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JAN 26 1979

Mr. Steve J. Gadler
2120 Cater Avenue
St. Paul, Minnesota 55108

Dear Mr. Gadler:

Your letter to Chairman Hendrie, dated December 29, 1978, has been referred to me for reply. The letter is in reference to an earlier letter, dated May 18, 1978, in which you raised questions and issues regarding the Monticello spent fuel capacity increase.

We regret that you feel that the questions raised in your earlier letter have not been answered. It was our understanding that the lengthy telephone discussion held on June 9, 1978 provided you with complete and satisfactory responses to your questions and that no further action was required of the NRC Staff.

Nonetheless, we have attached as an enclosure to this letter, the Staff's summary responses to your questions that were developed in preparation for the June 9, 1978 telephone discussion. We trust that these summary responses and the June 9, 1978 discussion provide you with complete and satisfactory answers to your questions.

The State of Minnesota (Minnesota Pollution Control Agency) has petitioned the NRC to prohibit the use of the racks at the Monticello plant, and has requested a hearing on the matter. The staff is currently reviewing the request by the Minnesota Pollution Control Agency.

Sincerely,

Original Signed by
H. R. Denton

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Enclosure:
Staff's Summary Responses

	EEB	ORB#3	OELD
*SEE PREVIOUS YELLOW FOR CONCURRENCES	*Knighton	*TIppolito	*SLewis
7902140197	1/19/79	1/16/79	1/18/79

OFFICE	ORB#3	AD/E&P/DOR	DD/DOR	D/DOR	DD/NRR	D/NRR
SURNAME	*RBevan:acr	*BGrimes	*DEisenhut	*VStello	*EGCase	HDenton
DATE	1/16/79	1/19/79	1/22/79	1/23/79	1/24/79	1/25/79

NRC FORM 318 (9-76) NRCM 0240 ★ U.S. GOVERNMENT PRINTING OFFICE: 1978 - 288 - 769

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SECY LETTER (05183)
Secy (3)

Mr. Steve J. Gadler
2120 Cater Avenue
St. Paul, Minnesota 55108

Dear Mr. Gadler:

Your letter to Chairman Hendrie, dated December 29, 1978, has been referred to me for reply. The letter is in reference to an earlier letter, dated May 18, 1978, in which you raised questions and issues regarding the Monticello spent fuel capacity increase.

We regret that you feel that the questions raised in your earlier letter have not been answered. It was our understanding that the lengthy telephone discussion held on June 9, 1978 provided you with complete and satisfactory responses to your questions and that no further action was required of the NRC Staff.

Nonetheless, we have attached as an enclosure to this letter, the Staff's summary responses to your questions that were developed in preparation for the June 9, 1978 telephone discussion. We trust that these summary responses and the June 9, 1978 discussion provide you with complete and satisfactory answers to your questions.

Sincerely,

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Enclosure:
Staff's Summary Responses

1/24/79 IND Knighton 1/19/79 ORB#3 TIppolito 1/16/79 OELD SHLewis 1/18/79

OFFICE	ORB#3	AD/E&P/DOR	DD/DOR	D/DOR	DD/NRR	D/NRR
SURNAME	RBevan:acr	BGrimes	DEisenhut	VStello	EGCase	HDenton
DATE	1/16/79	1/19/79	1/19/79	1/23/79	1/ /79	1/ /79

NRC FORM 318 (9-76) NRCM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1976 — 626-624

Enclosure 1

Responses to Questions Sent to G. Lear
by S. J. Gadler dated May 18, 1978

1. What is the present amount of curies stored at Monticello?

As of June 1, 1978, we estimate that there is less than 8×10^8 curies in the Monticello spent fuel pool (SFP).

2. What will be the amount of curies at Monticello after the October, 1978 refueling?

As of 30 days after the plant shuts down for refueling, we estimate that there will be less than 3×10^9 curies in the Monticello SFP. About 80% of the amount is in the fuel just removed from the core.

