



Tennessee Valley Authority, Post Office Box 2000, Soddy Daisy, Tennessee 37384-2000

January 24, 2020

State of Tennessee
Department of Environment and Conservation
Division of Water Pollution Control
Enforcement & Compliance Section
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243

Dear Ms. Angela Hall:

TENNESSEE VALLEY AUTHORITY (TVA) – SEQUOYAH NUCLEAR PLANT (SQN) - NPDES
PERMIT NO. TN0026450 – CY 2019 BIOCIDES/CORROSION TREATMENT PLAN (B/CTP)
ANNUAL REPORT

Enclosed is a copy of the CY 2019 B/CTP Annual report for SQN. Flogard MS 6237 was not added during CY 2019. All treatments in 2019 were conducted in accordance with the approved B/CTP.

If you have any questions or need additional information, please contact Millicent Garland at (423) 843-6714 or by e-mail at mrmoore@tva.gov of Sequoyah's Environmental staff.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Matthew Rasmussen
Site Vice President
Sequoyah Nuclear Plant

Enclosures
cc (Enclosures):

Mr. Vojin Janjić
State of Tennessee
Dept. of Environment and Conservation
Division of Water Pollution Control
6th Floor, L & C Annex
401 Church Street
Nashville, Tennessee 37243-1534

Chattanooga Environmental Field Office
Division of Water Pollution Control
State Office Building, Suite 550
540 McCallie Avenue
Chattanooga, Tennessee 37402-2013

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

Spectrus CT1300

Month	Quantity in Pounds (lbs/day)			Duration in Hours (hrs/day)	Analytical Results mass balance calculations (mg/L)			# of Samples	Days in Service
	Maximum	Average	Limit		Maximum	Average	Limit		
January	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-
April	320.45	240.33	855	16.00	0.0330	0.0330	0.05	2	2
May	483.18	322.12	855	15.50	0.0332	0.0332	0.05	6	6
June	483.18	295.31	855	15.17	0.0332	0.0332	0.05	8	8
July	320.45	215.30	855	16.00	0.0330	0.0330	0.05	4	4
August	483.18	322.12	855	24.00	0.0332	0.0332	0.05	6	6
September	483.18	266.77	855	24.00	0.0332	0.0331	0.05	7	7
October	483.18	308.70	855	24.00	0.0332	0.0332	0.05	3	3
November	483.18	322.12	855	15.50	0.0332	0.0332	0.05	3	3
December	220.31	185.26	855	11.00	0.0343	0.0343	0.05	4	4
Jan. - Dec.								43	43

Per the B/CTP approval: "Whole Effluent toxicity testing (biomonitoring) of Outfall 101 and Outfall 110 shall be undertaken once per year when non-oxidizing biocides are being used."

Outfall 101: Toxicity was sampled August 4 - August 9, 2019, during the Spectrus CT1300 treatment.

Test Results: *Pimephales promelas*: IC25 >100%

Ceriodaphnia dubia: IC25 > 100%

Outfall 110: There has been no discharge from Outfall 110 January - December 2019.

Spectrus BD 1500

Month	Quantity in Pounds (lbs/day)			Duration in Hours (hrs/day)	Analytical Results mass balance calculations (mg/L)			# of Samples	Days in Service
	Maximum	Average	Limit		Maximum	Average	Limit		
January	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-
April	42.66	36.97	50	0.50	0.047	0.047	2.00	5	5
May	42.66	37.92	50	0.50	0.047	0.047	2.00	12	12
June	42.66	38.78	50	0.50	0.047	0.047	2.00	11	11
July	42.66	42.66	50	0.50	0.047	0.047	2.00	14	14
August	42.66	36.10	50	0.50	0.047	0.047	2.00	13	13
September	42.66	35.55	50	0.50	0.047	0.047	2.00	12	12
October	42.66	38.28	50	0.50	0.084	0.064	2.00	13	13
November	42.66	29.86	50	0.50	0.084	0.084	2.00	10	10
December	42.66	31.03	50	0.50	0.049	0.049	2.00	11	11
Jan. - Dec.								101	101

Per the B/CTP approval: Spectrus BD1500 is a surfactant that is injected into the ERCW and RCW systems for approximately 30 minutes prior initiating chlorination to enhance the effectiveness of the chlorination.

2019 Biocide/Corrosion Treatment Plan Annual Report

Towerbrom 960

Month	Quantity in Pounds (lbs/day)			Duration in Hours (hrs/day)	Analytical Results mass balance calculation (mg/L)			# of samples	Days in Service
	Maximum	Average (based on days in service)	Limit		Maximum	Average	Limit		
January	200	150	1425	4.00	0.0326	0.0195	0.10	10	10
February	200	200	1425	4.00	0.0317	0.0206	0.10	8	8
March	200	180	1425	4.00	0.0248	0.0182	0.10	10	10
April	200	156	1425	4.00	0.0232	0.0139	0.10	17	17
May	200	166	1425	4.00	0.0298	0.0194	0.10	19	19
June	225	174	1425	4.00	0.0258	0.0162	0.10	20	20
July	225	215	1425	4.00	0.0315	0.0214	0.10	22	22
August	225	189	1425	4.00	0.0305	0.0180	0.10	22	22
September	225	175	1425	4.00	0.0378	0.0225	0.10	20	20
October	200	185	1425	4.00	0.0347	0.0187	0.10	31	20
November	200	120	1425	4.00	0.0392	0.0213	0.10	11	11
December	125	100	1425	4.00	0.0288	0.0146	0.10	11	11
Jan. - Dec.								201	190

Per the B/CTP approval: "Whole Effluent toxicity testing (biomonitoring) of Outfall 101 and Outall 110 shall be undertaken once per year when oxidizing biocides are being used."

Outfall 101: Toxicity was sampled April 28 - May 3, 2019.

Test Results: *Pimephales promelas*: IC25 >100%

Ceriodaphnia dubia: IC25 > 100%

Outfall 110: There has been no discharge from Outfall 110 January - December 2019.

Flogard MS6236

Month	Quantity in Pounds (lbs/day)			Duration in Hours (hrs/day)	Analytical Results mass balance calculations (mg/L)			# of samples	Days in Service
	Maximum	Average	Limit		Maximum	Average	Limit		
January	208.80	208.80	2275	12.00	0.0296	0.0296	0.2	11	11
February	417.60	227.78	2275	24.00	0.0296	0.0296	0.2	11	11
March	417.60	278.40	2275	24.00	0.0296	0.0296	0.2	12	12
April	417.00	234.90	2275	12.00	0.0285	0.0285	0.2	8	8
May	417.60	292.32	2275	24.00	0.0285	0.0285	0.2	5	5
June	-	-	-	-	-	-	-	-	-
July	417.60	238.63	2275	24.00	0.0285	0.0285	0.2	14	14
August	730.80	454.14	2275	24.00	0.0285	0.0285	0.2	20	20
September	730.00	342.20	2275	24.00	0.0285	0.0285	0.2	18	18
October	730.80	493.00	2275	24.00	0.0513	0.0361	0.2	18	18
November	313.20	286.13	2275	18.00	0.0321	0.0321	0.2	9	9
December	321.90	254.04	2275	18.00	0.0296	0.0296	0.2	10	10
Jan. - Dec.								136	136

Per the B/CTP approval: "Flogard MS6236 is injected into the RCW system continuously, except during periods of other chemical injection due to common injection lines. Flogard MS6236 is injected into the ERCW Train A & B system intermittently."