



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

CNL-17-021

March 30, 2017

10 CFR 50.75(f)(1)

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Browns Ferry Nuclear Plant, Units 1, 2, and 3
Renewed Facility Operating License Nos. DPR-33, DPR-52, and DPR-68
NRC Docket Nos. 50-259, 50-260, and 50-296

Sequoyah Nuclear Plant, Units 1 and 2
Renewed Facility Operating License Nos. DPR-77 and DPR-79
NRC Docket Nos. 50-327 and 50-328

Watts Bar Nuclear Plant, Units 1 and 2
Facility Operating License Nos. NPF-90 and NPF-96
NRC Docket Nos. 50-390 and 50-391

Subject: **Decommissioning Funding Status Report**

- References:
1. TVA letter to NRC, CNL-15-017, "Decommissioning Funding Update," dated March 31, 2015 (ML15098A176)
 2. NRC letter to TVA, "Issuance of Renewed Facility Operating Licenses Numbers DPR-77 and DPR-79 for Sequoyah Nuclear Plant, Units 1 and 2," dated September 25, 2015 (ML15097A454)
 3. NRC letter to TVA, "Issuance of Facility Operating License No. NPF-96, Watts Bar Nuclear Plant Unit 2," dated October 22, 2015 (ML15251A587)
 4. TVA letter to NRC, CNL-16-021, "Sequoyah Nuclear Plant (SQN) Units 1 and 2 - Nuclear Decommissioning Trust Fund Balance - Request for Exemption," dated March 10, 2016 (ML16071A237)
 5. TVA letter to NRC, CNL-15-189, "Decommissioning Funding Update," dated September 10, 2015 (ML15253A867)
 6. TVA letter to NRC, CNL-16-106, "Sequoyah Nuclear Plant (SQN) Units 1 and 2 - Nuclear Decommissioning Trust Fund Balance - Revised Request for Exemption," dated June 24, 2016 (ML16179A346)
 7. NRC letter to TVA, "Sequoyah Nuclear Plant Units 1 and 2, Exemption from the Requirements of 10 CFR 50.75(h)(2) and 10 CFR 50.82(a)(8) (CAC NOs. MF7562 AND MF7563)," dated September 9, 2016 (ML16208A569)

In accordance with the requirements of 10 CFR 50.75(f)(1), Tennessee Valley Authority (TVA) is reporting on the status of decommissioning funding for Browns Ferry Nuclear Plant (BFN), Units 1, 2, and 3; Sequoyah Nuclear Plant (SQN), Units 1 and 2; and Watts Bar Nuclear Plant (WBN), Units 1 and 2. The reporting requirements and corresponding TVA information follow.

1. *The amount of decommissioning funds estimated to be required pursuant to 10 CFR 50.75(b) and (c):*

Decommissioning cost estimates were calculated using the formulas provided in NUREG-1307, Revision 16, "Report on Waste Burial Charges," utilizing the waste burial adjustment factors for Generators Located in the Unaffiliated States and those Located in Compact-Affiliated States having no Disposal Facility. Bureau of Labor Statistics indices for the end of the 2016 calendar year were taken from the sources referenced by NUREG-1307. The calculated estimates for the end of calendar year (CY) 2016 are provided in Table 1. The dollar amounts shown in Table 1 have been rounded to the nearest hundred thousand dollars.

Table 1. Decommissioning Cost Estimates for end of CY 2016

Plant	Number of Units	Cost per Unit (\$, in millions)	Total Plant Cost (\$, in millions)
BFN	3	642.1	1,926.3
SQN	2	484.2	968.3
WBN	2	484.2	968.3

2. *The amount accumulated in the TVA decommissioning fund at the end of the calendar year 2016 for the items included in 10 CFR 50.75(b) and (c):*