3. What will be the amount in 1991?

Thirty days after the plant shuts down for the refueling in 1991, we estimate that there will be less than 3×10^9 curies in the Monticello SFP.

4. What will be the total amount of curies discharged to the environment by the enlarged SFP to the year 1991?

As discussed in Section 5.3 of the Environmental Impact Appraisal dated April 14, 1978 for the Monticello SFP modification, we estimate gaseous releases of less than 74 curies per year of Krypton 85 when the modified

pool is full and no significant increase in activity in liquid releases from Monticello due to the SFP modification. Based on this, we estimate that the cumulative gaseous and liquid releases to 1991 will be less than 1100 curies, due to the SFP modification.

5. How much radioactive Krypton will be discharged to the environment in Curies per year? What is the amount to 1991?

In Section 5.3.3 of the Environmental Impact Appraisal dated April 14, 1978, we estimated less than 74 curies of Krypton 85 will be released each year when the modified pool is full due to the modification of the pool. Therefore, the quantity of Krypton released from Monticello to the year 1991 due to the modification of the pool is less than 1100 curies.

6. How much radioactive iodine will be discharged to the environment in Curies per year? What is the amount to 1991?

In Section 5.3.3 of the Environmental Impact Appraisal dated April 14, 1978, we estimated that there will be no significant increase in radioactive Iodine and Tritium discharged to the environment as a result of the proposed modification from that previously evaluated in the Final Environmental Statement dated November 1972 for the operation of Monticello Nuclear Generating Plant. See answer to Question 11 also.

7. How much Tritium will be discharged to the environment in Curies per year? What is the total amount to 1991?

See response to Question #6.

8. How much other radioactive gases will be discharged to the environment in Curies per year? What is the amount to 1991?

See the responses to Questions #5 and #6. The only radioactive gas released in significant quantities from the pool due to the pool modification is Krypton 85.

9. Why not filter all radioactive Iodine releases from plant through charcoal filters?

Appendix I to 10 CFR Part 50 defines levels of radioactive gaseous and liquid effluents from a nuclear plant which are "as low as is reasonably achievable." This includes a cost benefit section which balances the societal cost of the exposure with the cost of reducing that exposure. If levels of radioactive Iodine are low enough, it is not cost beneficial to reduce them further by filtering through charcoal.

There are no charcoal filters in the building ventilation systems at Monticello for normal effluents. These filters were not considered necessary to keep normal releases of radioactive iodine within the Appendix I design objectives during licensing of the plant. The plant has a standby gas treatment system with charcoal filters available for situations when the releases of radioactive iodine may be too high to comply with the requirements of the technical specifications. This system is designed to reduce the radiological consequences of an accident and was not intended for continuous operation to reduce radioactive iodine in normal effluents. In late 1975, a charcoal filter was

added to the condenser air ejector system to reduce the amounts of radioactive iodine from the plant.

10. How much Tritium and other radioactive material is released to the water environment per year? How much increase will be due to the enlarged SFP?

The following data are the amounts of activity released to the water environment between 1971 and 1977 from Monticello. The data are from NUREG-0367 which is based upon semi-annual reports from the plant. The expected increase in such effluents from the plant due to the enlarged SFP is given in the responses to Questions 5 to 8.

	Activity Released in Liquid Effluents	
Year	Tritium	Other Activity
1971*	0.6 Ci	< 0.1 Ci
1972*	< 0.1 Ci	< 0.1 Ci
1973*	0	0
1974*	0	0
1975*	0	0
1976*	0	0
1977**	0	0

* NUREG-0367 (1971 to 1976)

** Semi-annual Reports (1977)

11. What is the meaning of the following statement:

"Since some airborne releases of radioactive Iodine and Tritium gases to the atmosphere, which results from leakages of reactive coolant may be small compared to the amount normally released?"

To our knowledge, we have not written this statement in any document. Since the statement is out of context, we do not know how to respond.

