



DUKE POWER

March 27, 1991

Division of Environmental Management
Water Quality Section
Attention: Central Files
P.O. Box 27687
Raleigh, NC 27611

Subject: Duke Power Company
NPDES Monitoring Report for
McGuire Nuclear Station - NC0024392
File: MC-702.25

Dear Sir:

In accordance with Part II, C(2) of the above referenced NPDES permit, duplicate copies of the monthly monitoring report for February, 1991 are enclosed.

As reported to the Mooresville Regional Office of NCDEHNR on February 26, 1991, a visible foam was seen at the discharge of outfall 005. Since this occurrence, efforts to identify the exact source have only identified a probable source of the foam. There was an increase in the amount of cleaning done at the vehicle maintenance facility which may have lead to the increased discharge of foaming agents. All individuals involved with cleaning activities at the McGuire site have since been advised of the importance of the proper use of cleaning agents and the impact improper usage has on the operation of the wastewater treatment stems.

Please direct any correspondence or questions concerning the McGuire Nuclear Station NPDES Program to M. C. Griggs (704) 373-7080, Nuclear Environmental Compliance.

Very truly yours,

W. A. Haller, Manager
Nuclear Technical Services

MTK/1478

Attachments

EFFLUENT

NPDES PERMIT NO: NC0024392 DISCHARGE NO: 001 MONTH: February YEAR: 1991
 FACILITY NAME: Duke Power Company - McGuire Nuclear Station CLASS: II COUNTY: Mecklenburg
 OPERATOR IN RESPONSIBLE CHARGE (ORC): Mark E. Bridges GRADE: III
 CERTIFIED LABORATORY: Station Exempt/Central Lab ID 248

CHECK BLOCK IF ORC HAS CHANGED ☐

Mail original and one copy to:
 ATT: Central Files
 Division of Environmental Management
 NC Department of NRCD
 PO Box 27687
 Raleigh, North Carolina 27611

PERSON(S) COLLECTING SAMPLES: C.A. Bynum

I CERTIFY THAT THIS REPORT

IS ACCURATE AND COMPLETE TO

THE BEST OF MY KNOWLEDGE

x Mark E. Bridges

Signature of operator in responsible charge

DATE	TIME 2400 CLOCK	COMPOSITE TIME	50050		00011		50060		81313		TGE3D	
			FLOW	ENTER PARAMETER CODE ABOVE	ENTER PARAMETER CODE ABOVE	ENTER PARAMETER CODE ABOVE	ENTER PARAMETER CODE ABOVE	ENTER PARAMETER CODE ABOVE				
			EFF <input type="checkbox"/>	INF <input type="checkbox"/>	Temperature Fahrenheit	Total Residual Chlorine MG/L	Hydrazine MG/L	Acute Toxicity P-F				
			DAILY RATE									
			HRS	SGD	F°	MG/L	MG/L	P-F				
1	2400		2.5		68.5							
2	2400		2.5		65.7							
3	2400		2.5		66.8							
4	2400		2.5		68.2			P				
5	2400		2.5		68.4							
6	2400		2.5		68.4							
7	2400		2.5		68.0							
8	2400		2.5		73.4							
9	2400		2.5		71.2							
10	2400		2.5		70.5							
11	2400		2.4		70.0							
12	2400		2.4		61.3							
13	2400		2.5		61.2							
14	2400		2.5		64.6							
15	2400		2.5		67.6							
16	2400		2.5		67.1							
17	2400		2.5		66.0							
18	2400		2.5		66.4							
19	2400		2.5		67.6							
20	2400		2.5		57.7							
21	2400		2.5		59.9							
22	2400		2.5		63.7							
23	2400		2.5		65.3							
24	2400		2.5		68.5							
25	2400		2.5		68.0							
26	2400		2.5		69.6							
27	2400		2.5		68.5							
28	2400		2.5		67.1							
29												
30												
31												
Average			2.5		66.7							
Max.			2.5		73.4			P				
Min.			2.4		57.7							
Comp (C) / Grab (G)					C			C				
Monthly Limit												

Facility Status: (Please check one of the following)

All monthly averages and / or other limitation do meet permit monitoring requirements ☒ (Compliant)

All monthly averages and / or other limitation do not meet permit monitoring requirements ☐ (Noncompliant)

If the facility is noncompliant, please comment on corrective actions being taken in respect to equipment, operation, maintenance, etc. and a time table for improvements to be made.
(Attach additional sheets if necessary)

I certify that this Report is accurate and complete to the best of my knowledge:

W. E. Felt

Signature of Permittee

PARAMETER CODES

00010 Temperature	00356 Oil and Grease	00950 Dissolved Fluoride	01077 Silver	39516 PCBs
00065 Stream Stage	00600 Total Nitrogen	01002 Total Arsenic	01087 Total Vanadium	39941 Roundup
00076 Turbidity	00610 Ammonia Nitrogen	01027 Cadmium	01092 Zinc	50047 Max. flow during 24-hr. period
00300 Dissolved Oxygen	00625 Total Kjeldahl Nitrogen	01032 Hexavalent Chromium	01105 Total Aluminum	50046 Min. flow during 24-hr. period
00310 BOD ₅	00665 Total Phosphorous	01034 Chromium	01147 Total Selenium	50050 Flow
00340 COD	00720 Cyanide	01037 Total Cobalt	31504 Total Coliform	50060 Total Residual Chlorine
00400 pH	00745 Total Sulfide	01042 Copper	31614 Fecal Coliform, MPN, Tube	71880 Formaldehyde
00500 Total Solids	00927 Total Magnesium	01045 Total Iron	31616 Fecal Coliform	71900 Mercury
00530 TSS	00929 Total Sodium	01051 Lead	32730 Total Phenolics	81318 Ferrocyanides
00545 Settlesable Solids	00940 Total Chloride	01067 Nickel	38260 MBAS	85652 Time

The monthly average for fecal coliform is to be reported as a geometric MEAN.