In Reference 1, TVA submitted the latest Decommissioning Funding Status Report, which provided the status of decommissioning funding for BFN, Units 1, 2, and 3; SQN, Units 1 and 2; and WBN, Unit 1. Subsequent to the submittal of Reference 1, two events occurred that necessitated the reallocation of funds to proportionally balance TVA's nuclear decommissioning trust (NDT) funds. On September 25, 2015, TVA received renewed operating licenses for SQN, Units 1 and 2 (Reference 2), and on October 22, 2015, TVA received the operating license for WBN, Unit 2 (Reference 3). The operating license renewals at SQN, Units 1 and 2, resulted in an immediate overfunding of their respective NDT funds due to the 20 additional reactor years per unit for additional fund earnings. Conversely, as provided in Reference 5, the establishment of a new NDT fund for WBN Unit 2 required annual contributions. On March 10, 2016 (Reference 4), and supplemented by letter dated June 24, 2016 (Reference 6), TVA requested a one-time exemption from the requirements of 10 CFR 50.82(a)(8) and 10 CFR 50.75(h)(2) to authorize TVA to reallocate surplus funds from its NDT funds for SQN, Units 1 and 2, to the NDT funds for BFN, Units 1, 2, and 3, and WBN, Units 1 and 2. On September 9, 2016, the NRC approved the exemption (Reference 7). TVA reallocated the NDT funds on September 27, 2016. TVA's decommissioning fund balances for each of the

seven units at the end of CY 2016 are provided in Table 2. The dollar amounts shown in Table 2 have been rounded to the nearest dollar.

Table 2. Decommissioning Trust Fund Balances

Plant, Unit	Decommissioning Fund Balance (\$)
BFN, Unit 1	341,250,600
BFN, Unit 2	332,599,271
BFN, Unit 3	301,524,766
SQN, Unit 1	188,706,076
SQN, Unit 2	179,770,274
WBN, Unit 1	239,158,220
WBN, Unit 2	90,362,048

3. *A schedule of the annual amounts remaining to be collected for items in 10 CFR 50.75(b) and (c):*

TVA has established a method to provide funding assurance on an ongoing basis. This method establishes a projection of necessary funds at the end of each calendar year based upon current decommissioning cost estimates and assumptions regarding escalation and rate of earnings. Each year, TVA reviews the performance of its decommissioning trust fund. If funds fall below an established threshold of 95 percent of projected trust fund balances, TVA will make contributions to the trust fund or provide other methods of funding assurance to ensure adequate funding.

The table attached to TVA's March 31, 2015, letter (Reference 1) has been updated herein for the current calculated obligations, expressed in current dollars. This updated table is provided in the enclosure to this letter. At the end of 2016, the trust unit balances shown in Table 2 were greater than the respective present values of the costs to decommission each unit. Therefore, no amounts are scheduled to be collected at this time.

4. *The assumptions used regarding rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections:*

- The assumed escalation in decommissioning costs is four percent.
- TVA assumed a projected annual real rate of return on decommissioning funds of five percent, as authorized by the TVA Board of Directors, TVA's rate-making authority.

5. *Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v):*

None.

6. *Any modifications occurring to a licensee's current method of providing financial assurance since the last submitted report:*

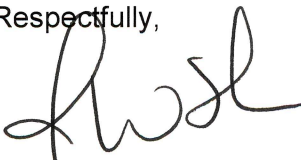
None.

7. *Any material changes to trust agreements.*

TVA's Sixth Amendment to the TVA Master Decommissioning Trust Agreement was provided as Enclosure 1 to Reference 5.

If you have any questions concerning this matter, please contact Gordon Williams at 423-751-2687.

Respectfully,



Joseph W. Shea
Vice President, Nuclear Licensing

Enclosure: Updated Projected Decommissioning Funding Levels for TVA Operating Units

cc (Enclosure):

NRC Regional Administrator – Region II
NRC Senior Resident Inspector – Browns Ferry Nuclear Plant
NRC Senior Resident Inspector – Sequoyah Nuclear Plant
NRC Senior Resident Inspector – Watts Bar Nuclear Plant
NRC Project Manager – Browns Ferry Nuclear Plant
NRC Project Manager – Sequoyah Nuclear Plant
NRC Project Manager – Watts Bar Nuclear Plant