12. What is the amount of both gases (radioactive Iodine and Tritium) that is normally released? Why are these gases not directed to the charcoal filters?

The following data are the amounts of gaseous Tritium and radioactive Iodine released from Monticello between 1972 and 1977.

	Curies/Year Gaseous Effluent	
Year	Tritium	Iodine
1972*	4.64+	4+
1973*	NR++	6.53++
1974*	NR	47.6
1975**	66	15.2
1976***	77	1.02
1977****	139	0.62

* EPA-520 13-77-006
** NUREG 0218
*** NUREG 0367
**** Semi-Annual Reports

\+ January to June only
++ NR = Not reported

Tritium cannot be filtered by charcoal filters.

Iodines can be filtered by charcoal filters and should be filtered if releases of Iodines are greater than the requirements in the plant

Technical Specifications which specify design objectives for the plant. The plant should have releases lower than the design objectives and should use radwaste treatment system equipment to keep releases below the design objectives. If releases are below the objectives, the licensee may not have to use his equipment to further reduce releases because it is not cost beneficial to do so. See the response to Question #9.

It should be noted that in 1976 and 1977 the gaseous radioiodines from Monticello had decreased relative to prior years. This was mostly due to the installation and operation of a new waste gas treatment system which is more effective than their previous system. The new system includes charcoal adsorbers and gas storage tanks to reduce the amounts of radioactive iodine and noble gas released from the plant.

13. About the assumptions you've made concerning the fuel pool temperatures and concerning the occupational radiation exposure. Also, the assumptions you have made on page 9 where you state that the increase in occupational radiation exposure to individuals in the Spent Fuel Pool would be negligible. What do you mean by negligible?

(a) occupational radiation exposure:

On page 9 of the Safety Evaluation dated April 14, 1978, for the Monticello SFP modification, we state that "the spent fuel assemblies themselves contribute a negligible amount to dose rates in the pool area because of the depth of water shielding the fuel. The occupational radiation exposure resulting from the proposed

action represents a negligible burden." The references to "a negligible amount" or "a negligible burden" mean that the additional occupation exposure to workers in the vicinity of the pool from the additional spent fuel in the modified pool is so small, compared to the occupational exposure from the activity in the water, that it is not considered. The additional exposure from the additional fuel is about 10^{-6} mrem/hour whereas the exposure from the activity in the pool water is typically 1 mrem/hour.

(b) fuel pool temperature:

The additional spent fuel to be stored in the modified pool is not expected to increase the bulk water temperature above the value in the design analysis of the pool. Therefore, we do not expect that there will be a significant change in the annual release of Tritium and radioiodine from the pool as a result of the pool modification from that evaluated in the Final Environmental Statement dated November 1972 for Monticello. When we state that we do not expect a significant change in these releases, we mean the change in these releases should be less than 1%.

In addition, there are plant radiological effluent Technical Specifications which limit the total releases of gaseous activity from the plant including the activity from the pool. These specifications will not be changed by the modification of the pool.

FROM:	ACTION CONTROL	DATES	CONTROL NO. 05183
Steve J. Gadler St. Paul, Minn.	COMPL. DEADLINE	1/19/79	
	ACKNOWLEDGMENT		DATE OF DOCUMENT 12/29/78
	INTERIM REPLY		
TO: Chairman Hendrie	FINAL REPLY		PREPARE FOR SIGNATURE OF: ☐ CHAIRMAN ☐ EXECUTIVE DIRECTOR OTHER: Denton
	FILE LOCATION	1/26/79	

DESCRIPTION ☐ LETTER ☐ MEMO ☐ REPORT ☐ OTHER	SPECIAL INSTRUCTIONS OR REMARKS
Requests response to his letter dtd 5/18/78 addressed to George Lear concerning the Monticello plant	SECY 79-0022

CLASSIFIED DATA

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JCAE NOTIFICATION RECOMMENDED: ☐ YES ☐ NO

