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ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DISCHARGE MONITORING REPORT
Tennessee Valley Authority
BROWNS FERRY NUCLEAR PLANT

DSN 101 - Diffuser Discharge Structure

MONTH December 1987

NPDES # AL0022080

PARAM	FLOW	pH	Amb. River Temperature	Downstream River Temp.	D.S. River Temp. >92.0	Downstream River Temp.	Temperature Rise
AVG	-	6.0	24hr Av Max	24hr Av Max	---/	Hourly Max	24hr Av Max
MAX	-	9.0	---	90.0	6 Hrly Rdgs	93.0	10.0
UNITS	MGD	s.u.	---	F	# Rdgs >6	F	F
FREQ.	Cont.	1/wk	Continuous	Continuous	Hourly	Continuous	Continuous
1	633.6	8.2	53.8	53.7	0	53.3	0.2
2	633.6		52.4	52.6	0	51.9	0.4
3	633.6		51.3	51.3	0	51.8	0.0
4	633.6		51.6	51.7	0	52.0	0.2
5	633.6		51.3	51.3	0	50.8	0.5
6	633.6		49.8	50.3	0	50.0	0.7
7	633.6		49.1	49.6	0	49.3	0.6
8	633.6	8.2	50.2	47.9	0	49.6	-1.0
9	633.6		51.6	50.1	0	51.0	-1.4
10	633.6		52.1	51.5	0	52.2	-0.6
11	633.6		52.1	51.8	0	52.0	-0.1
12	633.6		52.2	52.0	0	52.2	-0.1
13	633.6		52.2	51.9	0	51.6	-0.1
14	633.6		51.7	51.6	0	51.4	0.0
15	633.6	8.0	52.2	51.5	0	51.8	-0.4
16	633.6		51.9	51.3	0	50.7	0.4
17	633.6		47.4	47.1	0	47.3	0.4
18	633.6		47.2	47.5	0	47.7	1.0
19	633.6		47.6	47.6	0	48.1	0.4
20	633.6		49.3	47.8	0	48.8	0.0
21	633.6		49.9	49.0	0	49.5	-0.8
22	633.6	8.1	49.8	49.4	0	49.5	-0.1
23	633.6		49.8	49.4	0	50.2	-0.1
24	633.6		49.8	49.5	0	49.3	-0.1
25	633.6		51.3	50.4	0	51.8	-0.9
26	633.6		52.4	51.9	0	52.4	-0.8
27	633.6		52.3	51.9	0	52.0	-0.5
28	633.6		52.5	51.8	0	52.2	-0.5
29	633.6		52.3	51.7	0	50.8	-0.2
30	633.6	7.8	50.0	49.6	0	49.4	0.0
31	633.6		48.7	48.6	0	49.1	0.0
MAX	633.6	8.2	53.8	53.7	0	53.3	1.0
AVG	633.6		50.8	50.4	0	50.6	-0.1
MIN		7.8					

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Signature of Responsible Official Alvan Bruch, Acting *Date:* 1-26-88

For Ralph H. Brooks

IE48
0/1

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DISCHARGE MONITORING REPORT
Tennessee Valley Authority
BROWNS FERRY NUCLEAR PLANT
DSN 102 - Sedimentation Pond

MONTH December 1987 NPDES # AL0022080

PARAM	FLOW	pH	O&G	TSS	COMMENTS
AVG	----	MIN. 6.0	15	30	
MAX	----	9.0	20	100	
UNITS	MGD	s.u.	mg/l	mg/l	
FREQ.	1/RELEASE	1/RELEASE	1/RELEASE	2/RELEASE	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28	0.876000	8.8	< 5	8	
29				7	
30					
31					
MAX	0.876000	8.8	< 5	8	
AVG	0.876000		< 5	8	
MIN		8.8			
TOTAL	0.876000				

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Signature of Responsible Official _____ *Date:* _____

