Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

September 15, 2011

10 CFR 50.4(b)
10 CFR 50.34(b)

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

Watts Bar Nuclear Plant, Unit 2
NRC Docket No. 50-391

Subject: **WATTS BAR NUCLEAR PLANT (WBN) UNIT 2 – FINAL SAFETY ANALYSIS REPORT (FSAR) – REVISED ENCLOSURES 3 AND 5 FOR TVA TO NRC LETTER DATED DECEMBER 10, 2010**

References:
1. TVA letter to NRC dated December 10, 2010, "Watts Bar Nuclear Plant (WBN) Unit 2 – Final Safety Analysis Report (FSAR) – Response to Requests for Additional Information"
2. TVA Letter to NRC dated April 13, 2011, "Watts Bar Nuclear Plant (WBN) Unit 2 - Final Safety Analysis Report (FSAR) - Response to Requests for Additional Information (RAIs) Related to FSAR Sections 9.2.1 and 9.2.2"

The purpose of this letter is to provide revisions to Enclosures 3 and 5 previously provided in Reference 1, which addressed an NRC request for additional information (RAI). Enclosure 3 entitled, "Summary Heat Load and Flow Tables for RAI 9.2-CSS-4," had provided data for the Component Cooling System head loads and flows. Enclosure 5 entitled, "Summary Heat Load and Flow Tables for RAI 9.2.1-ERCW-3," had provided data for the Essential Raw Cooling Water (ERCW) System Train B heat loads and flows.

These revisions are necessary due to minor changes to flow allocations and the identification of errors recently found in the flows and heat loads while reviewing the basis calculations for these values. This condition was documented into TVA's corrective action program as Problem Evaluation Report (PER) 421509. Provided in the enclosure to this letter are the revised enclosures.

D030
NRR

In addition, TVA provided in Reference 2 the proposed words and numbers that TVA would incorporate into a future FSAR amendment. However, the actual words and numbers incorporated as part of Amendment 106 (A106) were changed to reflect the corrections made to the Reference 2 enclosure numbers. FSAR A106 is being transmitted via separate correspondence.

There are no new commitments made in this letter. If you should have any questions, please contact Gordon Arent at (423) 365-2004.

I declare under the penalty of perjury that the foregoing is true and correct. Executed on the 15th of September, 2011.

Respectfully,

David Stinson
Watts Bar Unit 2 Vice President

Enclosure: Revised Enclosures 3 and 5 for TVA to NRC Letter dated December 10, 2010

cc (Enclosure):
U. S. Nuclear Regulatory Commission
Region II
Marquis One Tower
245 Peachtree Center Ave., NE Suite 1200
Atlanta, Georgia 30303-1257

NRC Resident Inspector Unit 2
Watts Bar Nuclear Plant
1260 Nuclear Plant Road
Spring City, Tennessee 37381

ENCLOSURE

Revised Enclosures 3 and 5 for TVA to NRC Letter dated December 10, 2010

ENCLOSURE 3

Summary Heat Load and Flow Tables for RAI 9.2 - CSS - 4.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

COMPONENT COOLING SYSTEM INDIVIDUAL LOADS (sheet 1 of 2)

Equipment	Heat Load (KBTU/hr)	Flow (gpm)
Containment Spray System Pump Oil Cooler	14.7	2.0
Centrifugal Charging Pump (CCP) Oil Cooler	66.8	28.0
Non-Regenerative Heat Exchanger (Startup)	13,100.0	1,000.0
Non-Regenerative Heat Exchanger (Power Generation)	6,400.0	640.0
Non-Regenerative Heat Exchanger (Hot Standby)	8,350.0	640.0
Non-Regenerative Heat Exchanger (Hot Shutdown)	2,530.0	640.0
Non-Regenerative Heat Exchanger (Cold Shutdown)	1,770.0	640.0
Non-Regenerative Heat Exchanger (All Others)	0.0	0.0
Excess Letdown Heat Exchanger	4,930.0	232.0
Seal Water Heat Exchanger (Startup w/ Offsite Power)	1,160.0	200.0
Seal Water Heat Exchanger (Refueling)	376.0	200.0
Seal Water Heat Exchanger (Power Generation)	1,880.0	200.0
Seal Water Heat Exchanger (Hot Shutdown)	517.0	200.0
Seal Water Heat Exchanger (Hot Standby)	517.0	200.0
Seal Water Heat Exchanger (LOCA-Safety Injection)	418.0	200.0
Seal Water Heat Exchanger (LOCA-Recirculation)	941.0	200.0
Seal Water Heat Exchanger (Cold Shutdown)	1,070.0	200.0
Reactor Coolant Pump Thermal Barrier (each)	439.1	40.0
Reactor Coolant Pump Upper Oil Cooler (each)	736.5	150.0
Reactor Coolant Pump Lower Oil Cooler (each)	24.4	5.0
RHR Pump Seal Water Cooler	100.0	10.0

ENCLOSURE 3

Summary Heat Load and Flow Tables for RAI 9.2 - CSS - 4.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

COMPONENT COOLING SYSTEM INDIVIDUAL LOADS (sheet 2 of 2)

Equipment	Heat Load (KBTU/hr)	Flow (gpm)
RHR Heat Exchanger (Startup)	19,600.0	5,000.0
RHR Heat Exchanger (Hot Shutdown)	*	5,000.0
RHR Heat Exchanger (Cold Shutdown)	*	5,000.0
RHR Heat Exchanger (Start of Refueling; Fuel in Vessel)	*	5,000.0
RHR Heat Exchanger (LOCA-Recirculation)	*	5,000.0
RHR Heat Exchanger (Other Modes)	*	1300.0
Spent Fuel Pool Cooling Heat Exchanger (All Fuel Discharged into the SFP)	*	3,000.0
Safety Injection System Pump Oil Cooler (Unit 2 Only)	46.0	15.0
Sample System Heat Exchanger A	68.4	20.0
Sample System Heat Exchanger B	39.2	28.0
Sample System Heat Exchanger C (Unit 1 Only)	11.6	20.0
Hot Sample Chiller	75.9	22.0
Post Accident Sampling Coolers (Unit 1 Only)	252.0	10.0
Waste Gas Compressor	135.2	50.0
Radiation Monitor	0.0	6.0

*The heat load for these components is dependent upon combined operating mode. It is accounted for in the overall CCS tables.

