FROM:
Northern States Power Company
Minneapolis, Minn. 55401
G.H. Neils

DATE OF DOCUMENT: Feb. 29, 1972
DATE RECEIVED: Mar. 2, 1972
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LTR. X MEMO: REPORT: OTHER:

TO:
Dr. Peter A. Morris

ORIG.: 1 CC: OTHER:

ACTION NECESSARY ☐ NO ACTION NECESSARY ☐
CONCURRENCE ☐ COMMENT ☐
DATE ANSWERED: BY:

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Ltr trans the following:

ENCLOSURES:
App A.-Suppl Report on Radioactive Effluents for 1971 at Monticello Plant.....

(1 Orig & 2 conf'd cys of encl rec'd)

REMARKS:
1 CY LOCAL PDR MINNEAPOLIS, MINN.

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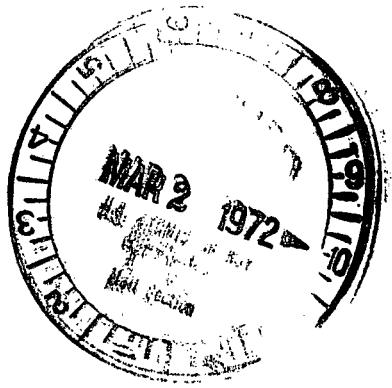
NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401



February 29, 1972

Regulatory File Cy.

Dr. Peter A. Morris, Director
Division of Reactor Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Morris:

MONTICELLO NUCLEAR GENERATING PLANT

Docket No. 50263 License No. DPR-22

Radwaste Effluent Data as Established by Appendix A of Safety Guide 21

The attached report is being submitted to you as a supplement to the Radioactive Effluent Data in the Six-Month Operating Reports for 1971.

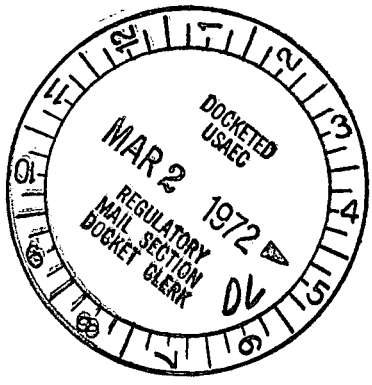
The additional information has been assembled in a format as perscribed by Appendix A, Safety Guide 21, dated December 29, 1971.

Yours very truly,

G H Neils

G H Neils
Gen Supt of Nuclear Power Plant Operation

GHN/dm



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APPENDIX A

REPORT OF RADIOACTIVE EFFLUENTS

Facility M[illegible]llo Docket 50-263 Year 1971

A. LIQUI

	Units	Jan.	Feb.	Mar.	Apr.	May	June
1. [illegible]adioactivity (B, γ)							
a) Total release	Curies	3×10^{-7}	6×10^{-7}	4×10^{-6}	1.08×10^{-5}	4.11×10^{-4}	5.82×10^{-4}
b) Average concentration released	uci/ml	7×10^{-14}	3.3×10^{-14}	5.5×10^{-13}	1.3×10^{-12}	1.6×10^{-11}	3.4×10^{-11}
c) Maximum concentration released	uci/ml	3.1×10^{-12}	9.2×10^{-13}	2×10^{-11}	2.6×10^{-10}	2.5×10^{-9}	1.4×10^{-9}
2. Tritium							
a) Total release	Curies	1×10^{-3}	1.37×10^{-3}	3.8×10^{-4}	3.8×10^{-3}	8.4×10^{-4}	5.67×10^{-3}
b) Average concentration released	uci/ml	2.4×10^{-10}	7.6×10^{-11}	5.2×10^{-11}	4.6×10^{-10}	3.4×10^{-11}	3.3×10^{-10}
3. Dissolved noble gases							
a) Total release	Curies	x	x	x	x	x	x
b) Average concentration released	uci/ml	x	x	x	x	x	x
4. Gross Alpha Radioactivity							
a) Total release	Curies	2.1×10^{-8}	3.5×10^{-8}	2.5×10^{-8}	3.1×10^{-8}	3.7×10^{-8}	2.5×10^{-8}
b) Average concentration released	uci/ml	5×10^{-15}	1.9×10^{-15}	3.5×10^{-15}	3.7×10^{-15}	1.5×10^{-15}	1.5×10^{-15}
5. Vol. of liq. waste to disch.canal	liters	2×10^{5}	9.2×10^{5}	7.8×10^{4}	4.9×10^{4}	8.6×10^{4}	1.4×10^{5}
6. Volume of dilution water	liters	4.2×10^{9}	1.8×10^{10}	7.2×10^{9}	8.3×10^{9}	2.5×10^{10}	1.7×10^{10}
7. Isotopes released	Curies						
Ba+La-140		x	x	x	x	x	x
I-133		x	x	x	x	x	x
I-131		x	x	x	x	1×10^{-4}	2.7×10^{-5}
Xe-133		x	x	x	x	x	x
Xe-135		x	x	x	x	x	x
Cs-137		x	x	x	x	x	x
Cs 134		x	x	x	x	x	x
Co-60		x	x	x	x	x	1.1×10^{-6}
Co-58		x	x	x	x	4.6×10^{-5}	1.6×10^{-4}
Cr-51		x	x	x	x	x	1.3×10^{-4}
Mn-54		x	x	x	x	x	x
Zn-65		x	x	x	x	x	x
Sr-90		x	x	x	x	x	x
Others (specify) Mo^{99} - To^{99m}		x	x	x	x	8.3×10^{-6}	x
8. Percent of technical specification limit for total activity released	%	7.1×10^{-5}	3.3×10^{-5}	5.5×10^{-4}	1.3×10^{-3}	1.6×10^{-2}	3.4×10^{-2}