If using alternate units for reporting data, please designate.

EFFLUENT

NPDES PERMIT NO: NC0024392 DISCHARGE NO: 002 MONTH: February YEAR: 1991
 FACILITY NAME: Duke Power Company - McGuire Nuclear Station CLASS: III COUNTY: Mecklenburg
 OPERATOR IN RESPONSIBLE CHARGE (ORC): Mark E. Bridges GRADE: III
 CERTIFIED LABORATORY: Station Exempt/Central Lab ID 248

CHECK BLOCK IF ORC HAS CHANGED ☐

Mail original and one copy to:
 ATT: Central Files
 Division of Environmental Management
 N.C. Department of NRCD
 P.O. Box 27617
 Raleigh, North Carolina 27611

PERSON(S) COLLECTING SAMPLES: C. A. Bynum

I CERTIFY THAT THIS REPORT
 IS ACCURATE AND COMPLETE TO
 THE BEST OF MY KNOWLEDGE.

x Mark E. Bridges
 Signature of operator in responsible charge

DATE	TIME 2400 CLOCK	COMPOSITE TIME	50850		50400		50650		50610		50530		50556		81313		50665		50600		38250		00945		01051		1AA30	
			FLOW	ENTER PARAMETER CODE ABOVE NAME AND UNITS BELOW	EFF	INF	DAILY RATE	pH	Total Residual Chlorine	Ammonia Nitrogen	Total Suspended Solids	Oil and Grease	Hydrazine	Total Phosphorous	Total Nitrogen	MBAS	Sulfate	Lead	Acute Toxicity									
		HRS	MGD	Unit	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	UG/L	P-P									
1																												
2																												
3																												
4	0920		0.013	7.9																								
5	0800		0.568	7.0			5.3	3.1	<0.1			0.12	8.29	0.1	3689	<300	P											
6	0810		0.622	7.3																								
7	0900		0.559																									
8																												
9																												
10	1120			8.4																								
11	0810		0.515	7.0																								
12	0810		0.147																									
13	1200			7.3																								
14	0900		0.536	7.1																								
15	0835		0.598	7.6																								
16	0915		0.601	7.8																								
17	1030		0.124																									
18																												
19	0900		0.038	7.0								0.148																
20	0820		0.579	7.1																								
21	0840		0.602	7.0																								
22	0830		0.019																									
23																												
24																												
25	0910		0.018	7.2								0.060																
26	0800		0.564	6.9																								
27	0835		0.595	7.6																								
28	0845		0.591	7.0																								
29																												
30																												
31																												
Average			0.406									<0.055																
Max.			0.622	8.4			5.3	3.1	<0.1		0.148	0.12	8.29	0.1	3689	<300	P											
Min.			0.013	6.9								<0.005																
Comp. C/ Grab(G)				G			G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Monthly Limit																												

Facility Status: (Please check one of the following)

All monthly averages and / or other limitation do meet permit monitoring requirements



(Compliant)

All monthly averages and / or other limitation do not meet permit monitoring requirements



(Noncompliant)

If the facility is noncompliant, please comment on corrective actions being taken in respect to equipment, operation, maintenance, etc. and a time table for improvements to be made.

(Attach additional sheets if necessary)

I certify that this Report is accurate and complete to the best of my knowledge:

W. H. Hite

Signature of Permittee

PARAMETER CODES

00010 Temperature	00556 Oil and Grease	00950 Dissolved Fluoride	01077 Silver	39516 PCBs
00063 Stream Stage	00600 Total Nitrogen	01002 Total Arsenic	01087 Total Vanadium	39941 Roundup
00076 Turbidity	00610 Ammonia Nitrogen	01027 Cadmium	01092 Zinc	50047 Max. flow during 24-hr. period
00300 Dissolved Oxygen	00625 Total Kjeldahl Nitrogen	01032 Hexavalent Chromium	01105 Total Aluminum	50048 Min. flow during 24-hr. period
00310 BOD ₅	00663 Total Phosphorous	01034 Chromium	01147 Total Selenium	50050 Flow
00340 COD	00720 Cyanide	01037 Total Cobalt	31504 Total Coliform	50060 Total Residual Chlorine
00400 pH	00745 Total Sulfide	01042 Copper	31614 Fecal Coliform, MPN, Tube	71880 Formaldehyde
00500 Total Solids	00927 Total Magnesium	01045 Total Iron	31616 Fecal Coliform	71900 Mercury
00530 TSS	00929 Total Sodium	01051 Lead	32730 Total Phenolics	81318 Ferrocyanides
00545 Settling Solids	00940 Total Chloride	01067 Nickel	38260 MBAS	85652 Time

The monthly average for fecal coliform is to be reported as a geometric MEAN.

If using alternate units for reporting data, please designate.