ENCLOSURE 3

Summary Heat Load and Flow Tables for RAI 9.2 - CSS - 4.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

CCS Train A Heat Loads and Flows with Offsite Power Available (sheet 1 of 2)

			Unit 1 Operational Modes							
Unit 2 Operational Modes	Op Mode	CCS Train	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
	Startup	1A (kBTU/hr)	60,910.1	30,300.1	49,376.7	56,860.1	46,046.0	22,520.6	28,955.6	28,487.1
		1A (gpm)	10,413.0	4,821.0	6,821.0	9,041.0	8,401.0	4,831.0	6,051.0	4,821.0
		2A (kBTU/hr)	63,675.4	44,075.4	80,498.5	63,675.4	63,675.4	44,075.4	80,498.5	44,075.4
		2A (gpm)	7,393.0	7,393.0	10,393.0	7,393.0	7,393.0	7,393.0	10,393.0	7,393.0
	Power	1A (kBTU/hr)	44,087.0	30,300.1	49,376.7	40,037.0	46,046.0	22,520.6	28,955.6	11,664.0
		1A (gpm)	7,413.0	4,821.0	6,821.0	6,041.0	8,401.0	4,831.0	6,051.0	1,821.0
		2A (kBTU/hr)	30,288.5	13,465.4	30,288.5	30,288.5	13,465.4	13,465.4	30,288.5	30,288.5
		2A (gpm)	4,801.0	1,801.0	4,801.0	4,801.0	1,801.0	1,801.0	4,801.0	4,801.0
	Hot Shutdown	1A (kBTU/hr)	80,510.1	30,300.1	N/A	93,560.1	74,396.0	22,520.6	N/A	28,487.1
		1A (gpm)	10,413.0	4,821.0		9,041.0	8,401.0	4,831.0		4,821.0
		2A (kBTU/hr)	49,365.0	49,365.0		49,365.0	49,365.0	49,365.0		49,365.0
		2A (gpm)	6,801.0	6,801.0		6,801.0	6,801.0	6,801.0		6,801.0
	Cold Shutdown	1A (kBTU/hr)	80,510.1	30,300.1	49,376.7	56,860.1	74,396.0	22,520.6	28,955.6	28,487.1
		1A (gpm)	10,413.0	4,821.0	6,821.0	9,041.0	8,401.0	4,831.0	6,051.0	4,821.0
		2A (kBTU/hr)	40,025.4	40,025.4	93,548.5	76,725.4	40,025.4	40,025.4	93,548.4	40,025.4
		2A (gpm)	6,021.0	6,021.0	9,021.0	6,021.0	6,021.0	6,021.0	9,021.0	6,021.0

ENCLOSURE 3

Summary Heat Load and Flow Tables for RAI 9.2 - CSS - 4.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

CCS Train A Heat Loads and Flows with Offsite Power Available (sheet 2 of 2)

Unit 2 Operational Modes			Unit 1 Operational Modes							
	Op Mode	CCS Train	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
	Initial Refueling	1A (kBTU/hr)	63,687.0	13,477.0	49,376.7	40,037.0	46,046.0	5,697.5	28,955.6	11,664.0
		1A (gpm)	7,413.0	1,821.0	6,821.0	6,041.0	8,401.0	1,831.0	6,051.0	1,821.0
		2A (kBTU/hr)	46,034.4	46,034.5	74,384.4	74,384.5	57,561.5	46,034.4	74,384.4	46,034.4
		2A (gpm)	8,381.0	8,381.0	8,381.0	8,381.0	5,381.0	8,381.0	8,381.0	8,381.0
	Safety Injection	1A (kBTU/hr)	44,087.0	30,300.1	49,376.7	40,037.0	46,046.0	N/A	N/A	11,664.0
		1A (gpm)	7,413.0	4,821.0	6,821.0	6,041.0	8,401.0			1,821.0
		2A (kBTU/hr)	22,268.6	5,445.5	22,268.6	22,268.6	5,445.5			22,268.6
		2A (gpm)	4,801.0	1,801.0	4,801.0	4,801.0	1,801.0			4,801.0
	LOCA Recirc	1A (kBTU/hr)	80,510.1	30,300.1	N/A	93,560.1	74,396.0	N/A	N/A	28,487.1
		1A (gpm)	10,413.0	4,821.0		9,041.0	8,401.0			4,821.0
		2A (kBTU/hr)	28,703.7	28,703.6		28,703.7	28,703.7			28,703.6
		2A (gpm)	6,021.0	6,021.0		6,021.0	6,021.0			6,021.0
	Hot Standby	1A (kBTU/hr)	44,087.0	30,300.1	49,376.7	40,037.0	46,046.0	22,520.6	28,955.6	28,487.1
		1A (gpm)	7,413.0	4,821.0	6,821.0	6,041.0	8,401.0	4,831.0	6,051.0	4,821.0
		2A (kBTU/hr)	28,475.5	11,652.4	28,475.5	28,475.5	11,652.4	11,652.4	28,475.5	11,652.4
		2A (gpm)	4,801.0	1,801.0	4,801.0	4,801.0	1,801.0	1,801.0	4,801.0	1,801.0

ENCLOSURE 3

Summary Heat Load and Flow Tables for RAI 9.2 - CSS - 4.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

CCS Train A Heat Loads and Flows with LOOP and Loss of Train B (sheet 1 of 2)

			Unit 1 Operational Modes							
	Op Mode	CCS Train	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
Unit 2 Operational Modes	Startup	1A (kBTU/hr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		1A (gpm)								
		2A (kBTU/hr)								
		2A (gpm)								
	Power	1A (kBTU/hr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		1A (gpm)								
		2A (kBTU/hr)								
		2A (gpm)								
	Hot Shutdown	1A (kBTU/hr)	N/A	N/A	N/A	93,229.8	74,065.8	17,720.5	N/A	25,756.8
		1A (gpm)				9,401.0	9,401.0	4,411.0		4,401.0
		2A (kBTU/hr)				92,479.0	92,479.0	92,479.0		92,479.0
		2A (gpm)				6,381.0	6,381.0	6,381.0		6,381.0
	Cold Shutdown	1A (kBTU/hr)	N/A	N/A	92,479.0	93,229.8	74,065.8	17,720.5	56,220.5	25,756.8
		1A (gpm)			6,401.0	9,401.0	9,401.0	4,411.0	6,411.0	4,401.0
		2A (kBTU/hr)			93,229.8	76,406.8	76,406.8	76,406.8	93,229.9	76,406.8
		2A (gpm)			9,381.0	6,381.0	6,381.0	6,381.0	9,381.0	6,381.0

ENCLOSURE 3

Summary Heat Load and Flow Tables for RAI 9.2 - CSS - 4.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

CCS Train A Heat Loads and Flows with LOOP and Loss of Train B (sheet 2 of 2)