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DISCHARGE MONITORING REPORT
Tennessee Valley Authority
BROWNS FERRY NUCLEAR PLANT

DSN 103 - Unit 1,2,3 Turbine
Station Sump

MONTH December 1987 NPDES # AL0022080

PARAM	FLOW	O&G	TSS	COMMENTS
AVG	----	15	30	
MAX	----	20	100	
UNITS	MGD	mg/l	mg/l	
FREQ.	1/WEEK	1/WEEK	1/WEEK	
1				
2				
3				
4	0.504000	< 5	6	
5				
6				
7				
8				
9				
10				
11	0.460800	< 5	4	
12				
13				
14				
15				
16				
17				
18	0.841000	< 5	4	
19				
20				
21				
22				
23	0.648000	< 5	3	
24				
25				
26				
27				
28				
29				
30				
31	0.527000	< 5	6	
MAX	0.841000	< 5	6	
AVG	0.596160	< 5	5	

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Signature of Responsible Official _____ *Date:* _____

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DISCHARGE MONITORING REPORT
Tennessee Valley Authority
BROWNS FERRY NUCLEAR PLANT

DSN 104 - Liquid Radwaste

MONTH December 1987 NPDES # AL0022080

PARAM	FLOW	O&G	TSS	LDT/TSS	LDT/O&G	Copper	Iron
AVG		15	30	30	15		
MAX		20	100	100	20	1.0	1.0
UNITS	MGD	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
FREQ.	1/BATCH	2/wk	2/wk	1/BATCH	1/BATCH	1/BATCH	1/BATCH
1							
2	0.023989						
3	0.024484	< 5	1				
4	0.022305						
5	0.026734						
6	0.024484						
7	0.026852	< 5	< 1				
8							
9	0.034019			24	5		
10							
11	0.030708	< 5	1				
12							
13	0.030271						
14	0.031144	< 5	< 1				
15							
16	0.031376						
17	0.031227	< 5	< 1				
18							
19	0.065592						
20	0.031227						
21	0.024299	< 5	< 1				
22	0.022621						
23	0.020961						
24	0.027268	5	< 1				
25							
26	0.031061						
27	0.030271						
28	0.023934	< 5	< 1				
29	0.030882						
30							
31	0.046156	< 5	< 1				
MAX	0.065592	< 5	< 1	24	5		
AVG	0.030091	< 5	< 1	24	5		

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ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DISCHARGE MONITORING REPORT
Tennessee Valley Authority
BROWNS FERRY NUCLEAR PLANT
DSN 105 - Residual Heat Removal
Service Water

MONTH December 1987 NPDES # AL0022080

PARAM	FLOW	TEMP	COMMENTS
AVG	----		
MAX	----		
UNITS	MGD	°F	
FREQ.	1/WEEK	1/WEEK	
1			
2			
3			
4	NO FLOW		
5			
6			
7			
8			
9			
10			
11	NO FLOW		
12			
13			
14			
15			
16			
17			
18	NO FLOW		
19			
20			
21			
22			
23			
24			
25	NO FLOW		
26			
27			
28			
29			
30			
31			
MAX			
AVG			

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Signature of Responsible Official _____ *Date:* _____

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DISCHARGE MONITORING REPORT
Tennessee Valley Authority
BROWNS FERRY NUCLEAR PLANT

DSN 106 - Condenser Cooling Water
Station Sump

MONTH December 1987 NPDES # AL0022080

PARAM		FLOW	O&G	TSS	COMMENTS
AVG		----	15	30	
MAX		----	20	100	
UNITS		MGD	mg/l	mg/l	
FREQ.		1/WEEK	1/WEEK	1/WEEK	
	1				DISCHARGE ROUTED TO SEDIMENTATION
	2				POND FOR ENTIRE REPORTING PERIOD.
	3	0.000000			
	4				
	5				
	6				
	7				
	8				
	9				
	10	0.000000			
	11				
	12				
	13				
	14				
	15				
	16				
	17	0.000000			
	18				
	19				
	20				
	21				
	22				
	23				
	24	0.000000			
	25				
	26				
	27				
	28				
	29				
	30				
	31	0.000000			
MAX		0.000000			
AVG		0.000000			