EFFLUENT

NPDES PERMIT NO: NC0024392 DISCHARGE NO: 003 MONTH: February YEAR: 1991
 FACILITY NAME: Duke Power Company - McGuire Nuclear Station CLASS: I COUNTY: Mecklenburg
 OPERATOR IN RESPONSIBLE CHARGE (ORC): Mark E. Bridges GRADE: III
 CERTIFIED LABORATORY: Station Exempt/Central Lab ID 248

CHECK BLOCK IF ORC HAS CHANGED ☐

Mail original and one copy to:
 ATT: Central Files
 Division of Environmental Management
 NC Department of NRCD
 P.O. Box 27617
 Raleigh, North Carolina 27611

PERSON(S) COLLECTING SAMPLES: C.A. Bynum

I CERTIFY THAT THIS REPORT

IS ACCURATE AND COMPLETE TO

THE BEST OF MY KNOWLEDGE

x Mark E. Bridges
 Signature of operator in responsible charge

DATE	TIME 2400 CLOCK	COMPOSITE TIME	ENTER PARAMETER CODE ABOVE NAME AND UNITS BELOW															
			50050 FLOW EFF <input type="checkbox"/> INF <input type="checkbox"/> DAILY RATE		50040 pH		50060 Total Residual Chlorine		50030 BOD ₅ 20°C		50050 Total Suspended Solids		31615 Fecal Coliform *Geometric Mean		00556 Oil and Grease		38250 MBAS	
			MGD	Unit	MG/L	MG/L	MG/L	MG/L	/100ML	MG/L	MG/L	MG/L	MG/L					
			HRS															
1	0915		0.026															
2	0925		0.012															
3	0915		0.007															
4	0925		0.022			4.5												
5	0900		0.022	7.6			14.7	50.9	<2	0.22	<0.1							
6	0845		0.029															
7	0915		0.029															
8	0830		0.022															
9	0915		0.009															
10	0935		0.007															
11	0830		0.007			5.4												
12	0830		0.036	7.4														
13	0820		0.036															
14	0920		0.040															
15	0900		0.036															
16	1005		0.007															
17	1110		0.004															
18	0900		0.007			1.4												
19	0925		0.014	7.7			34.7	73.8	<2	0.34								
20	0840		0.029															
21	0930		0.017															
22	0845		0.029															
23	1000		0.010															
24	1115		0.007															
25	0850		0.006			3.0												
26	0805		0.022	7.5														
27	0850		0.029															
28	0900		0.029															
29																		
30																		
31																		
Average			0.20			3.6	24.7	62.4	<2	0.28								
Max.			0.40	7.7		5.4	34.7	73.8	<2	0.34	<0.1							
Min.			0.004	7.4		1.4	14.7	50.9	<2	0.22								
Comp. C/ Grab C																		
Monthly Limit																		

Facility Status: (Please check one of the following)

All monthly averages and / or other limitation do meet permit monitoring requirements ☒

(Compliant)

All monthly averages and / or other limitation do not meet permit monitoring requirements ☐

(Noncompliant)

If the facility is noncompliant, please comment on corrective actions being taken in respect to equipment, operation, maintenance, etc. and a time table for improvements to be made.

(Attach additional sheets if necessary)

I certify that this Report is accurate
and complete to the best of my knowledge:

W. A. Haller

Signature of Permittee

PARAMETER CODES

00010 Temperature	00556 Oil and Grease	00950 Dissolved Fluoride	01077 Silver	39516 PCBs
00065 Stream Stage	00600 Total Nitrogen	01002 Total Arsenic	01087 Total Vanadium	39941 Roundup
00076 Turbidity	00610 Ammonia Nitrogen	01027 Cadmium	01092 Zinc	50047 Max. flow during 24-hr. period
00300 Dissolved Oxygen	00625 Total Kjeldahl Nitrogen	01032 Hexavalent Chromium	01105 Total Aluminum	50048 Min. flow during 24-hr. period
00310 BOD ₅	00645 Total Phosphorous	01034 Chromium	01147 Total Selenium	50050 Flow
00340 COD	00720 Cyanide	01037 Total Cobalt	31504 Total Coliform	50050 Total Residual Chlorine
00400 pH	00745 Total Sulfide	01042 Copper	31614 Fecal Coliform, MPN, Tube	71280 Formaldehyde
00500 Total Solids	00927 Total Magnesium	01045 Total Iron	31616 Fecal Coliform	71900 Mercury
00530 TSS	00929 Total Sodium	01051 Lead	32730 Total Phenolics	81318 Ferrocyanides
00545 Settleable Solids	00940 Total Chloride	01067 Nickel	38260 MBAS	85652 Time

The monthly average for fecal coliform is to be reported as a geometric MEAN.

If using alternate units for reporting data, please designate.

EFFLUENT

NPDES PERMIT NO: NC0024392 DISCHARGE NO: 004 MONTH: February YEAR: 1991
FACILITY NAME: Duke Power Company - McGuire Nuclear Station CLASS: II COUNTY: Mecklenburg
OPERATOR IN RESPONSIBLE CHARGE (ORC): Mark E. Bridges GRADE: III
CERTIFIED LABORATORY: Station Exempt/Central Lab ID 248

CHECK BLOCK IF ORC HAS CHANGED

Mail original and one copy to:
ATT: Central Files
Division of Environmental Management
N.C. Department of NRCD
P.O. Box 27687
Raleigh, North Carolina 27611

PERSON(S) COLLECTING SAMPLES: Richard Baker

I CERTIFY THAT THIS REPORT
IS ACCURATE AND COMPLETE TO
THE BEST OF MY KNOWLEDGE

x Mark E. Bridger
Signature of operator in responsible charge

DATE	TIME 2400 CLOCK	COMPOSITE TIME	50050 00530 00556 01313		
			FLOW EFF <input checked="" type="checkbox"/>	ENTER PARAMETER CODE ABOVE NAME AND UNITS BELOW	
		DAILY RATE	Total Suspended Solids MG/L	Oil and Grease MG/L	Hydrazine MG/L
1					
2					
3					
4					
5					
6					
7	2400	0.006			
8					
9					
10					
11					
12					
13					
14	2400	0.006			
15					
16					
17					
18					
19					
20					
21	2400	0.011			
22					
23					
24					
25					
26					
27					
28	2400	0.006			
29					
30					
31					
Average		0.007			
Max.		0.011			
Min.		0.006			
Comp. (C) / Grab (G)					
Monthly Limit					

Facility Status: (Please check one of the following)

All monthly averages and / or other limitation do meet permit monitoring requirements ☒

(Compliant)

All monthly averages and / or other limitation do not meet permit monitoring requirements ☐

(Noncompliant)

If the facility is noncompliant, please comment on corrective actions being taken in respect to equipment, operation, maintenance, etc. and a time table for improvements to be made.