			Unit 1 Operational Modes							
	Op Mode	CCS Train	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
Unit 2 Operational Modes	Initial Refueling	1A (kBTU/hr)	N/A	N/A	92,479.0	76,406.8	74,065.8	17,720.5	56,220.5	8,933.8
		1A (gpm)			6,401.0	6,401.0	9,401.0	1,411.0	6,411.0	1,401.0
		2A (kBTU/hr)			74,065.8	74,065.8	57,242.8	57,242.8	74,065.8	74,065.8
		2A (gpm)			9,381.0	9,381.0	6,381.0	9,381.0	9,381.0	9,381.0
	Safety Injection	1A (kBTU/hr)	N/A	N/A	92,479.0	76,406.8	74,065.8	N/A	N/A	8,933.8
		1A (gpm)			6,401.0	6,401.0	9,401.0			1,401.0
		2A (kBTU/hr)			17,468.5	17,468.6	645.5			17,468.6
		2A (gpm)			4,381.0	4,381.0	1,381.0			4,381.0
	LOCA Recirc	1A (kBTU/hr)	N/A	N/A	N/A	93,229.8	74,065.8	N/A	N/A	25,756.8
		1A (gpm)				9,401.0	9,401.0			4,401.0
		2A (kBTU/hr)				56,103.6	56,103.6			56,103.6
		2A (gpm)				6,381.0	6,381.0			6,381.0
	Hot Standby	1A (kBTU/hr)	N/A	N/A	92,479.0	93,229.8	74,065.8	17,720.5	56,220.5	25,756.8
		1A (gpm)			6,401.0	9,401.0	9,401.0	4,411.0	6,411.0	4,401.0
		2A (kBTU/hr)			25,892.0	9,068.9	9,068.9	9,068.9	25,892.0	9,068.9
		2A (gpm)			4,381.0	1,381.0	1,381.0	1,381.0	4,381.0	1,381.0

ENCLOSURE 3

Summary Heat Load and Flow Tables for RAI 9.2 - CSS - 4.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

CCS Train B Heat Loads and Flows with Offsite Power Available (sheet 1 of 3)

			Unit 1 Operational Modes							
	Op Mode	CCS Train	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
Unit 2 Operational Modes	Startup	1B (kBTU/hr)	19,766.8	66.8	44,799.4	36,866.8	28,516.8	227.5	27,627.5	66.8
		2B (kBTU/hr)	166.8	19,766.0	166.8	166.8	166.8	19,766.0	166.8	19,766.0
		B Total	19,933.6	19,832.8	44,966.2	37,033.6	28,683.6	19,993.5	27,794.3	19,832.8
		1B (gpm)	5,061.0	1,361.0	5,061.0	5,061.0	5,061.0	1,361.0	5,061.0	1,361.0
		2B (gpm)	1,355.0	5,055.0	1,355.0	1,355.0	1,355.0	5,055.0	1,355.0	5,055.0
		B Total	6,416.0	6,416.0	6,416.0	6,416.0	6,416.0	6,416.0	6,416.0	6,416.0
	Power	1B (kBTU/hr)	19,766.8	66.8	44,799.4	36,866.8	28,516.8	227.5	27,627.5	66.8
		2B (kBTU/hr)	66.8	66.8	66.8	66.8	66.8	66.8	66.8	66.8
		B Total	19,833.6	133.6	44,866.2	36,933.6	28,583.6	294.3	27,694.3	133.6
		1B (gpm)	5,061.0	1,361.0	5,061.0	5,061.0	5,061.0	1,361.0	5,061.0	1,361.0
		2B (gpm)	1,355.0	1,355.0	1,355.0	1,355.0	1,355.0	1,355.0	1,355.0	1,355.0
		B Total	6,416.0	2,716.0	6,416.0	6,416.0	6,416.0	2,716.0	6,416.0	2,716.0
	Hot Shutdown	1B (kBTU/hr)	166.8	66.8	N/A	166.8	166.8	227.5	N/A	66.8
		2B (kBTU/hr)	44,799.4	44,799.4		44,799.4	44,799.4	44,799.4		44,799.4
		B Total	44,966.2	44,866.2		44,966.2	44,966.2	45,026.9		44,866.2
		1B (gpm)	1,361.0	1,361.0		1,361.0	1,361.0	1,361.0		1,361.0
		2B (gpm)	5,055.0	5,055.0		5,055.0	5,055.0	5,055.0		5,055.0
		B Total	6,416.0	6,416.0		6,416.0	6,416.0	6,416.0		6,416.0

ENCLOSURE 3

Summary Heat Load and Flow Tables for RAI 9.2 - CSS - 4.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

CCS Train B Heat Loads and Flows with Offsite Power Available (sheet 2 of 3)

			Unit 1 Operational Modes							
	Op Mode	CCS Train	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
Unit 2 Operational Modes	Cold Shutdown	1B (kBTU/hr)	166.8	66.8	44,799.4	36,866.8	166.8	227.5	27,627.5	66.8
		2B (kBTU/hr)	36,866.8	36,866.8	166.8	166.8	36,866.8	36,866.8	166.8	36,866.8
		B Total	37,033.6	36,933.6	44,966.2	37,033.6	37,033.6	37,094.3	27,794.3	36,933.6
		1B (gpm)	1,361.0	1,361.0	5,061.0	5,061.0	1,361.0	1,361.0	5,061.0	1,361.0
		2B (gpm)	5,055.0	5,055.0	1,355.0	1,355.0	5,055.0	5,055.0	1,355.0	5,055.0
		B Total	6,416.0	6,416.0	6,416.0	6,416.0	6,416.0	6,416.0	6,416.0	6,416.0
	Initial Refueling	1B (kBTU/hr)	166.8	66.8	44,799.4	36,866.8	28,516.8	227.5	27,627.5	66.8
		2B (kBTU/hr)	28,516.8	28,516.8	166.8	166.8	166.8	28,516.8	166.8	28,516.8
		B Total	28,683.6	28,583.6	44,966.2	37,033.6	28,683.6	28,744.3	27,794.3	28,583.6
		1B (gpm)	1,361.0	1,361.0	5,061.0	5,061.0	5,061.0	1,361.0	5,061.0	1,361.0
		2B (gpm)	5,055.0	5,055.0	1,355.0	1,355.0	1,355.0	5,055.0	1,355.0	5,055.0
		B Total	6,416.0	6,416.0	6,416.0	6,416.0	6,416.0	6,416.0	6,416.0	6,416.0
	Safety Injection	1B (kBTU/hr)	19,766.8	66.8	44,799.4	36,866.8	28,516.8	N/A	N/A	66.8
		2B (kBTU/hr)	227.5	227.5	227.5	227.5	227.5			227.5
		B Total	19,994.3	294.3	45,026.9	37,094.3	28,744.3			294.3
		1B (gpm)	5,061.0	1,361.0	5,061.0	5,061.0	5,061.0			1,361.0
		2B (gpm)	1,355.0	1,355.0	1,355.0	1,355.0	1,355.0			1,355.0
		B Total	6,416.0	2,716.0	6,416.0	6,416.0	6,416.0			2,716.0

ENCLOSURE 3

Summary Heat Load and Flow Tables for RAI 9.2 - CSS - 4.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

CCS Train B Heat Loads and Flows with Offsite Power Available (sheet 3 of 3)