(x Unidentified and/or non-detectable)

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APPENDIX A

REPORT OF RADIOACTIVE EFFLUENTS

Facility Monticello Docket 50-263 Year 1971

A. LIQUID RELEASES

	Units	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1. Gross Radioactivity (B, Y)								
a) Total release	Curies	7.4×10^{-3}	1.38×10^{-4}	5.5×10^{-3}	1.09×10^{-5}	2.4×10^{-4}	7.9×10^{-5}	1.43×10^{-2}
b) Average concentration released	uci/ml	2.6×10^{-10}	3.9×10^{-12}	1.4×10^{-10}	2.6×10^{-13}	1.3×10^{-11}	5.2×10^{-12}	
c) Maximum concentration released	uci/ml	1.4×10^{-8}	3.4×10^{-9}	2×10^{-9}	1.2×10^{-10}	1×10^{-9}	9×10^{-11}	
2. Tritium								
a) Total release	Curies	9.2×10^{-3}	3.9×10^{-4}	2.5×10^{-1}	3.2×10^{-4}	3.2×10^{-1}	1×10^{-3}	5.9×10^{-1}
b) Average concentration released	uci/ml	3.2×10^{-10}	1.1×10^{-11}	6.1×10^{-9}	7.7×10^{-12}	1.8×10^{-8}	6.7×10^{-11}	
3. Dissolved noble gases								
a) Total release	Curies	x	x	x	x	x	x	
b) Average concentration released	uci/ml	x	x	x	x	x	x	
4. Gross Alpha Radioactivity								
a) Total release	Curies	3×10^{-8}	1.5×10^{-8}	1.3×10^{-8}	1.1×10^{-8}	4.3×10^{-8}	3×10^{-8}	3.16×10^{-7}
b) Average concentration released	uci/ml	1×10^{-15}	4×10^{-16}	3.1×10^{-16}	2.7×10^{-16}	2.4×10^{-15}	2×10^{-15}	
5. Vol. of liq. waste to disch.canal	Liters	7.9×10^{4}	1.9×10^{4}	1.4×10^{5}	1.6×10^{4}	2×10^{5}	8.8×10^{4}	1.2×10^{6}
6. Volume of dilution water	Liters	2.9×10^{10}	3.5×10^{10}	4.1×10^{10}	4.1×10^{10}	1.8×10^{10}	1.5×10^{10}	2.6×10^{11}
7. Isotopes released	Curies							
Ba+La-140		x	x	x	x	x	x	
I-133		x	x	x	x	x	x	
I-131		7.1×10^{-3}	3.1×10^{-6}	4.9×10^{-3}	1.3×10^{-6}	2×10^{-4}	2.2×10^{-5}	1.2×10^{-2}
Xe-133		x	x	x	x	x	x	
Xe-135		x	x	x	x	x	x	
Cs-137		x	x	x	x	x	1×10^{-5}	1×10^{-5}
Cs-134		x	x	x	x	x	x	
Co-60		2.5×10^{-5}	3.3×10^{-6}	2×10^{-5}	x	1.62×10^{-6}	9.7×10^{-6}	6.07×10^{-5}
Co-58		1×10^{-4}	4.2×10^{-5}	2.6×10^{-4}	8.7×10^{-6}	3.6×10^{-5}	3×10^{-5}	6.8×10^{-4}
Cr-51		1.4×10^{-4}	7.8×10^{-5}	4×10^{-5}	x	x	6.2×10^{-6}	3.9×10^{-4}
Mn-54		x	x	x	x	x	x	
Zn-65		x	x	x	x	x	x	
Sr-90		x	x	x	x	x	x	
Others (specify) Mo^{99} - Tc^{99m}		x	x	x	x	x	x	8.3×10^{-6}
8. Percent of technical specification limit for total activity released	%	2.6×10^{-1}	3.9×10^{-3}	1.4×10^{-1}	2.5×10^{-4}	1.3×10^{-2}	5.2×10^{-3}	

(x Unidentified and/or non-detectable)