(Attach additional sheets if necessary)

I certify that this Report is accurate and complete to the best of my knowledge:

W. J. Allen

Signature of Permittee

PARAMETER CODES

00010 Temperature	00556 Oil and Grease	00950 Dissolved Fluoride	01077 Silver	39516 PCBs
00065 Stream Stage	00600 Total Nitrogen	01002 Total Arsenic	01087 Total Vanadium	39941 Roundup
00076 Turbidity	00610 Ammonia Nitrogen	01027 Cadmium	01092 Zinc	50047 Max. flow during 24-hr. period
00300 Dissolved Oxygen	00625 Total Kjeldahl Nitrogen	01032 Hexavalent Chromium	01103 Total Aluminum	50048 Min. flow during 24-hr. period
00310 BOD ₅	00665 Total Phosphorous	01034 Chromium	01147 Total Selenium	50050 Flow
00340 COD	00720 Cyanide	01037 Total Cobalt	31504 Total Coliform	50060 Total Residual Chlorine
00400 pH	00745 Total Sulfide	01042 Copper	31614 Fecal Coliform, MPN, Tube	71880 Formaldehyde
00500 Total Solids	00927 Total Magnesium	01045 Total Iron	31616 Fecal Coliform	71900 Mercury
00530 TSS	00929 Total Sodium	01051 Lead	32730 Total Phenolics	81318 Ferrocyanides
00545 Settling Solids	00940 Total Chloride	01067 Nickel	38260 MBAS	85652 Time

The monthly average for fecal coliform is to be reported as a geometric MEAN.

If using alternate units for reporting data, please designate.

EFFLUENT

NPDES PERMIT NO: NC0024392 DISCHARGE NO: 005 MONTH: February YEAR: 1991
 FACILITY NAME: Duke Power Company - McGuire Nuclear Station CLASS: LL COUNTY: Mecklenburg
 OPERATOR IN RESPONSIBLE CHARGE (ORC): Mark E. Bridges GRADE: III
 CERTIFIED LABORATORY: Station Exempt/Central Lab ID 248

CHECK BLOCK IF ORC HAS CHANGED ☐

Mail original and one copy to:
 ATT: Central Files
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 N.C. Department of NRCD
 P.O. Box 27617
 Raleigh, North Carolina 27611

PERSON(S) COLLECTING SAMPLES: C.A. Bynum

I CERTIFY THAT THIS REPORT

IS ACCURATE AND COMPLETE TO

THE BEST OF MY KNOWLEDGE

x Mark E. Bridges
 Signature of operator in responsible charge

DATE	TIME 2400 CLOCK	COMPOSITE TIME	50050	00400	00310	00610	00530	31616	00556	00410	00665	00625	00630	01042	01045	TGP3R
			FLOW	ENTER PARAMETER CODE ABOVE			Total Suspended Solids	Fecal Coliform Geometric Mean	Oil and Grease	Alkalinity	Total Phosphorous	Total Kjeldahl Nitrogen	Nitrate + Nitrite Nitrogen	Total Copper	Total Iron	Chronic Toxicity
			EFF <input type="checkbox"/>	NAME AND UNITS BELOW												
			INF <input type="checkbox"/>	pH	BOD ₅ 20°C	Ammonia Nitrogen										
		DAILY RATE														
		HRS	MGD	Unit	MG/L	MG/L	MG/L	/100ML	MG/L	MG/L	MG/L	MG/L	MG/L	UG/L	UG/L	P-P
1	0855		1.014													
2	0845		0.687													
3	0905		0.687													
4	0920		0.870													
5	0810		0.872	8.1		0.05			<0.1	14.18	0.09	0.8	0.2	<100	200	
6	0810		0.976													
7	0900		1.014													
8	0815		0.896													
9	0900		0.687													
10	0925		0.572													
11	0810		0.724													
12	0810		0.572													
13	0815		0.285													
14	0900		0.690													
15	0835		0.410													
16	0915		0.787													
17	1030		0.285													
18	0850		0.510													
19	0900		0.409	10.0	5.1		11.0	<2	<0.1							
20	0820		0.409													
21	0840		0.426													
22	0830		0.232													
23	1100		0.414													
24	1105		0.232													
25	0910		0.200													
26	0800		0.200													
27	0835		0.117													
28	0845		0.121													
29																
30																
31																
Average			0.546						<0.1							
Max.			1.014	10.0	5.1	0.05	11.0	<2	<0.1	14.18	0.09	0.8	0.2	<100	200	
Min.			0.117	8.1					<0.1							
Comp (C)/Grab (G)				G	G	G	G	G	G	G	G	G	G	G	G	
Monthly Limit																

Facility Status: (Please check one of the following)

All monthly averages and / or other limitation do meet permit monitoring requirements ☒

(Compliant)

All monthly averages and / or other limitation do not meet permit monitoring requirements ☐

(Noncompliant)

If the facility is noncompliant, please comment on corrective actions being taken in respect to equipment, operation, maintenance, etc. and a time table for improvements to be made.