			Unit 1 Operational Modes							
	Op Mode	CCS Train	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
Unit 2 Operational Modes	LOCA Recirc	1B (kBTU/hr)	166.8	66.8	N/A	166.8	166.8	N/A	N/A	66.8
		2B (kBTU/hr)	27,627.5	27,627.5		27,627.5	27,627.5			27,627.5
		B Total	27,794.3	27,694.3		27,794.3	27,794.3			27,694.3
		1B (gpm)	1,361.0	1,361.0		1,361.0	1,361.0			1,361.0
		2B (gpm)	5,055.0	5,055.0		5,055.0	5,055.0			5,055.0
		B Total	6,416.0	6,416.0		6,416.0	6,416.0			6,416.0
	Hot Standby	1B (kBTU/hr)	19,766.8	66.8	44,799.4	36,866.8	28,516.8	227.5	27,627.5	66.8
		2B (kBTU/hr)	66.8	66.8	66.8	66.8	66.8	66.8	66.8	66.8
		B Total	19,833.6	133.6	44,866.2	36,933.6	28,583.6	294.3	27,694.3	133.6
		1B (gpm)	5,061.0	1,361.0	5,061.0	5,061.0	5,061.0	1,361.0	5,061.0	1,361.0
		2B (gpm)	1,355.0	1,355.0	1,355.0	1,355.0	1,355.0	1,355.0	1,355.0	1,355.0
		B Total	6,416.0	2,716.0	6,416.0	6,416.0	6,416.0	2,716.0	6,416.0	2,716.0

ENCLOSURE 3

Summary Heat Load and Flow Tables for RAI 9.2 - CSS - 4.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

CCS Train B Heat Loads and Flows with LOOP and Loss of Train A (sheet 1 of 3)

			Unit 1 Operational Modes							
	Op Mode	CCS Train	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
Unit 2 Operational Modes	Startup	1B (kBTU/hr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		2B (kBTU/hr)								
		B Total								
		1B (gpm)								
		2B (gpm)								
		B Total								
	Power	1B (kBTU/hr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		2B (kBTU/hr)								
		B Total								
		1B (gpm)								
		2B (gpm)								
		B Total								
	Hot Shutdown	1B (kBTU/hr)	N/A	N/A	N/A	73,701.9	57,001.9	362.6	N/A	201.9
		2B (kBTU/hr)				89,432.0	89,432.0	89,432.0		89,432.0
		B Total				163,133.9	146,433.9	89,794.6		89,633.9
		1B (gpm)				5,111.0	5,111.0	1,411.0		1,411.0
		2B (gpm)				5,055.0	5,055.0	5,055.0		5,055.0
		B Total				10,166.0	10,166.0	6,466.0		6,466.0

ENCLOSURE 3

Summary Heat Load and Flow Tables for RAI 9.2 - CSS - 4.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

CCS Train B Heat Loads and Flows with LOOP and Loss of Train A (sheet 2 of 3)

			Unit 1 Operational Modes							
	Op Mode	CCS Train	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
Unit 2 Operational Modes	Cold Shutdown	1B (kBTU/hr)	N/A	N/A	89,567.1	73,701.9	57,001.9	362.6	55,162.6	201.9
		2B (kBTU/hr)			73,566.8	73,566.8	73,566.8	73,566.8	73,566.8	73,566.8
		B Total			163,133.9	147,268.7	130,568.7	73,929.4	128,729.4	73,768.7
		1B (gpm)			5,111.0	5,111.0	5,111.0	1,411.0	5,111.0	1,411.0
		2B (gpm)			5,055.0	5,055.0	5,055.0	5,055.0	5,055.0	5,055.0
		B Total			10,166.0	10,166.0	10,166.0	6,466.0	10,166.0	6,466.0
	Initial Refueling	1B (kBTU/hr)	N/A	N/A	89,567.1	73,701.9	57,001.9	362.6	55,162.6	201.9
		2B (kBTU/hr)			56,866.8	56,866.8	56,866.8	56,866.8	56,866.8	56,866.8
		B Total			146,433.9	130,568.7	113,868.7	57,229.4	112,029.4	57,068.7
		1B (gpm)			5,111.0	5,111.0	5,111.0	1,411.0	5,111.0	1,411.0
		2B (gpm)			5,055.0	5,055.0	5,055.0	5,055.0	5,055.0	5,055.0
		B Total			10,166.0	10,166.0	10,166.0	6,466.0	10,166.0	6,466.0
	Safety Injection	1B (kBTU/hr)	N/A	N/A	89,567.1	73,701.9	57,001.9	N/A	N/A	201.9
		2B (kBTU/hr)			227.5	227.5	227.5			227.5
		B Total			89,794.6	73,929.4	57,229.4			429.4
		1B (gpm)			5,111.0	5,111.0	5,111.0			1,411.0
		2B (gpm)			1,355.0	1,355.0	1,355.0			1,355.0
		B Total			6,466.0	6,466.0	6,466.0			2,766.0

ENCLOSURE 3

Summary Heat Load and Flow Tables for RAI 9.2 - CSS - 4.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

CCS Train B Heat Loads and Flows with LOOP and Loss of Train A (sheet 3 of 3)

			Unit 1 Operational Modes							
	Op Mode	CCS Train	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
Unit 2 Operational Modes	LOCA Recirc	1B (kBTU/hr)	N/A	N/A	N/A	65,351.9	57,001.9	N/A	N/A	201.9
		2B (kBTU/hr)				55,027.5	55,027.5			55,027.5
		B Total				120,379.4	112,029.4			55,229.4
		1B (gpm)				5,111.0	5,111.0			1,411.0
		2B (gpm)				5,055.0	5,055.0			5,055.0
		B Total				10,166.0	10,166.0			6,466.0
	Hot Standby	1B (kBTU/hr)	N/A	N/A	89,567.1	73,701.9	57,001.9	362.6	55,162.6	201.9
		2B (kBTU/hr)			166.8	166.8	166.8	166.8	166.8	166.8
		B Total			89,733.9	73,868.7	57,168.7	529.4	55,329.4	368.7
		1B (gpm)			5,111.0	5,111.0	5,111.0	1,411.0	5,111.0	1,411.0
		2B (gpm)			1,355.0	1,355.0	1,355.0	1,355.0	1,355.0	1,355.0
		B Total			6,466.0	6,466.0	6,466.0	2,766.0	6,466.0	2,766.0

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ESSENTIAL RAW COOLING WATER SYSTEM INDIVIDUAL LOADS (sheet 1 of 2)