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EXECUTIVE DIRECTOR FOR OPERATIONS

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Steve J. Gadler St. Paul, Minn.	COMPL DEADLINE	1/15/79	05183
	ACKNOWLEDGMENT		DATE OF DOCUMENT
	INTERIM REPLY		12/20/78
TO:			PREPARE FOR SIGNATURE OF:
Chairman Hendrie	FINAL REPLY		☐ CHAIRMAN ☐ EXECUTIVE DIRECTOR
	FILE LOCATION		OTHER: Denton

DESCRIPTION ☐ LETTER ☐ MEMO ☐ REPORT ☐ OTHER

Requests response to his letter dtd 6/14/78 addressed to George Lear concerning the Monticello plant

SPECIAL INSTRUCTIONS OR REMARKS

SECY 78-602

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JCAE NOTIFICATION RECOMMENDED: ☐ YES ☐ NO

NRC FORM 232 (11-75)

EXECUTIVE DIRECTOR FOR OPERATIONS

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PRINCIPAL CORRESPONDENCE CONTROL

FROM:
Steve J. Sadler
St. Paul, Minn.

TO:
Chairman Hendrie

ACTION CONTROL	DATES
COMPL DEADLINE	1/19/79
ACKNOWLEDGMENT	
INTERIM REPLY	
FINAL REPLY	
FILE LOCATION	

CONTROL NO. 05183

DATE OF DOCUMENT 12/29/78

PREPARE FOR SIGNATURE OF:
☐ CHAIRMAN
☐ EXECUTIVE DIRECTOR
OTHER: Denton

DESCRIPTION ☐ LETTER ☐ MEMO ☐ REPORT ☐ OTHER

Requests response to his letter dtd 5/14/74 addressed to George Lear concerning the Monticello plant

SPECIAL INSTRUCTIONS OR REMARKS

SECY 78-2022

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Gossick
Bates

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COMMENTS, NOTIFY:
_____ EXT. _____

JCAE NOTIFICATION RECOMMENDED: ☐ YES ☐ NO

NRC FORM 232
(11-75)

EXECUTIVE DIRECTOR FOR OPERATIONS

PRINCIPAL CORRESPONDENCE CONTROL

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FROM:
Steve J. Sadler
St. Paul, Minn.

TO:
Chairman Hendrie

ACTION CONTROL	DATES
COMPL DEADLINE	7/19/79
ACKNOWLEDGMENT	
INTERIM REPLY	
FINAL REPLY	
FILE LOCATION	

CONTROL NO. 05183

DATE OF DOCUMENT
12/26/78

PREPARE FOR SIGNATURE OF:
☐ CHAIRMAN
☐ EXECUTIVE DIRECTOR
OTHER: Gossick

DESCRIPTION ☐ LETTER ☐ MEMO ☐ REPORT ☐ OTHER

Requests response to his letter dtd 6/16/78 addressed to George Lear concerning the Monticello plant

SPECIAL INSTRUCTIONS OR REMARKS

SECY 79-0022

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NUMBER OF PAGES		CATEGORY	
POSTAL REGISTRY NO.		☐ NSI ☐ RD ☐ FRD	

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		Kalo

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JCAE NOTIFICATION RECOMMENDED: ☐ YES ☐ NO

NRC FORM 232
(11-75)

EXECUTIVE DIRECTOR FOR OPERATIONS

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PRINCIPAL CORRESPONDENCE CONTROL

79-0022

No. XXXXXXXXXX Logging Date 1/8/79

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- ☐ Commissioner _____ Date _____
- XXX Exec. Dir./Oper.
- ☐ Gen. Counsel
- ☐ Cong. Liaison
- ☐ Solicitor
- ☐ Public Affairs
- ☐ Secretary
- ☐ _____

Incoming: Steve Gadler
From: 2120 Cater Avenue
St. Paul, Minn. 55108
To: Chairman HEndrie Date 12/29/78
Subject: Requ$$s info. re: Staff's Safety Evaluatio for Monticello N plant.