(Attach additional sheets if necessary)

I certify that this Report is accurate and complete to the best of my knowledge:

W. A. Haller

Signature of Permittee

PARAMETER CODES

00010 Temperature	00536 Oil and Grease	00950 Dissolved Fluoride	01077 Silver	39516 PCBs
00065 Stream Stage	00600 Total Nitrogen	01002 Total Arsenic	01087 Total Vanadium	39941 Roundup
00076 Turbidity	00610 Ammonia Nitrogen	01027 Cadmium	01092 Zinc	50047 Max. flow during 24-hr. period
00300 Dissolved Oxygen	00625 Total Kjeldahl Nitrogen	01032 Hexavalent Chromium	01105 Total Aluminum	50048 Min. flow during 24-hr. period
00310 BOD ₅	00665 Total Phosphorous	01034 Chromium	01147 Total Selenium	50050 Flow
00340 COD	00720 Cyanide	01037 Total Cobalt	11304 Total Coliform	50060 Total Residual Chlorine
00400 pH	00745 Total Sulfide	01042 Copper	11614 Fecal Coliform, MPN, Tube	71880 Formaldehyde
00500 Total Solids	00927 Total Magnesium	01045 Total Iron	11616 Fecal Coliform	71900 Mercury
00530 TSS	00929 Total Sodium	01051 Lead	12730 Total Phenolics	81318 Ferrocyanides
00545 Settlesable Solids	00940 Total Chloride	01067 Nickel	18260 HCBAS	83652 Time

The monthly average for fecal coliform is to be reported as a geometric MEAN.

If using alternate units for reporting data, please designate.

EFFLUENT

NPDES PERMIT NO: NC0024392 DISCHARGE NO: 006 MONTH: February YEAR: 1991
 FACILITY NAME: Duke Power Company - McGuire Nuclear Station CLASS: 11 COUNTY: Mecklenburg
 OPERATOR IN RESPONSIBLE CHARGE (ORC): Mark E. Bridges GRADE: III
 CERTIFIED LABORATORY: Station Exempt/Central Lab ID 248

CHECK BLOCK IF ORC HAS CHANGED ☐

Mail original and one copy to:
 ATT: Central Files
 Division of Environmental Management
 N.C. Department of NRCD
 P.O. Box 27687
 Raleigh, North Carolina 27611

PERSON(S) COLLECTING SAMPLES: _____

I CERTIFY THAT THIS REPORT
 IS ACCURATE AND COMPLETE TO
 THE BEST OF MY KNOWLEDGE

x Mark E. Bridges
 Signature of operator in responsible charge

DATE	TIME 2400 CLOCK	COMPOSITE TIME	50050 00400 01042 01045		
			FLOW	ENTER PARAMETER CODE ABOVE	NAME AND UNITS BELOW
			EFF <input type="checkbox"/>		
			INF <input type="checkbox"/>		
			DAILY RATE	pH	Total Copper
			HRS	Unit	UG/L
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					
29					
30					
31					
Average					
Max.					
Min.					
Comp. (C) / Grab (G)					
Monthly Limit					

NO SAMPLING DONE THIS PERIOD

Facility Status: (Please check one of the following)

All monthly averages and / or other limitation do meet permit monitoring requirements ☒ (Compliant)

All monthly averages and / or other limitation do not meet permit monitoring requirements ☐ (Noncompliant)

If the facility is noncompliant, please comment on corrective actions being taken in respect to equipment, operation, maintenance, etc. and a time table for improvements to be made.
(Attach additional sheets if necessary)

I certify that this Report is accurate and complete to the best of my knowledge:

W. A. Haller

Signature of Permittee

PARAMETER CODES

00010 Temperature	00555 Oil and Grease	00950 Dissolved Fluoride	01077 Silver	39518 PCBs
00065 Stream Stage	00600 Total Nitrogen	01002 Total Arsenic	01087 Total Vanadium	39941 Roundup
00076 Turbidity	00610 Ammonia Nitrogen	01027 Cadmium	01092 Zinc	50047 Max. flow during 24-hr. period
00300 Dissolved Oxygen	00625 Total Kjeldahl Nitrogen	01032 Hexavalent Chromium	01103 Total Aluminum	50048 Min. flow during 24-hr. period
00310 BOD ₅	00665 Total Phosphorous	01034 Chromium	01147 Total Selenium	50050 Flow
00340 COD	00720 Cyanide	01037 Total Cobalt	31504 Total Coliform	50060 Total Residual Chlorine
00400 pH	00745 Total Sulfide	01042 Copper	31614 Fecal Coliform, MPN, Tube	71880 Formaldehyde
00500 Total Solids	00927 Total Magnesium	01045 Total Iron	31616 Fecal Coliform	71900 Mercury
00530 TSS	00929 Total Sodium	01051 Lead	32730 Total Phenolics	81318 Ferrocyanides
00545 Settleable Solids	00940 Total Chloride	01067 Nickel	38260 PCBs	85652 Time

The monthly average for fecal coliform is to be reported as a geometric MEAN.

If using alternate units for reporting data, please designate.

MN0291D1

Effluent Aquatic Toxicity Report Form - Acute Pass/Fail Date 2/6/91

Facility	McGuire Nuclear Station	NPDES#	NC0024392	Pipe #	001	County	Mecklenburg
Laboratory Performing Test	Duke Power Prod. Env. Serv.			Comments			
Signature of Operator in Responsible Charge				Sample Temperature upon receipt was 2.6°C. Two animals died on side of beaker no. 28.			