Equipment	Heat Load (KBTU/hr)	Flow (gpm)
Motor Driven Pump	0.0	445.0
Turbine Driven Pump	0.0	780.0
Electric Board Room A/C	2,496.0	370.0
Main Control Room A/C	2,496.0	293.0
Shutdown Board Room A/C	2,971.0	560.0
Aux Control Air Compressor	60.5	3.5
Comp Cooling Heat Exchanger	0.0	Variable
Surge Tank	0.0	Variable
Containment Spray Heat Exchanger	116,400.0	5,200.0
Cooling Water Pump	negligible	6.0
Prelube Pump	0.0	0.8
Screen Wash Pump Prelube	0.0	10.0
Strainer (Backwash/Flush)	0.0	N/A
Ice Machine Package Chlr (Flood Mode Only)	3,000.0	220.0
RCP Motor Cooler	880.7	110.0
RCP Thermal Barrier (Flood Mode Only)	0.0	40.0
RHR Heat Exchanger (Flood Mode Only)	37,400.0	5,000.0
Station Air Compressor A, B, C (Aftercoolers)	173.1	12.4
Station Air Compressor D	368.1	96.3
Diesel Generator Hxs	7,125.0	1,300.0
Spent Fuel Pool Heat Exchanger (Flood Mode Only)	11,940.0	3,000.0
Gross Failed Fuel Detector	0.0	14.0
Hot Sample Chiller (Flood Mode Only)	60.0	20.0
Sample Heat Exchanger A (Flood Mode Only)	0.0	20.0
Sample Heat Exchanger B (Flood Mode Only)	0.0	28.0

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ESSENTIAL RAW COOLING WATER SYSTEM INDIVIDUAL LOADS (sheet 2 of 2)

Equipment	Heat Load (KBTU/hr)	Flow (gpm)
Sample Heat Exchanger C (Flood Mode Only)	0.0	20.0
Titration Room (Flood Mode Only)	60.0	145.0
AFW & BATP Space Cooler	298.0	60.0
AFW & CCS Pump Space Cooler	592.6	102.0
Containment Spray Pump Room Cooler	163.2	28.0
CVCS CCP Room Cooler	123.0	25.0
CVCS RCP Room Cooler	57.5	12.0
EGTS Room Cooler	49.0	10.0
RB Instrument Room Water Chiller	105.0	30.0
Penetration Room Cooler 1 (Unit 1)	59.5	12.0
Penetration Room Cooler 1 (Unit 2)	56.5	12.0
Penetration Room Cooler 2 (El 713) Unit 1 & 2	52.5	11.0
Penetration Room Cooler 3 (El 737) Unit 1 & 2	58.0	12.0
Pipe Chase Cooler	72.0	15.0
RHR Pump Room Cooler	92.5	19.0
SFPCS & TBBP Space Cooler	141.5	29.0
SIS Pump Room Cooler	105.0	22.0
Control Rod Drive Mechanism Cooler	1,934.4	124.0
Lower Containment Vent Cooler	2,262.4	306.0
Upper Containment Vent Cooler	210.8	23.0
Station Air Compressors A, B, C (Cylinder)	205.7	16.5

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ERCW Train A Heat Loads and Flows with Offsite Power Available (sheet 1 of 4)

Unit 2 Operational Modes			Unit 1 Operational Modes							
	Op Mode	CCS Train	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
	Startup	CCS A (kBTU/hr)	60,910	30,300	49,377	56,860	46,046	22,521	28,956	28,487
		CCS B (kBTU/hr)	63,675	44,075	80,499	63,675	63,675	44,075	80,499	44,075
		Other (kBTU/hr)	29,387	29,387	28,506	23,756	23,756	59,078	165,064	29,387
		Total Load	153,972	103,762	158,382	144,291	133,477	125,674	274,519	101,949
		CCS A (gpm)	5,850	3,330	6,650	6,200	4,560	1,810	2,900	3,190
		CCS B (gpm)	5,850	5,850	5,850	5,850	5,850	5,850	5,850	5,850
		Other (gpm)	4,148	4,148	4,038	3,680	3,680	6,740	10,842	4,148
		Total Flow	15,848	13,328	16,538	15,730	14,090	14,400	19,592	13,188
	Power	CCS A (kBTU/hr)	44,087	30,300	49,377	40,037	46,046	22,521	28,956	11,664
		CCS B (kBTU/hr)	30,289	13,465	30,289	30,289	13,465	13,465	30,289	30,289
		Other (kBTU/hr)	29,436	29,436	28,555	23,805	23,805	59,127	165,113	29,436
		Total Load	103,812	73,201	108,221	94,131	83,316	95,113	224,358	71,389
		CCS A (gpm)	5,850	3,330	6,650	6,200	4,560	1,810	2,900	3,190
		CCS B (gpm)	3,330	3,330	3,330	3,330	3,330	3,330	3,330	3,330
		Other (gpm)	4,158	4,158	4,048	3,690	3,690	6,750	10,852	4,158
		Total Flow	13,338	10,818	14,028	13,220	11,580	11,890	17,082	10,678

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ERCW Train A Heat Loads and Flows with Offsite Power Available (sheet 2 of 4)

Unit 2 Operational Modes			Unit 1 Operational Modes							
	Op Mode	CCS Train	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
	Hot Shutdown	CCS A (kBTU/hr)	80,510	30,300	N/A	93,560	74,396	22,521	N/A	28,487
		CCS B (kBTU/hr)	49,365	49,365		49,365	49,365	49,365		49,365
		Other (kBTU/hr)	28,555	28,555		22,925	22,925	58,246		28,555
		Total Load	158,430	108,220		165,850	146,686	130,132		106,407
		CCS A (gpm)	5,850	3,330		6,200	4,560	1,810		3,190
		CCS B (gpm)	6,650	6,650		6,650	6,650	6,650		6,650
		Other (gpm)	4,048	4,048		3,580	3,580	6,640		4,048
		Total Flow	16,548	14,028		16,430	14,790	15,100		13,888
	Cold Shutdown	CCS A (kBTU/hr)	80,510	30,300	49,377	56,860	74,396	22,521	28,956	28,487
		CCS B (kBTU/hr)	40,025	40,025	93,549	76,725	40,025	40,025	93,548	40,025
		Other (kBTU/hr)	23,805	23,805	22,925	18,175	18,175	53,497	159,483	23,805
		Total Load	144,340	94,130	165,851	151,760	132,596	116,043	281,987	92,317
		CCS A (gpm)	5,850	3,330	6,650	6,200	4,560	1,810	2,900	3,190
		CCS B (gpm)	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200
		Other (gpm)	3,690	3,690	3,580	3,222	3,222	6,282	10,384	3,690
		Total Flow	15,740	13,220	16,430	15,622	13,982	14,292	19,484	13,080

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ERCW Train A Heat Loads and Flows with Offsite Power Available (sheet 3 of 4)