B. AIRBORNE RELEASES

	Units	Jan	Feb.	Mar.	Apr.	May	June
1. Total noble gases	curies	x	x	12	58	710	550
2. Total halogens	curies	x	x	5.5×10^{-6}	2.6×10^{-5}	3.2×10^{-4}	2.5×10^{-4}
3. Total particulate gross radioactivity (B, γ)	curies	x	x	9.7×10^{-6}	4.5×10^{-5}	5.8×10^{-4}	4.5×10^{-4}
4. Total tritium	curies	x	4.3×10^{-4}	3.8×10^{-3}	6.5×10^{-3}	1.7×10^{-2}	1.5×10^{-2}
5. Total particulate gross alpha radioactivity	curies	x	x	x	x	x	x
6. Maximum noble gas release rate	uci/sec	x	x	150	900	1875	900
7. Percent of applicable limit for:							
a) noble gases	%	x	x	1.7×10^{-3}	8.3×10^{-3}	0.099	0.078
b) halogens	%	x	x	2.3×10^{-4}	1.2×10^{-3}	0.015	0.012
c) particulates	%						
8. Isotope released:	curies						
Particulates							
Cs-137		x	x	$\leq1\times10^{-8}$	$\leq1\times10^{-8}$	$\leq1\times10^{-8}$	$\leq1\times10^{-8}$
Ba-La-140		x	x	$\leq1\times10^{-8}$	$\leq1\times10^{-8}$	$\leq1\times10^{-8}$	$\leq1\times10^{-8}$
Sr-90		x	x	$\leq1\times10^{-8}$	$\leq1\times10^{-8}$	$\leq1\times10^{-8}$	$\leq1\times10^{-8}$
Cs-134		x	x	x	x	x	x
Sr-89		x	x	x	x	x	x
Halogens	curies						
I-131		(Same as Total Halogens above)					
I-133		x	x	x	x	x	x
I-135		x	x	x	x	x	x
Gases	curies						
Kr-85		x	x	x	x	x	x
Xe-133		x	x	0.3	2	65	140
Kr-88		x	x	1	17	85	80
Kr-87		x	x	0.67	14	54	30
Kr-85m		x	x	0.3	5	65	60
Xe-138		x	x	0.086	4	9	6
Xe-135m		x	x	x	x	x	x
Xe-135		x	x	0.5	8	63	119
Ar-41		x	x	<15	<14	<15	<15
Others as appropriate (specify)							

(x Unidentified and/or undetectable)

B. AIRBORNE RELEASES

	Units	July	Aug	Sept	Oct	Nov	Dec	Total
1. Total noble gases	curies	1283	16700	21100	26300	9140	-	7.6×10^{4}
2. Total halogens	curies	1.7×10^{-3}	1.7×10^{-3}	1.5×10^{-2}	8.2×10^{-3}	4.6×10^{-3}	4.4×10^{-4}	3.2×10^{-2}
3. Total particulate gross radioactivity (B, γ)	curies	2.3×10^{-4}	3.6×10^{-4}	5.37×10^{-4}	8.7×10^{-4}	3.1×10^{-4}	3.3×10^{-4}	3.7×10^{-3}
4. Total tritium	curies	6.8×10^{-2}	8.9×10^{-2}	1.3×10^{-1}	2.4×10^{-1}	8.31×10^{-2}	1.1×10^{-2}	6.6×10^{-1}
5. Total particulate gross alpha radioactivity	curies	x	x	x	x	x	x	
6. Maximum noble gas release rate	uci/sec	11250	14250	15000	14250	11500	11	
7. Percent of applicable limit for:								
a) noble gases	%	0.178	2.3	3.0	3.7	1.3	-	
b) halogens	%	0.25	1.38	1.9	0.58	1.64	0.29	
c) particulates	%							
8. Isotope released:	curies							
Particulates								
Cs-137		$\leq5\times10^{-8}$	$\leq5\times10^{-8}$	$\leq1\times10^{-7}$	$\leq1\times10^{-7}$	$\leq1\times10^{-7}$	$\leq1\times10^{-8}$	$\leq5\times10^{-7}$
Ba-La-140		$\leq1\times10^{-7}$	$\leq5\times10^{-7}$	$\leq1\times10^{-6}$	$\leq1\times10^{-5}$	$\leq5\times10^{-6}$	x	$\leq2\times10^{-5}$
Sr-90		$\leq1\times10^{-8}$	$\leq1\times10^{-8}$	$\leq1\times10^{-7}$	$\leq1\times10^{-7}$	$\leq1\times10^{-7}$	$\leq1\times10^{-8}$	$\leq4\times10^{-7}$
Cs-134		x	x	x	x	x	x	
Sr-89		x	x	x	x	x	x	
Halogens	curies							
I-131		(Same as Total Halogens above)						
I-133		x	x	x	x	x	x	
I-135		x	x	x	x	x	x	
Gases	curies							
Kr-85		x	x	x	x	x	x	
Xe-133		495	2822	2772	4987	2411	-	1.4×10^{4}
Kr-88		121	2086	1991	4383	1778	-	1×10^{4}
Kr-87		106	2275	2507	2813	1124	-	8.9×10^{3}
Kr-85m		93	1562	1413	1902	762	-	5.8×10^{3}
Xe-138		24	349	900	781	358	-	2.4×10^{3}
Xe-135m		x	x	x	x	x	-	
Xe-135		145	3743	4570	5120	1988	-	1.6×10^{4}
Ar-41		≤15	≤15	≤14	≤15	≤14	≤15	≤147
Others as appropriate (specify)								

(※ Unidentified and/or undetectable)


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