MAIL ORIGINAL TO:

Environmental Sciences Branch
 Div. of Environmental Management
 N.C. Dept. of EHN
 P. O. Box 27687
 Raleigh, North Carolina 27611

North Carolina Acute Pass/Fail Bioassay

Collection Date: 2/5/91		Organism Tested																			
Collection Time: 0915		Daphnia pulex																			
Test Start Date: 2/5/91																					
<table border="1"> <tr> <th colspan="3">Sample Type/Duration</th> </tr> <tr> <th>Grab</th> <th>Comp</th> <th>Duration</th> </tr> <tr> <td></td> <td>X</td> <td>24 h</td> </tr> </table>		Sample Type/Duration			Grab	Comp	Duration		X	24 h	<table border="1"> <tr> <th colspan="2">pH</th> </tr> <tr> <td>Control</td> <td>7.9 7.8</td> </tr> <tr> <td>Treatment</td> <td>7.3 7.5</td> </tr> </table>		pH		Control	7.9 7.8	Treatment	7.3 7.5			
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<table border="1"> <tr> <th colspan="2">Hardness (mg/l)</th> </tr> <tr> <td>42.5</td> <td></td> </tr> <tr> <th colspan="2">Spec. Cond. (µmhos)</th> </tr> <tr> <td>148</td> <td>54</td> </tr> <tr> <th colspan="2">Chlorine (mg/l)</th> </tr> <tr> <td></td> <td>N.M.</td> </tr> </table>		Hardness (mg/l)		42.5		Spec. Cond. (µmhos)		148	54	Chlorine (mg/l)			N.M.	<table border="1"> <tr> <th colspan="2">D.O.</th> </tr> <tr> <td>Control</td> <td>8.3 9.0</td> </tr> <tr> <td>Treatment</td> <td>10.7 9.0</td> </tr> </table>		D.O.		Control	8.3 9.0	Treatment	10.7 9.0
Hardness (mg/l)																					
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	N.M.																				
D.O.																					
Control	8.3 9.0																				
Treatment	10.7 9.0																				

Mortality		Replicate				Mean Mortality
Treatment 1 (Control)		A	B	C	D	
		%	%	%	%	%
		0	0	0	0	0
Treatment 2 (Exposure)		A	B	C	D	
Concentration Tested	90 %	%	%	%	%	%
		0	20	0	0	5

(NOTE: If mean control mortality exceeds 10%, the test is considered invalid)

Calculate using Arc-Sine Square Root transformed data	Calculated Student's t	-1.00	PASS	X
	Tabular Student's t (ONE TAILED)	-3.14	FAIL	

If the absolute value of the calculated t is less than or equal to the absolute value of the tabular t, check PASS.
 If the absolute value of the calculated t is greater than the absolute value of the tabular t, check FAIL.
 If all vessels within each treatment have the same response but the treatment two response is greater than the control, check FAIL.

MN0291DI

TOXICITY TEST DATA

Industry/Toxicant: McGuire N.S.
 Address: McGuire N.S.
 NPDES Permit No: MC0021392
 Effluent Serial No.: 001
 Dilution water: SRW-44
 Carrier Solvent: ☐ Yes ☒ No
 Test criterion: ☐ Mortality ☒ Immobility (Other)

Test Conducted By: Keith A. Finley
 Testing Laboratory: Duke Power Company
 Beginning Date: 2/5/91 Time: 12:45
 Ending Date: 2/6/91 Time: 12:50
 Test Organism: Daphnia pulex
 Organism Age: less than 23 hours
 Organism Source: Duke Power Company lab

Test Type: ☒ Static BIO - 261.0 (PIF)
☐ Static with renewal at:
☐ Continuous flow
 Sample Type: ☐ Grab Collected: / Time: /
 LOG NO: MN029102 / Time: /

☒ Composite
 Collected From: 2/5/91 Time: 0930
 To: 2/5/91 Time: 0915

Concentration + % Effluent	Test Container Number	Number of Surviving Organisms	Temperature (°C) (ELENV 30809)	Dissolved Oxygen (mg/L)
Control	1A	0-4, 24-h	0-h 24-h	0-h 24-h
Control	1B	10 10	19.1	8.3 9.0
Control	1C	10 10		
Control	1D	10 10		
90%	2A	10 10	19.3	
90%	2B	10 10	20.8	10.7 9.0
90%	2C	10 10		
90%	2D	10 10	19.0	

Chemistry Data

Date: 2/5/91 Time: 1315

pH 7.9 7.3 KAF
 Spec. Conc. High
 Cond. 148 54 KAF
 (uS/cm) (100% Effluent)
 TRC N.M. N.M.
 (mg/L)
 Total Alk. N.M. N.M.
 (mg/L)
 Total Hardness 42.5 2-5-91
 (mg/L)

Procedure Numbers

BIO- 200.0 (Temperature)
 BIO- 214.0 (Dissolved O₂)
 BIO- 210.0 (pH)
 BIO- 217.0 (Spec. Cond.)
 NA (TRC)
 NA (Total Alk.)
 BIO- 216.0 (Total Hardness)

Analyst Initials:

Organism Length (mm):

Organism Weight (g)

Test vessel capacity

Test solution volume

Feeding ☒ No ☐ YesAeration ☒ No ☐ Yes

Mean: KAF KAF KAF KAF KAF KAF
 S.D. S.D. S.D. S.D. S.D. S.D.

Condition of surviving organisms at end of test

Comments: a few animals died to side of beaker

MN0291D1

Addition of chemicals

Date: 2 / 6 / 91

Time: 1305

Control High Conc. Control High Conc.

	Control	High Conc.	Control	High Conc.
pH	7.8	7.5	KAF	
Spec. Cond. (uS/cm)				
TRC (mg/L)				
Total Alk. (mg/L)				
Total Hardness (mg/L)				

Source Concentration

Source Stock Solution Dilution (v/v)

(wt/v)

mL

mL

100 % Effluent

(Stock Solution Conc.)

450 mL (Transferred)	_____ mL (Transferred)	_____ mL (Transferred)	_____ mL (Transferred)	_____ mL (Transferred)
500 mL (Final Vol.)	_____ mL (Final Vol.)	_____ mL (Final Vol.)	_____ mL (Final Vol.)	_____ mL (Final Vol.)
90 % (Final Conc.)	_____ (Final Conc.)	_____ (Final Conc.)	_____ (Final Conc.)	_____ (Final Conc.)