Unit 2 Operational Modes			Unit 1 Operational Modes							
	Op Mode	**CCS Train**	**Startup**	**Power**	**Hot Shutdown**	**Cold Shutdown**	**Initial Refueling**	**Safety Injection**	**LOCA Recirc**	**Hot Standby**
	Initial Refueling	CCS A (kBTU/hr)	63,687	13,477	49,377	40,037	46,046	5,698	28,956	11,664
		CCS B (kBTU/hr)	46,034	46,035	74,384	74,385	57,562	46,034	74,384	46,034
		Other (kBTU/hr)	23,805	23,805	22,925	18,175	18,175	53,497	159,483	23,805
		Total Load	133,526	83,317	146,686	132,597	121,783	105,229	262,823	81,503
		CCS A (gpm)	5,850	3,330	6,650	6,200	4,560	1,810	2,900	3,190
		CCS B (gpm)	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560
		Other (gpm)	3,690	3,690	3,580	3,222	3,222	6,282	10,384	3,690
		Total Flow	14,100	11,580	14,790	13,982	12,342	12,652	17,844	11,440
	Safety Injection	CCS A (kBTU/hr)	44,087	30,300	49,377	40,037	46,046	N/A	N/A	11,664
		CCS B (kBTU/hr)	22,269	5,446	22,269	22,269	5,446			22,269
		Other (kBTU/hr)	30,191	30,191	29,310	24,561	24,561			30,191
		Total Load	96,547	65,937	100,956	86,867	76,053			64,124
		CCS A (gpm)	5,850	3,330	6,650	6,200	4,560			3,190
		CCS B (gpm)	1,810	1,810	1,810	1,810	1,810			1,810
		Other (gpm)	6,750	6,750	6,640	6,282	6,282			6,750
		Total Flow	14,410	11,890	15,100	14,292	12,652			11,750

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ERCW Train A Heat Loads and Flows with Offsite Power Available (sheet 4 of 4)

			Unit 1 Operational Modes							
Unit 2 Operational Modes	Op Mode	CCS Train	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
	LOCA Recirc	CCS A (kBTU/hr)	80,510	30,300	N/A	93,560	74,396	N/A	N/A	28,487
		CCS B (kBTU/hr)	28,704	28,704		28,704	28,704			28,704
		Other (kBTU/hr)	136,177	136,177		130,547	130,547			136,177
		Total Load	245,391	195,181		252,811	233,647			193,368
		CCS A (gpm)	5,850	3,330		6,200	4,560			3,190
		CCS B (gpm)	2,900	2,900		2,900	2,900			2,900
		Other (gpm)	10,852	10,852		10,384	10,384			10,852
		Total Flow	19,602	17,082		19,484	17,844			16,942
	Hot Standby	CCS A (kBTU/hr)	44,087	30,300	49,377	40,037	46,046	22,521	28,956	28,487
		CCS B (kBTU/hr)	28,476	11,652	28,476	28,476	11,652	11,652	28,476	11,652
		Other (kBTU/hr)	29,436	29,436	28,555	23,805	23,805	59,127	165,113	29,436
		Total Load	101,999	71,388	106,408	92,318	81,503	93,300	222,545	69,575
		CCS A (gpm)	5,850	3,330	6,650	6,200	4,560	1,810	2,900	3,190
		CCS B (gpm)	3,190	3,190	3,190	3,190	3,190	3,190	3,190	3,190
		Other (gpm)	4,158	4,158	4,048	3,690	3,690	6,750	10,852	4,158
		Total Flow	13,198	10,678	13,888	13,080	11,440	11,750	16,942	10,538

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ERCW Train A Heat Loads and Flows with LOOP and Loss of Train B (sheet 1 of 4)

Unit 2 Operational Modes			Unit 1 Operational Modes							
	Op Mode	**ERCW Loads and Flows**	**Startup**	**Power**	**Hot Shutdown**	**Cold Shutdown**	**Initial Refueling**	**Safety Injection**	**LOCA Recirc**	**Hot Standby**
	Startup	CCS A (kBTU/hr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CCS B (kBTU/hr)								
		Other (kBTU/hr)								
		Total Load								
		CCS A (gpm)								
		CCS B (gpm)								
		Other (gpm)								
		Total Flow								
	Power	CCS A (kBTU/hr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CCS B (kBTU/hr)								
		Other (kBTU/hr)								
		Total Load								
		CCS A (gpm)								
		CCS B (gpm)								
		Other (gpm)								
		Total Flow								

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ERCW Train A Heat Loads and Flows with LOOP and Loss of Train B (sheet 2 of 4)

Unit 2 Operational Modes			Unit 1 Operational Modes							
	Op Mode	**ERCW Loads and Flows**	**Startup**	**Power**	**Hot Shutdown**	**Cold Shutdown**	**Initial Refueling**	**Safety Injection**	**LOCA Recirc**	**Hot Standby**
	Hot Shutdown	CCS A (kBTU/hr)	N/A	N/A	N/A	93,230	74,066	17,721	N/A	25,757
		CCS B (kBTU/hr)				92,479	92,479	92,479		92,479
		Other (kBTU/hr)				51,648	51,648	55,517		55,517
		Total Load				237,357	218,193	165,716		173,752
		CCS A (gpm)				5,650	5,000	1,430		2,740
		CCS B (gpm)				6,900	6,900	6,900		6,900
		Other (gpm)				6,828	6,828	7,068		7,076
		Total Flow				19,378	18,728	15,398		16,716
	Cold Shutdown	CCS A (kBTU/hr)	N/A	N/A	92,479	93,230	74,066	17,721	56,221	25,757
		CCS B (kBTU/hr)			93,230	76,407	76,407	76,407	93,230	76,407
		Other (kBTU/hr)			51,648	47,779	47,779	51,648	159,817	51,648
		Total Load			237,357	217,416	198,252	145,775	309,267	153,811
		CCS A (gpm)			6,900	5,650	5,000	1,430	4,400	2,740
		CCS B (gpm)			5,850	5,850	5,850	5,850	5,850	5,850
		Other (gpm)			6,828	6,580	6,580	6,820	11,188	6,828
		Total Flow			19,578	18,080	17,430	14,100	21,438	15,418

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ERCW Train A Heat Loads and Flows with LOOP and Loss of Train B (sheet 3 of 4)

Unit 2 Operational Modes			Unit 1 Operational Modes							
	Op Mode	**ERCW Loads and Flows**	**Startup**	**Power**	**Hot Shutdown**	**Cold Shutdown**	**Initial Refueling**	**Safety Injection**	**LOCA Recirc**	**Hot Standby**
	Initial Refueling	CCS A (kBTU/hr)	N/A	N/A	92,479	76,407	74,066	17,721	56,221	8,934
		CCS B (kBTU/hr)			74,066	74,066	57,243	57,243	74,066	74,066
		Other (kBTU/hr)			51,648	47,779	47,779	51,648	159,817	51,648
		Total Load			218,193	198,252	179,088	126,611	290,103	134,647
		CCS A (gpm)			6,900	5,650	5,000	1,430	4,400	2,740
		CCS B (gpm)			5,000	5,000	5,000	5,000	5,000	5,000
		Other (gpm)			6,828	6,580	6,580	6,820	11,188	6,828
		Total Flow			18,728	17,230	16,580	13,250	20,588	14,568
	Safety Injection	CCS A (kBTU/hr)	N/A	N/A	92,479	76,407	74,066	N/A	N/A	8,934
		CCS B (kBTU/hr)			17,469	17,469	646			17,469
		Other (kBTU/hr)			55,517	51,648	51,648			55,517
		Total Load			165,464	145,523	126,359			81,919
		CCS A (gpm)			6,900	5,650	5,000			2,740
		CCS B (gpm)			1,430	1,430	1,430			1,430
		Other (gpm)			7,068	6,820	6,820			7,068
		Total Flow			15,398	13,900	13,250			11,238