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ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DISCHARGE MONITORING REPORT
Tennessee Valley Authority
BROWNS FERRY NUCLEAR PLANT

DSN 107 - Unit 3 Control Bldg.
Drain

MONTH December 1987 NPDES # AL0022080

PARAM	FLOW	O&G	TSS	COMMENTS
AVG	----	15	30	
MAX	----	20	100	
UNITS	MGD	mg/l	mg/l	
FREQ.	1/WEEK	1/WEEK	1/WEEK	
1				
2	0.001567	5	3	
3				
4				
5				
6				
7				
8				
9	0.000913	< 5	4	
10				
11				
12				
13				
14				
15				
16	0.001900	6	2	
17				
18				
19				
20				
21				
22	0.000775	< 5	2	
23				
24				
25				
26				
27				
28				
29				
30	0.001000	< 5	3	
31				
MAX	0.001900	6	4	
AVG	0.001231	< 5	3	

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ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DISCHARGE MONITORING REPORT
Tennessee Valley Authority
BROWNS FERRY NUCLEAR PLANT

DSN 108 - Diesel Bldg. Sump
Units 1 & 2

MONTH December 1987 NPDES # AL0022080

PARAM	FLOW	O&G	TSS	COMMENTS
AVG	----	15	30	
MAX	----	20	100	
UNITS	MGD	mg/l	mg/l	
FREQ.	1/WEEK	1/WEEK	1/WEEK	
1				
2				
3	NO RELEASE			
4				
5				
6				
7				
8				
9				
10	NO RELEASE			
11				
12				
13				
14				
15				
16				
17	NO RELEASE			
18				
19				
20				
21				
22	NO RELEASE			
23				
24				
25				
26				
27				
28				
29				
30				
31	NO RELEASE			
MAX				
AVG	NO RELEASE			

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ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DISCHARGE MONITORING REPORT
Tennessee Valley Authority
BROWNS FERRY NUCLEAR PLANT

DSN 109 - Diesel Bldg. Sump
Unit 3

MONTH December 1987 NPDES # AL0022080

PARAM	FLOW	O&G	TSS	COMMENTS
AVG	----	15	30	
MAX	----	20	100	
UNITS	MGD	mg/l	mg/l	
FREQ.	1/WEEK	1/WEEK	1/WEEK	
1				
2				
3	NO RELEASE			
4				
5				
6				
7				
8				
9				
10	NO RELEASE			
11				
12				
13				
14				
15				
16				
17	NO RELEASE			
18				
19				
20				
21				
22	NO RELEASE			
23				
24				
25				
26				
27				
28				
29				
30				
31	NO RELEASE			
MAX				
AVG	NO RELEASE			

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ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DISCHARGE MONITORING REPORT
Tennessee Valley Authority
BROWNS FERRY NUCLEAR PLANT

DSN 110 - Unit 1 & 2 Office
Bldg. Drain

MONTH December 1987 NPDES # AL0022080

PARAM	FLOW	O&G	TSS	COMMENTS
AVG	----	15	30	
MAX	----	20	100	
UNITS	MGD	mg/l	mg/l	
FREQ.	1/WEEK	1/WEEK	1/WEEK	
1				
2	0.000369	10	37	TSS RESAMPLES: 7 79 12 8
3				
4				
5				
6				
7				
8				
9	0.000507	8	16	
10				
11				
12				
13				
14				
15				
16	0.000590	12	88	TSS RESAMPLES: 17 33 20
17			29	TSS RESAMPLE: 59
18			14	
19			69	
20			91	
21			188	TSS RESAMPLE: 40
22	0.000354	10	71	
23			30	
24			41	
25			117	
26			46	
27			457	TSS RESAMPLE: 16
28			30	
29			25	
30	0.001000	< 5	27	
31			48	
MAX	0.001000	12	457	
AVG	0.000564	< 9	61	