ENCLOSURE

Updated Projected Decommissioning Funding Levels for TVA Operating Units

Updated Projected Decommissioning Funding Levels for TVA Operating Units*

Real Return 5.0% Year	BFN1 12-20-2033			BFN2 6-28-2034			BFN3 7-2-2036			SQN1 9-17-2040			SQN2 9-15-2041			WBN1 11-9-2035			WBN2 10-21-2055			ALL UNITS			
	Annual Disbursement	Annual Funding Assurance	Projected Fund Assets	Annual Disbursement	Annual Funding Assurance	Projected Fund Assets	Annual Disbursement	Annual Funding Assurance	Projected Fund Assets	Annual Disbursement	Annual Funding Assurance	Projected Fund Assets	Annual Disbursement	Annual Funding Assurance	Projected Fund Assets	Annual Disbursement	Annual Funding Assurance	Projected Fund Assets	Annual Disbursement	Annual Funding Assurance	Projected Fund Assets	Annual Disbursement	Annual Funding Assurance	Projected Fund Assets	
2016			\$233.1			\$227.2			\$206.0			\$126.5			\$120.5			\$160.3			\$60.6			\$1,134	
2017		\$0.0	\$244.8		\$0.0	\$238.6		\$0.0	\$216.3		\$0.0	\$132.8		\$0.0	\$126.5		\$0.0	\$168.3		\$0.0	\$63.6	\$0.0	\$0	\$1,191	
2018		\$0.0	\$257.0		\$0.0	\$250.5		\$0.0	\$227.1		\$0.0	\$139.4		\$0.0	\$132.8		\$0.0	\$176.7		\$0.0	\$66.8	\$0.0	\$0	\$1,250	
2019		\$0.0	\$269.8		\$0.0	\$263.0		\$0.0	\$238.4		\$0.0	\$146.4		\$0.0	\$139.5		\$0.0	\$185.5		\$0.0	\$70.1	\$0.0	\$0	\$1,313	
2020		\$0.0	\$283.3		\$0.0	\$276.2		\$0.0	\$250.3		\$0.0	\$153.7		\$0.0	\$146.4		\$0.0	\$194.8		\$0.0	\$73.6	\$0.0	\$0	\$1,378	
2021		\$0.0	\$297.5		\$0.0	\$290.0		\$0.0	\$262.9		\$0.0	\$161.4		\$0.0	\$153.8		\$0.0	\$204.6		\$0.0	\$77.3	\$0.0	\$0	\$1,447	
2022		\$0.0	\$312.4		\$0.0	\$304.5		\$0.0	\$276.0		\$0.0	\$169.5		\$0.0	\$161.4		\$0.0	\$214.8		\$0.0	\$81.2	\$0.0	\$0	\$1,520	
2023		\$0.0	\$328.0		\$0.0	\$319.7		\$0.0	\$289.8		\$0.0	\$177.9		\$0.0	\$169.5		\$0.0	\$225.5		\$0.0	\$85.2	\$0.0	\$0	\$1,596	
2024		\$0.0	\$344.4		\$0.0	\$335.7		\$0.0	\$304.3		\$0.0	\$186.8		\$0.0	\$178.0		\$0.0	\$236.8		\$0.0	\$89.5	\$0.0	\$0	\$1,675	
2025		\$0.0	\$361.6		\$0.0	\$352.4		\$0.0	\$319.5		\$0.0	\$196.2		\$0.0	\$186.9		\$0.0	\$248.6		\$0.0	\$93.9	\$0.0	\$0	\$1,759	
2026		\$0.0	\$379.7		\$0.0	\$370.1		\$0.0	\$335.5		\$0.0	\$206.0		\$0.0	\$196.2		\$0.0	\$261.1		\$0.0	\$98.6	\$0.0	\$0	\$1,847	
2027		\$0.0	\$398.7		\$0.0	\$388.6		\$0.0	\$352.3		\$0.0	\$216.3		\$0.0	\$206.0		\$0.0	\$274.1		\$0.0	\$103.6	\$0.0	\$0	\$1,940	
2028		\$0.0	\$418.6		\$0.0	\$408.0		\$0.0	\$369.9		\$0.0	\$227.1		\$0.0	\$216.4		\$0.0	\$287.8		\$0.0	\$108.8	\$0.0	\$0	\$2,037	
2029		\$0.0	\$439.5		\$0.0	\$428.4		\$0.0	\$388.4		\$0.0	\$238.5		\$0.0	\$227.2		\$0.0	\$302.2		\$0.0	\$114.2	\$0.0	\$0	\$2,138	