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ERCW Train A Heat Loads and Flows with LOOP and Loss of Train B (sheet 4 of 4)

Unit 2 Operational Modes			Unit 1 Operational Modes							
	Op Mode	**ERCW Loads and Flows**	**Startup**	**Power**	**Hot Shutdown**	**Cold Shutdown**	**Initial Refueling**	**Safety Injection**	**LOCA Recirc**	**Hot Standby**
	LOCA Recirc	CCS A (kBTU/hr)	N/A	N/A	N/A	93,230	74,066	N/A	N/A	25,757
		CCS B (kBTU/hr)				56,104	56,104			56,104
		Other (kBTU/hr)				159,817	159,817			163,685
		Total Load				309,150	289,986			245,546
		CCS A (gpm)				5,650	5,000			2,740
		CCS B (gpm)				4,400	4,400			4,400
		Other (gpm)				11,188	11,188			11,436
		Total Flow				21,238	20,588			18,576
	Hot Standby	CCS A (kBTU/hr)	N/A	N/A	92,479	93,230	74,066	17,721	56,221	25,757
		CCS B (kBTU/hr)			25,892	9,069	9,069	9,069	25,892	9,069
		Other (kBTU/hr)			55,517	51,648	51,648	55,517	163,685	55,517
		Total Load			173,888	153,947	134,783	82,306	245,798	90,342
		CCS A (gpm)			6,900	5,650	5,000	1,430	4,400	2,740
		CCS B (gpm)			2,740	2,740	2,740	2,740	2,740	2,740
		Other (gpm)			7,076	6,828	6,828	7,068	11,436	7,076
		Total Flow			16,716	15,218	14,568	11,238	18,576	12,556

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ERCW Train B Heat Loads and Flows with Offsite Power Available (sheet 1 of 3)

Unit 2 Operational Modes			Unit 1 Operational Modes							
	Op Mode	**ERCW Loads and Flows**	**Startup**	**Power**	**Hot Shutdown**	**Cold Shutdown**	**Initial Refueling**	**Safety Injection**	**LOCA Recirc**	**Hot Standby**
	Startup	CCS C (kBTU/hr)	19,934	19,833	44,966	37,034	28,684	19,994	27,794	19,833
		Other (kBTU/hr)	29,444	29,444	29,444	23,814	23,814	59,136	165,121	29,444
		Total Load	49,378	49,277	74,410	60,848	52,498	79,130	192,915	49,277
		CCS C (gpm)	1,630	1,620	6,000	3,870	3,220	1,630	2,630	1,620
		Other (gpm)	3,977	3,977	3,855	3,497	3,497	6,557	10,659	3,977
		Total Flow	5,607	5,597	9,855	7,367	6,717	8,187	13,289	5,597
	Power	CCS C (kBTU/hr)	19,834	134	44,866	36,934	28,584	294	27,694	134
		Other (kBTU/hr)	29,493	29,493	29,493	23,863	23,863	59,185	165,170	29,493
		Total Load	49,327	29,627	74,359	60,797	52,447	59,479	192,864	29,627
		CCS C (gpm)	1,620	48	6,000	3,860	4,040	24	2,620	28
		Other (gpm)	3,987	3,987	3,865	3,507	3,507	6,567	10,669	3,987
		Total Flow	5,607	4,035	9,865	7,367	7,547	6,591	13,289	4,015
	Hot Shutdown	CCS C (kBTU/hr)	44,966	44,866	N/A	44,966	44,966	45,027	N/A	44,866
		Other (kBTU/hr)	28,555	28,555		22,925	22,925	58,246		28,555
		Total Load	73,521	73,421		67,891	67,891	103,273		73,421
		CCS C (gpm)	6,000	6,000		6,000	6,000	6,000		6,000
		Other (gpm)	3,877	3,877		3,397	3,397	6,457		3,877
		Total Flow	9,877	9,877		9,397	9,397	12,457		9,877

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ERCW Train B Heat Loads and Flows with Offsite Power Available (sheet 2 of 3)

Unit 2 Operational Modes			Unit 1 Operational Modes							
	Op Mode	**ERCW Loads and Flows**	**Startup**	**Power**	**Hot Shutdown**	**Cold Shutdown**	**Initial Refueling**	**Safety Injection**	**LOCA Recirc**	**Hot Standby**
	Cold Shutdown	CCS C (kBTU/hr)	37,034	36,934	44,966	37,034	37,034	37,094	27,794	36,934
		Other (kBTU/hr)	23,805	23,805	23,805	18,175	18,175	53,497	159,483	23,805
		Total Load	60,839	60,739	68,771	55,209	55,209	90,591	187,277	60,739
		CCS C (gpm)	3,870	3,860	6,000	3,870	3,220	3,870	2,630	3,860
		Other (gpm)	3,519	3,519	3,397	3,039	3,039	6,099	10,201	3,519
		Total Flow	7,389	7,379	9,397	6,909	6,259	9,969	12,831	7,379
	Initial Refueling	CCS C (kBTU/hr)	28,684	28,584	44,966	37,034	28,684	28,744	27,794	28,584
		Other (kBTU/hr)	23,805	23,805	23,805	18,175	18,175	53,497	159,483	23,805
		Total Load	52,489	52,389	68,771	55,209	46,859	82,241	187,277	52,389
		CCS C (gpm)	3,220	3,210	6,000	3,870	3,220	3,220	2,630	3,210
		Other (gpm)	3,519	3,519	3,397	3,039	3,039	6,099	10,201	3,519
		Total Flow	6,739	6,729	9,397	6,909	6,259	9,319	12,831	6,729
	Safety Injection	CCS C (kBTU/hr)	19,994	294	45,027	37,094	28,744	N/A	N/A	294
		Other (kBTU/hr)	30,191	30,191	30,191	24,561	24,561			30,191
		Total Load	50,185	30,485	75,218	61,655	53,305			30,485
		CCS C (gpm)	1,630	60	6,000	3,910	3,220			86
		Other (gpm)	6,579	6,579	6,457	6,099	6,099			6,579
		Total Flow	8,209	6,639	12,457	10,009	9,319			6,665

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ERCW Train B Heat Loads and Flows with Offsite Power Available (sheet 3 of 3)