 RECORDED BY: Keith A. Finley 2-5-91
 CHECKED BY: David J. Laughlin 2/6/91

WN0291D2

Effluent Toxicity Report Form- Chronic Pass/Fail and Acute LC50

Date 2/8/91

Facility McGuire Nuclear Station NPDES# NC 0024392 Pipe # 002 County MecklenburgLaboratory Performing Test Duke Power Prod. Env. Serv.x John S. Vette
Signature of Operator in Responsible ChargeComments Sample logged in and re-
frigerated within 28 minutes of col-
lection. (Sample iced at time of col-
lection.) Documentation attached

MAIL ORIGINAL TO:

Environmental Sciences Branch
Div. of Environmental Management
N.C. Dept. of EHNH
P. O. Box 27687
Raleigh, North Carolina 27611

North Carolina Ceriodaphnia Chronic Pass/Fail Reproduction Bioassay

CONTROL ORGANISMS 1 2 3 4 5 6 7 8 9 10 11 12

# Young Produced													
Adult (L)live (D)dead													

Effluent%

TREATMENT 2 ORGANISMS 1 2 3 4 5 6 7 8 9 10 11 12

# Young Produced													
Adult (L)live (D)dead													

Chronic Test Results

Calculated t	
% Mortality	Avg Reprod.
Control	Control
Treatment 2	Treatment 2
% control organisms producing 3rd brood	PASS FAIL
<input type="text"/>	<input type="text"/> <input type="text"/>
	Check One

	1st sample	1st sample	2nd sample
pH	Control		
	Treatment 2		
	start	start	start
	end	end	end
	1st sample	1st sample	2nd sample
D.O.	Control		
	Treatment 2		

Complete This For Either Test

Test Start Date
2 / 6 / 91

Collection (Start) Date

Sample 1 2 / 5 / 91 Sample 2 NA / /

Sample Type/Duration

	Grab	Comp.	Duration	Dilution	1st Tox Sample	2nd Tox Sample
Sample 1	X					
Sample 2						

Hardness(mg/l)

41.4

Spec. Cond. (µmhos)

149

Chlorine(mg/l)

NM

Sample temp. at receipt

10.90

LC50/Acute Toxicity Test

(Mortality expressed as %, combining replicates)

%	%	%	%	%	%	%	%	%	%
0	6.25	12.5	25	50	100	--	--	--	--
%	%	%	%	%	%	%	%	%	%
0	0	0	0	5	0	--	--	--	--

Concentration

Mortality

LC50 = NA %

95% Confidence Limits

NA % - NA %

Method of Determination NA

Moving Average ☐ Probit ☐Spearman Karber ☐ Other Organism Tested Daphnia pulex

DEM form AT-1 (3/87) rev. 10/90

Note: Please
Complete This
Section Also

start/end	start/end	Control	start/end
7.7	7.8		8.5
7.1	7.9	High Conc.	9.6
pH			D.O.

STATISTICAL ANALYSES

The Ceriodaphnia chronic toxicity test measures the chronic toxicity of whole effluents through both mortality and reproduction. Statistically significant toxic responses are to be detected using a t test (EPA/600/4-89/001, pg. 240) to compare mean reproduction in the effluent concentration and the control. As described in EPA chronic toxicity testing protocol (EPA/600/4-89/001) mean reproduction is calculated by summing the total number of young produced per female until either the time of death or the end of the experiment and dividing by the initial number of females exposed. An analysis of variance (ANOVA) provides an estimate of the pooled variance which is incorporated in the calculation of a t statistic. Based on a comparison of the calculated t value with the tabied critical value for a one-sided comparison at a 0.01 confidence level, effluent chronic toxicity is determined to be either a PASS or a FAIL. In the case where there is only one treatment to be compared with the control, this t statistic is comparable to the Student t statistic for comparison of means from independent random samples. The t value is to be reported with test results.

The LC50 (acute toxicity section) represents the expected concentration of effluent that is lethal to 50% of the test organisms within the test period. A statistical estimation method must be used to obtain an estimate of the LC50 from concentration/mortality data. Uncertainty is quantified through confidence intervals expressing the range of values within which the "true" LC50 could occur.

EPA acute toxicity testing protocols (EPA/600/4-85/013) detail several methods for estimating the LC50 and confidence intervals including: probit analysis, logit analysis, the Litchfield-Wilcoxon method, the moving average angle method, and the trimmed Spearman-Kärber method. The recommended method is the trimmed Spearman-Kärber method because it is both model free and robust (i.e., not sensitive to anomalous responses), however, any of the above methods is acceptable. Confidence limits are an essential part of LC50 estimation and are to be included in reported toxicity test data.

BIOASSAY SAMPLE LOG

[illegible]

**DUKE POWER CORPORATION ENVIRONMENTAL SERVICES
BIOASSAY SUBUNIT SAMPLE COLLECTION AND CUSTODY RECORD**

MN0291D1

SAMPLE COLLECTION DATA

Station M^cGuire Location WC Outfall NPDES No. NC0024392 Outfall 002

County Mecklenburg State NC

Sample Type: ☒ Grab ☐ 24-h Composite (24 X 1/h) ☐ Other _____

Composite Sampler Used? ☒ No ☐ Yes Make _____ Model _____

Sampler Chilled? ☐ No ☐ Yes Composite Sampler ID No. _____

Volume Per Composite Cycle _____ mL ☐ Measured ☐ Estimated

Compositor Set By _____ Date ____/____/____ Time ____

Time of Initial Sample: Date ____/____/____ Time ____

Total Sample Volume _____ mL 4 L ☐ Measured ☒ Estimated No. Sample Containers 1

Container Material: ☒ LPE ☐ PPE ☐ Teflon ☐ Glass ☐ SS ☐ Other: _____

Sample Collector Bonnie G. Newton Date 02/05/91 Time 0940
(Print)