2030		\$0.0	\$461.5		\$0.0	\$449.8		\$0.0	\$407.8		\$0.0	\$250.4		\$0.0	\$238.5		\$0.0	\$317.3		\$0.0	\$119.9	\$0.0	\$0	\$2,245	
2031		\$0.0	\$484.6		\$0.0	\$472.3		\$0.0	\$428.2		\$0.0	\$262.9		\$0.0	\$250.5		\$0.0	\$333.2		\$0.0	\$125.9	\$0.0	\$0	\$2,358	
2032		\$0.0	\$508.8		\$0.0	\$495.9		\$0.0	\$449.6		\$0.0	\$276.1		\$0.0	\$263.0		\$0.0	\$349.9		\$0.0	\$132.2	\$0.0	\$0	\$2,475	
2033		\$0.0	\$533.5		\$0.0	\$520.7		\$0.0	\$472.1		\$0.0	\$289.9		\$0.0	\$276.1		\$0.0	\$367.4		\$0.0	\$138.8	\$0.0	\$0	\$2,598	
2034					\$0.0	\$533.5		\$0.0	\$495.7		\$0.0	\$304.3		\$0.0	\$289.9		\$0.0	\$385.7		\$0.0	\$145.7	\$0.0	\$0	\$2,155	
2035					\$0.0	\$520.4		\$0.0	\$520.4		\$0.0	\$319.6		\$0.0	\$304.4		\$0.0	\$402.3		\$0.0	\$153.0	\$0.0	\$0	\$1,700	
2036			\$108.6					\$0.0	\$335.5		\$0.0	\$319.7		\$0.0	\$319.7		\$0.0	\$160.7		\$0.0	\$167.0	\$0.0	\$0	\$1,458	
2037	\$642.1		\$642.1			\$108.6		\$0.0	\$352.3		\$0.0	\$335.6		\$0.0	\$335.6		\$0.0	\$168.7		\$0.0	\$168.7	\$642.1	\$0	\$1,607	
2038				\$642.1		\$642.1		\$0.0	\$369.9		\$0.0	\$352.4		\$0.0	\$352.4		\$81.9	\$177.1		\$0.0	\$177.1	\$642.1	\$0	\$1,623	
2039						\$108.6		\$0.0	\$388.4		\$0.0	\$370.0		\$0.0	\$370.0	\$484.2		\$484.2		\$0.0	\$186.0	\$484.2	\$0	\$1,537	
2040							\$642.1	\$642.1	\$0.0	\$402.3		\$0.0	\$388.5		\$0.0	\$388.5		\$0.0	\$195.3		\$0.0	\$642.1	\$0	\$1,628	
2041											\$402.3		\$0.0	\$402.3				\$0.0	\$205.1		\$0.0	\$0.0	\$0	\$607	
2042																		\$0.0	\$215.3		\$0.0	\$0.0	\$0	\$215	
2043											\$81.9							\$0.0	\$226.1		\$0.0	\$0.0	\$0	\$308	
2044												\$484.2		\$484.1		\$81.9		\$0.0	\$237.4		\$484.2	\$0	\$0	\$803	
2045													\$484.2		\$484.2		\$0.0	\$249.3		\$484.2	\$484.2	\$0	\$0	\$733	
2046																\$0.0	\$261.7		\$0.0	\$0.0	\$0.0	\$0	\$0	\$262	
2047																\$0.0	\$274.8		\$0.0	\$0.0	\$0.0	\$0	\$0	\$275	
2048																\$0.0	\$288.6		\$0.0	\$0.0	\$0.0	\$0	\$0	\$289	
2049																\$0.0	\$303.0		\$0.0	\$0.0	\$0.0	\$0	\$0	\$303	
2050																\$0.0	\$318.1		\$0.0	\$0.0	\$0.0	\$0	\$0	\$318	
2051																\$0.0	\$334.0		\$0.0	\$0.0	\$0.0	\$0	\$0	\$334	
2052																\$0.0	\$350.7		\$0.0	\$0.0	\$0.0	\$0	\$0	\$351	
2053																\$0.0	\$368.3		\$0.0	\$0.0	\$0.0	\$0	\$0	\$368	
2054																\$0.0	\$386.7		\$0.0	\$0.0	\$0.0	\$0	\$0	\$387	
2055																\$0.0	\$402.3		\$0.0	\$0.0	\$0.0	\$0	\$0	\$402	
																					\$81.9	\$0.0	\$0.0	\$0.0	
																			\$484.2		\$484.1	\$484.2	\$0.0	\$0.0	
	\$642.1			\$642.1			\$642.1					\$484.2			\$484.2				\$484.2				\$3,862.9		

* All Dollars in Millions