used as the bases for determining various benefit computation factors.

f. Effective September 30, 2015, for purposes of the System's actuarial valuations as set forth under the Rules and Regulations, the following service mortality and disability mortality tables will be used. For service mortality, the mortality table shall be the base healthy mortality table RP-2014 from the Society of Actuaries' 2014 mortality study multiplied by a load factor of 105% for both males and females, with mortality improvement projection after 2007 removed and replaced with Mercer Human Resource Consulting's mortality improvement scale MSS-2007 which reflects generational mortality improvement based on the Social Security Administration's projected mortality experience. For disability mortality, the mortality table shall be the base disabled mortality table RP-2014 from the Society of Actuaries' 2014 mortality study multiplied by a load factor of 120% for males and 95% for females, with mortality improvement projection after 2007 removed and replaced with Mercer's mortality improvement scale MSS-2007 which reflects generational mortality improvement based on the Social Security Administration's projected mortality experience.

g. ~~The above notwithstanding. Provided, however, that~~ for the purposes of applying the limits on benefits set forth in section 415(b) of the Internal Revenue Code, the mortality table used shall be the table prescribed by the Secretary of the Treasury in Revenue Ruling 95-6, as it may be amended or superseded. Provided, further, that effective as to distributions with annuity starting dates on or after December 31, 2002, notwithstanding any other plan provisions to the contrary, the applicable mortality table used for the purposes of adjusting any benefit or limitation under section 415(b)(2)(B), (C), or (D) of the Internal Revenue Code as set forth in section 17 of the Rules and Regulations is the

table prescribed in Rev. Rule 2001-62. Provided, further, that effective as to distributions with annuity starting dates in plan years that begin on or after January 1, 2008, notwithstanding any other plan provisions to the contrary, the mortality table used for the purposes of adjusting any benefit or limitation under section 415(b)(2)(B), (C), or (D) of the Internal Revenue Code as set forth in May 2005 RETIREMENT Rules Page 91 section 17 of the Rules and Regulations is the applicable mortality table under section 417(e) of the Internal Revenue Code as prescribed and published by Internal Revenue Service guidance or regulations applicable to section 417(e).

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459-22 (A-6300). The Board was informed that there will be an amendment to the Trust Agreement between TVARS and Fidelity Management Trust Company for the document requirements related to the implementation of the 401(k) Plan's new investment lineup and fee structure. This amendment to the 401(k) Plan Trust Agreement will be presented to the Board at a later date for notational approval.

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459-23 (A-6301). The Board was informed that there will be an amendment to the Recordkeeping Agreement between TVARS and Fidelity Investments, or a recordkeeper direction letter from TVARS to Fidelity Investments, for the document requirements related to the implementation of the 401(k) Plan's new investment lineup and fee structure. Any amendment to the 401(k) Plan Recordkeeping Agreement will be presented to the Board at a later date for notational approval.

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459-24 (A-6302). Pursuant to the System's Administrative Claims and Appeals Procedures, the Board considered an appeal from a current TVA employee, [redacted], requesting that the Board allow him to purchase System credit for his previous military service. After review and discussion of the appeal, because [redacted]'s military service does not meet

the requirements for eligible military service that is creditable under the System Rules, the Board voted to deny the appeal request. A copy of the appeal materials is filed as Exhibit 459-24.

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459-25 (A-6303). The Election Committee had no items to report.

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459-26 (A-6304). The Audit Committee report consisted of the items reported below at A-6305, A-6306, A-6307 and A-6308, 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.
- At the request of the Audit Committee, the Board was provided information on the controls in place in the administration of the 401(k) Plan. A copy of the 401(k) Plan controls report is filed as Exhibit 459-26(a).
- Pursuant to the TVARS Ethics and Code of Conduct Policy, the Board and staff (i) were provided a copy of a synopsis of the Office of Government Ethics (OGE) Standards of Ethical Copy and the TVARS Ethics and Code of Conduct Policy, and (ii) signed an acknowledgment that each of them had read and will abide by the OGE Standards of Ethical Conduct and the TVARS Ethics and Code of Conduct Policy. A copy of these materials and the signed acknowledgment is filed as Exhibit 459-26(b).

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459-27 (A-6305). Prior to the meeting, the Board discussed with the Board's fiduciary and governance consultant, Jeanna Cullins, Partner at AHIC, a proposed restatement of System Bylaws. No action was taken.

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459-28 (A-6306). Prior to the meeting, the Board discussed with the Board's fiduciary and governance consultant, Jeanna Cullins, Partner at AHIC, proposed charters for the Board's standing and special committees. No action was taken.

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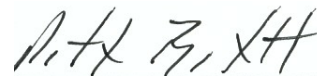
459-29 (A-6307). On December 3, 2015, the Audit Committee met with Crowe Horwath to review and discuss the results of the Service Organization Control (SOC1) Report for the System for the period August 1, 2014, to July 31, 2015, prepared by Crowe Horwath. The Audit Committee shared the information from this meeting with the Board. After discussion, and upon the recommendation of the Audit Committee, the Board accepted SOC1 Report for the System for the period August 1, 2014, to July 31, 2015, prepared by Crowe Horwath. A copy of the SOC1 Report is filed as Exhibit 452-24.

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459-30 (A-6308). 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 System's SOC1 audit for the period August 1, 2015, to July 31, 2016. A copy of the engagement letter with Crowe Horwath is filed as Exhibit 459-30.

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The meeting was adjourned at 5:15 p.m., EST.



Executive Secretary



Chair