Sample Preservation? ☐ No ☒ Yes ☒ Iced ☐ Other: _____

SAMPLE CHARACTERISTICS - To Be Completed by Collector for Each Effluent Sample

Sample Characteristics: Color: ☒ No ☐ Yes: _____ Turbidity: ☒ No ☐ Yes: _____

Odor: ☒ No ☐ Yes: _____ Solids: ☒ No ☐ Yes: _____

Other (Including Site Characteristics): Flow good (heavy > 10 gpm)

SAMPLE CUSTODY DATA

Custody Maintained During Sample Transport By Bonnie G. Newton 2-5-91
(Signature of Collector)

Custody Relinquished By _____ Date ____/____/____ Time ____
(Signature of Collector)

Received By _____ Date ____/____/____ Time ____
(Signature)

Custody Relinquished By _____ Date ____/____/____ Time ____
(Signature)

Received By _____ Date ____/____/____ Time ____
(Signature)

Samples Leaving Duke Power Company Custody:

Sealed / Locked By _____ Date ____/____/____ Time ____
(Signature)

Seal / Lock Opened By _____ Date ____/____/____ Time ____
(Signature)

BIOASSAY SAMPLE LOG NUMBER: MN029101
(Transfer to Sample Label(s) and Test Data Sheets)

MN0291D2

TOXICITY TEST DATA

Industry/Toxicant: McGuire N. S.
 Address: McKlemburg Co. NC
 NPDES Permit No.: NC00024392
 Effluent Serial No.: 002
 Dilution water: SRW -
 Carrier Solvent: ☐ Yes ☒ No
 Test criterion: ☐ Mortality ☒ Immobility (Other)

Test Conducted By: Keith A. Finley
 Testing Laboratory: Duke River Bioscience
 Beginning Date: 2/4/91 Time: 0955
 Ending Date: 2/8/91 Time: 1000
 Test Organism: Daphnia pulex
 Organism Age: Less than 20 hours
 Organism Source: Duke River Bioscience Lab

Test Type: ☒ Static BIO - 261.0
☐ Static with renewal at
☐ Continuous flow
 Sample Type: ☒ Grab Collected 2/5/91 Time: 0940
 Log No.: MND24101

☐ Composite
 Collected From: 1 Time: 1
 To: 1 Time: 1

Concentration or % Effluent	Test Container Number	Number of Surviving Organisms			Temperature (°C) (ELEMV 3C809)	Dissolved Oxygen (mg/L)		
Control	1A	0-h	24-h	48-h	0-h	24-h	48-h	
Control	1B	10	10	10	20.3	1	20.4	8.5
6.25	2A	10	10	10	20.2	1	1	1
6.25	2B	10	10	10	20.3	1	19.8	8.5
12.5	3A	10	10	10	19.9	1	1	1
25.0	4A	10	10	10	20.2	1	19.7	8.8
25.0	4B	10	10	10	19.7	1	1	1
50.0	5A	10	10	10	19.3	1	19.6	9.6
50.0	5B	10	9	9	1	20.2	1	1
100	6A	10	10	10				8.8
100	6B	10	10	10				1

Analyst Initials:

Organism Length (mm)

Organism Weight (g)

Test vessel capacity

Test solution volume

Feeding ☒ No ☐ YesSurvival ☒ No ☐ Yes

KAF	KAF	KAF	KAF	KAF	KAF	KAF	KAF	KAF
Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
S.D.	S.D.	S.D.	S.D.	S.D.	S.D.	S.D.	S.D.	S.D.

Condition of surviving organisms at end of test

Comments

Chemistry Data

Date: 2/6/91 Time: 1015

High
Control
pH 7.7 7.1 KAF

Spec.
Cond.
Res (S/cm) 149 512 KAF
(not to exceed)

TRC (mg/L) NM NM

Total

Alk

(mg/L) NM NM

Total

Hardness

(mg/L) 41.4 NM KAF

Procedure Numbers

BIO-200.0 (Temperature)

BIO-214.0 (Dissolved O₂)

BIO-210.0 (pH)

BIO-217.0 (Spec. Cond.)

NA (TRC)

NA (Total Alk.)

BIO-216.0 (Total Hardness)

Form M-1 (1-78)

Additions: *see also: 213*

Date *2 / 8 / 91*

Time *0945*

Temp. *[crossed out]*

Control High Conc. Control High Conc.

pH
Spec.
Cond.
(uS/cm)
TRC
(mg/L)
Total
Alk.
(mg/L)
Total
Hardness
(mg/L)

7.8

7.9

KAF

Source Concentration

Source: Stock Solution Dilution (v/v)

(wt/v)

ml

ml

100 % Effluent

mg
(Stock Solution Conc.)

<i>31.25</i> ml (Transferred)	<i>62.5</i> ml (Transferred)	<i>125</i> ml (Transferred)	<i>250</i> ml (Transferred)	<i>/</i> ml (Transferred)
<i>500</i> ml (Final Vol.)	<i>500</i> ml (Final Vol.)	<i>500</i> ml (Final Vol.)	<i>500</i> ml (Final Vol.)	<i>/</i> ml (Final Vol.)
<i>6.25 %</i> (Final Conc.)	<i>12.5 %</i> (Final Conc.)	<i>25.0 %</i> (Final Conc.)	<i>50.0 %</i> (Final Conc.)	<i>/</i> (Final Conc.)

RECORD :

CHECK :

Heath A. Finley 2-5-91
David J. Caughlan 2/5/91