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ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DISCHARGE MONITORING REPORT
Tennessee Valley Authority
BROWNS FERRY NUCLEAR PLANT

DSN 111 - Sewage Treatment Lagoon

MONTH December 1987 NPDES # AL0022080

PARAM	FLOW	TSS	BOD5	COMMENTS
AVG	----	90	30	
MAX	----	----	45	
UNITS	MGD	mg/l	mg/l	
FREQ.	5/WEEK	2/MONTH	2/MONTH	
1	0.031248			
2	0.039600			
3	0.049248			
4	0.049248			
5				
6				
7	0.049248	31	50	
8	0.060192			
9	0.049248			
10	0.049248			
11	0.049248			
12				
13				
14	0.039600	24	25	
15	0.049248			
16	0.039600			
17	0.049248			
18	0.039600			
19				
20				
21	0.039600	29	22	
22	0.039600			
23	0.049248			
24	0.049248			
25	0.039600			
26				
27				
28	0.049248	24	20	
29	0.049248			
30	0.049248			
31	0.049248			
MAX	0.060192	31	50	
AVG	0.046005	27	29	

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Signature of Responsible Official _____ *Date:* _____

Description of Discharge - DSN 110 - Units 1 & 2 Office Building Drain - The total suspended solids content exceeded the daily maximum 100 mg/l. The total suspended solids content of the discharge was 188 mg/l on December 21, 1987, 117 mg/l on December 25, and 457 mg/l on December 27.

Cause and Period of Noncompliance - The contents of the hot water generator in the control bay chiller room were discharged to the floor drain. This system was drained so that a maintenance request could be performed on the hot water recirculating pump and to repair the heater itself. The water drained from the heater was heavily contaminated with iron oxides (attracted to a magnet) from the system. The sampling frequency of this discharge was increased to once per day on December 16, 1987, to closely monitor the total suspended solids. The maximum periods of noncompliance were 2 days, 1 hour, 56 minutes for December 16, 2 days, 2 hours, 40 minutes on December 25, and 1 day, 10 hours, 55 minutes for December 27.

Steps Taken to Reduce, Eliminate, and Prevent Recurrence of Noncompliance Discharge - This noncompliance was discussed with the Shift Engineer that authorized the draining of this system to ensure that he was aware of the noncompliance. An immediate attention maintenance request was filed on January 5, 1988, to flush the floor drain in the control bay chiller room using demineralized water. The flushing was performed on January 11, 1988. Samples were taken before, during, and after the flushing. Corrosion inhibitors have been added to the system to minimize corrosion.

Description of Discharge - DSN 111 - Sewage Lagoon Discharge - BOD_5 exceeded the 7-day average maximum of 45 mg/l. The BOD_5 value for December 7, 1987, was 50 mg/l.

Cause and Period of Noncompliance - The specific cause of this noncompliance could not be determined. Operational sample data taken from December 7, 1987, to December 31, 1987, does not indicate any abnormalities with the sewage treatment system. The discharge cell had a dissolved oxygen content of 9.4 mg/l (10.5°C) and a pH of 7.5 on December 7, 1987. In addition, the discharge rate had been adjusted to maintain a relatively constant flow rate and prevented spikes of high flow that could result in a short circuit in the lagoon. These operational values are consistent with those obtained throughout the rest of the month when the discharge was in compliance. The maximum period of noncompliance was 14 days.

Steps taken to reduce, eliminate, and prevent recurrence of noncompliance discharge - Operational monitoring of dissolved oxygen and pH values of the sewage lagoon will continue. No changes in the operation of the lagoon will be made to address this noncompliance. Impending reductions in site population will result in reduced loading on the lagoon.