☐ Prepare reply for signature of:
- ☐ Chairman
- ☐ Commissioner _____
- ☐ EDO, GC, CL, SOL, PA, SECY
- ☐ Signature block omitted
- ☐ _____
- ☐ Return original of incoming with response

XXXX For direct reply* Suspense: Jan. 15
- ☐ For appropriate action
- ☐ For information
- ☐ For recommendation

Remarks: Cpys to: RF
Original to Docket.

For the Commission: Combs

*Send three (3) copies of reply to Secy Mail Facility

NRC-62

Rec'd Off. EDO
Date 1-9-79
Time 1230

ACTION SLIP

teve J. Gadler, P.E. 2120 Carter Avenue, St. Paul, Minnesota 55108 Telephone: 646-5005

December 29, 1978

Chairman
United States Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Chairman:

On the 18th of May, 1978, I sent a letter to Mr. George Lear, Chief, Operating Reactor Branch #3, Division of Operating Reactors, concerning Docket #50-263.

In that letter, I requested certain information and I am including a copy of that letter for your reference.

I have, in the past, received several telephone calls in which one individual told me it was impossible to answer the questions and another individual telling me that in a subsequent call that I would receive an answer to that letter. I have never received satisfaction to my letter and need your assistance.

I tried to call Mr. Lear on the telephone but I understand he has been transferred to another division and consequently under the circumstances he probably would not follow-up on the important questions I have requested.

I will appreciate your assistance in obtaining the answers for me to the list of questions as they appear on my letter, which is attached dated May 18, 1978.

Thank you.

Sincerely,

Steve J. Gadler

SJG:ln

Enclosure

eve J. Gadler, P.E. 2120 Carter Avenue, St. Paul, Minnesota 55108 Telephone: 646-5005

May 18, 1978

United States Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors
Docket #50-263

Dear Mr. Lear:

Thank you for sending the Commission's Amendment #34 to Provisional Operating License #DPR-22 together with NRC's Safety Evaluation for the Monticello Nuclear Generating Plant.

Please furnish answers to the following:

1. What is the present amount of curies stored at Monticello?

2. What will be the amount of curies at Monticello after the October, 1978 refueling?

3. What will be the amount of curies in 1991?

4. What will be the total amount of curies discharged to the environment by the enlarged Spent Fuel Pool to the year 1991?

5. How much radioactive krypton will be discharged to the environment in curies per year? What is total amount to 1991?

6. How much radioactive iodine will be discharged to the environment in curies per year? What is total amount ot 1991?

7. How much radioactive tritium will be discharged to the environment in curies per year? What is the total amount to 1991?

8. How much other radioactive gases will be discharged to the environment in curies per year? What is the total amount to 1991?

Throughout the report, you mention charcoal filters for removal of radioactive iodine and I'm wondering why all radioactive iodine is not filtered through the charcoal instead of released to the environment. I oppose, as do others, the release of any radioactive iodine to the environment, or for that matter any radioactivity to environment.

How much tritium is released to the water environment in curies per year? How much other radioactive material is released to the water environment per year? How much increase due to enlarged SFP?

What is the meaning of the following statement:

> "Since some airborne releases of radioactive iodine and tritium gases to the atmosphere, which results from leakages of reactive coolant may be small compared to the amount normally released"?

What is the amount in curies of both gases that is normally released? Why are these gases not directed to the charcoal filters?

About the assumptions you've made concerning the fuel pool temperatures and concerning the occupational radiation exposure. Also the assumptions you have made on page 9 where you state that the increase in occupational radiation exposure to individuals in the Spent Fuel Pool would be negligible. What do you mean by negligible?

Thank you for your help in the above.

Sincerely,

Steve J. Gadler
Member of MPCA Board

SJG/slt