Unit 2 Operational Modes			Unit 1 Operational Modes							
	Op Mode	**ERCW Loads and Flows**	**Startup**	**Power**	**Hot Shutdown**	**Cold Shutdown**	**Initial Refueling**	**Safety Injection**	**LOCA Recirc**	**Hot Standby**
	LOCA Recirc	CCS C (kBTU/hr)	27,794	27,694	N/A	27,794	27,794	N/A	N/A	27,694
		Other (kBTU/hr)	136,177	136,177		130,547	130,547			136,177
		Total Load	163,971	163,871		158,341	158,341			163,871
		CCS C (gpm)	2,630	2,620		2,630	2,630			2,620
		Other (gpm)	10,681	10,681		10,201	10,201			10,681
		Total Flow	13,311	13,301		12,831	12,831			13,301
	Hot Standby	CCS C (kBTU/hr)	19,834	134	44,866	36,934	28,584	294	27,694	134
		Other (kBTU/hr)	29,493	29,493	29,493	23,863	23,863	59,185	165,170	29,493
		Total Load	49,327	29,627	74,359	60,797	52,447	59,479	192,864	29,627
		CCS C (gpm)	1,620	28	6,000	3,890	4,040	24	3,150	28
		Other (gpm)	3,987	3,987	3,865	3,507	3,507	6,567	10,669	3,987
		Total Flow	5,607	4,015	9,865	7,397	7,547	6,591	13,819	4,015

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ERCW Train B Heat Loads and Flows with LOOP and Loss of Train A (sheet 1 of 4)

			Unit 1 Operational Modes							
Unit 2 Operational Modes	Op Mode	ERCW Loads and Flows	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
	Startup	CCS A (kBTU/hr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CCS C (kBTU/hr)								
		Other (kBTU/hr)								
		Total Load								
		CCS A (gpm)								
		CCS C (gpm)								
		Other (gpm)								
		Total Flow								
	Power	CCS A (kBTU/hr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CCS C (kBTU/hr)								
		Other (kBTU/hr)								
		Total Load								
		CCS A (gpm)								
		CCS C (gpm)								
		Other (gpm)								
		Total Flow								

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ERCW Train B Heat Loads and Flows with LOOP and Loss of Train A (sheet 2 of 4)

Unit 2 Operational Modes			Unit 1 Operational Modes							
	Op Mode	ERCW Loads and Flows	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
	Hot Shutdown	CCS A (kBTU/hr)	N/A	N/A	N/A	16,823	16,823	16,823	N/A	16,823
		CCS C (kBTU/hr)				163,134	146,434	89,795		89,634
		Other (kBTU/hr)				51,705	51,705	55,574		55,574
		Total Load				231,662	214,962	162,192		162,031
		CCS A (gpm)				1,340	1,340	1,340		1,340
		CCS C (gpm)				10,700	10,700	9,500		9,750
		Other (gpm)				6,828	6,828	7,068		7,088
		Total Flow				18,868	18,868	17,908		18,178
	Cold Shutdown	CCS A (kBTU/hr)	N/A	N/A	16,823	16,823	16,823	16,823	16,823	16,823
		CCS C (kBTU/hr)			163,134	147,269	130,569	73,929	128,729	73,769
		Other (kBTU/hr)			51,705	47,837	47,837	51,705	159,874	51,705
		Total Load			231,662	211,928	195,228	142,458	305,427	142,297
		CCS A (gpm)			1,340	1,340	1,340	1,340	1,340	1,340
		CCS C (gpm)			10,700	10,000	10,600	6,030	8,800	6,020
		Other (gpm)			6,828	6,580	6,580	6,820	11,188	6,840
		Total Flow			18,868	17,920	18,520	14,190	21,328	14,200

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ERCW Train B Heat Loads and Flows with LOOP and Loss of Train A (sheet 3 of 4)

Unit 2 Operational Modes			Unit 1 Operational Modes							
	Op Mode	**ERCW Loads and Flows**	**Startup**	**Power**	**Hot Shutdown**	**Cold Shutdown**	**Initial Refueling**	**Safety Injection**	**LOCA Recirc**	**Hot Standby**
	Initial Refueling	CCS A (kBTU/hr)	N/A	N/A	16,823	16,823	16,823	16,823	16,823	16,823
		CCS C (kBTU/hr)			146,434	130,569	113,869	57,229	112,029	57,069
		Other (kBTU/hr)			51,705	47,837	47,837	51,705	159,874	51,705
		Total Load			214,962	195,228	178,528	125,758	288,727	125,597
		CCS A (gpm)			1,340	1,340	1,340	1,340	1,340	1,340
		CCS C (gpm)			10,700	10,600	10,300	6,300.0	8,800	6,850
		Other (gpm)			6,828	6,580	6,580	6,820	11,188	6,840
		Total Flow			18,868	18,520	18,220	14,460	21,328	15,030
	Safety Injection	CCS A (kBTU/hr)	N/A	N/A	16,823	16,823	16,823	N/A	N/A	16,823
		CCS C (kBTU/hr)			89,795	73,929	57,229			429
		Other (kBTU/hr)			55,574	51,705	51,705			55,574
		Total Load			162,192	142,458	125,758			72,827
		CCS A (gpm)			1,340	1,340	1,340			1,340
		CCS C (gpm)			9,500	6,030	6,030			120
		Other (gpm)			7,068	6,820	6,820			7,080
		Total Flow			17,908	14,190	14,460			8,540

ENCLOSURE 5

Summary Heat Load and Flow Tables for RAI 9.2.1 - ERCW - 3.

Tennessee Valley Authority - Watts Bar Nuclear Plant - Unit 2, Docket No. 50-391

ERCW Train B Heat Loads and Flows with LOOP and Loss of Train A (sheet 4 of 4)

Unit 2 Operational Modes			Unit 1 Operational Modes							
	Op Mode	ERCW Loads and Flows	Startup	Power	Hot Shutdown	Cold Shutdown	Initial Refueling	Safety Injection	LOCA Recirc	Hot Standby
	LOCA Recirc	CCS A (kBTU/hr)	N/A	N/A	N/A	16,823	16,823	N/A	N/A	16,823
		CCS C (kBTU/hr)				120,379	112,029			55,229
		Other (kBTU/hr)				159,874	159,874			163,743
		Total Load				297,077	288,727			235,795
		CCS A (gpm)				1,340	1,340			1,340
		CCS C (gpm)				7,125	7,125			4,500
		Other (gpm)				11,188	11,188			11,448
		Total Flow				19,653	19,653			17,288
	Hot Standby	CCS A (kBTU/hr)	N/A	N/A	16,823	16,823	16,823	16,823	16,823	16,823
		CCS C (kBTU/hr)			89,734	73,869	57,169	529	55,329	369
		Other (kBTU/hr)			55,574	51,705	51,705	55,574	163,743	55,574
		Total Load			162,131	142,397	125,697	72,927	235,895	72,766
		CCS A (gpm)			1,340	1,340	1,340	1,340	1,340	1,340
		CCS C (gpm)			9,750	6,020	6,850	110	4,510	75
		Other (gpm)			7,076	6,828	6,828	7,068	11,436	7,088
		Total Flow			18,166	14,188	15,018	8,518	17,286	8,503