

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 VASSALLO, D.B. Operating Reactors Branch 2

SUBJECT: Forwards offsite dose calculation manual, per proposed radiological effluent Tech Spec dtd 840201. Response to Franklin Research Ctr comments re 830301 offsite dose calculation manual also encl.

DISTRIBUTION CODE: A009S COPIES RECEIVED: LTR 3 ENCL 40 SIZE: 6+83
 TITLE: OR/Licensing Submittal: Appendix I

NOTES:

	RECIPIENT ID CODE/NAME		COPIES LTTR ENCL		RECIPIENT ID CODE/NAME		COPIES LTTR ENCL
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INTERNAL:	ELD/HDS3	19	1	0	NRR/DL/ORAB		1 0
	NRR/DSI/AEB		1	0	NRR/DSI/METB	08	1 1
	NRR/DSI/RAB	10	1	1	<u>REG FILE</u>	04	1 1
	RGN1		1	1			
EXTERNAL:	ACRS	11	6	6	LPDR	03	1 1
	NRC PDR	02	1	1	NSIC	05	1 1
	NTIS		1	1			

1. The first part of the document is a letter from the President of the United States to the Congress, dated January 1, 1861. It is a formal address, and it is the first of its kind since the signing of the Constitution. The President, James Buchanan, is addressing the Congress, and he is doing so in a formal and dignified manner. He is discussing the state of the Union, and he is discussing the issues that are facing the country at that time. He is discussing the issue of slavery, and he is discussing the issue of secession. He is discussing the issue of the rights of the states, and he is discussing the issue of the rights of the federal government. He is discussing the issue of the rights of the people, and he is discussing the issue of the rights of the future generations. He is discussing the issue of the rights of the Union, and he is discussing the issue of the rights of the world. He is discussing the issue of the rights of the future, and he is discussing the issue of the rights of the past. He is discussing the issue of the rights of the present, and he is discussing the issue of the rights of the future. He is discussing the issue of the rights of the Union, and he is discussing the issue of the rights of the world. He is discussing the issue of the rights of the future, and he is discussing the issue of the rights of the past. He is discussing the issue of the rights of the present, and he is discussing the issue of the rights of the future.

1. The first part of the document is a list of names and addresses, which appears to be a directory or a list of contacts. The names are written in a cursive script, and the addresses are written in a more formal, printed style.

姓名	性别	年龄	籍贯	职业	文化程度	政治面貌	备注
王德胜	男	45	山东烟台	教师	高中	中共党员	
李秀英	女	38	河南郑州	护士	初中	共青团员	
张国强	男	52	江苏苏州	工程师	大学	中共党员	
刘小红	女	28	四川成都	会计	高中	共青团员	
陈为民	男	40	广东广州	医生	大学	中共党员	
赵子龙	男	35	湖南长沙	记者	高中	共青团员	
周小芳	女	32	浙江杭州	作家	大学	中共党员	
吴大伟	男	48	湖北武汉	律师	大学	中共党员	
孙丽娟	女	25	福建厦门	程序员	高中	共青团员	
郑为民	男	55	广西桂林	农民	小学	中共党员	
冯小华	女	30	江西九江	教师	初中	共青团员	
马国强	男	42	山西太原	工人	高中	中共党员	
徐小丽	女	27	安徽合肥	护士	高中	共青团员	
郭为民	男	50	陕西西安	干部	大学	中共党员	
黄小芳	女	33	云南昆明	教师	初中	共青团员	
曹大伟	男	47	贵州贵阳	工人	高中	中共党员	
周小华	女	29	四川成都	会计	高中	共青团员	
吴为民	男	53	广东广州	医生	大学	中共党员	
孙小芳	女	26	福建厦门	程序员	高中	共青团员	
郑大伟	男	49	广西桂林	农民	小学	中共党员	
冯小华	女	31	江西九江	教师	初中	共青团员	
马国强	男	43	山西太原	工人	高中	中共党员	
徐小丽	女	28	安徽合肥	护士	高中	共青团员	
郭为民	男	51	陕西西安	干部	大学	中共党员	
黄小芳	女	34	云南昆明	教师	初中	共青团员	
曹大伟	男	46	贵州贵阳	工人	高中	中共党员	
周小华	女	30	四川成都	会计	高中	共青团员	
吴为民	男	54	广东广州	医生	大学	中共党员	
孙小芳	女	27	福建厦门	程序员	高中	共青团员	
郑大伟	男	50	广西桂林	农民	小学	中共党员	
冯小华	女	32	江西九江	教师	初中	共青团员	
马国强	男	44	山西太原	工人	高中	中共党员	
徐小丽	女	29	安徽合肥	护士	高中	共青团员	
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郭为民	男	53	陕西西安	干部	大学	中共党员	
黄小芳	女	36	云南昆明	教师	初中	共青团员	
曹大伟	男	49	贵州贵阳	工人	高中	中共党员	
周小华	女	32	四川成都	会计	高中	共青团员	
吴为民	男	56	广东广州	医生	大学	中共党员	
孙小芳	女	29	福建厦门	程序员	高中	共青团员	
郑大伟	男	52	广西桂林	农民	小学	中共党员	
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冯小华	女	35	江西九江	教师	初中	共青团员	
马国强	男	47	山西太原	工人			

March 7, 1984

Director of Nuclear Reactor Regulation
Attention: Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Nine Mile Point Unit 1
Docket No. 50-220
DPR-63

Dear Mr. Vassallo:

Niagara Mohawk Power Corporation hereby transmits three (3) originals and forty (40) copies of Niagara Mohawk's Nine Mile Point Unit 1's Offsite Dose Calculation Manual.

The Nine Mile Point Unit 1 Offsite Dose Calculation Manual contained herein pertains to our proposed Radiological Effluent Technical Specification dated February 1, 1984.

Previous discussion with your staff on a draft Offsite Dose Calculation Manual indicated a need for additional information on selected items contained therein. The additional information is in response to Franklin Research Center (FRC) comments regarding Niagara Mohawk's March 1, 1983 Offsite Dose Calculation Manual submittal. Franklin Research Center comments are contained in correspondence to your staff dated April 28, 1983. The additional information is provided in an attachment to this letter.

Sincerely,

NIAGARA MOHAWK POWER CORPORATION

8403130340 840307
PDR ADOCK 05000220
PDR

T. E. Lempges
T. E. Lempges
Vice President
Nuclear Generation

CVM/AMS:djm
Attachment

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THE UNITED STATES OF AMERICA
DO hereby certify that
[Name] is a citizen of the United States
and is entitled to the rights and
privileges of citizenship.

Witness my hand and seal
this [Date] day of [Month], 19[Year].
[Signature]
[Title]

Notary Public for the State of [State]

I, [Name], do hereby certify that [Name] is a citizen of the United States
and is entitled to the rights and privileges of citizenship.

I, [Name], do hereby certify that [Name] is a citizen of the United States
and is entitled to the rights and privileges of citizenship.

I, [Name], do hereby certify that [Name] is a citizen of the United States
and is entitled to the rights and privileges of citizenship.

Notary Public for the State of [State]

I, [Name], do hereby certify that [Name] is a citizen of the United States
and is entitled to the rights and privileges of citizenship.

I, [Name], do hereby certify that [Name] is a citizen of the United States
and is entitled to the rights and privileges of citizenship.

Notary Public for the State of [State]

Franklin Research Center's comments and Niagara Mohawk Power Corporation's response to the draft Offsite Dose Calculation Manual for Nine Mile Point Unit 1 dated March 1, 1984.

1. Franklin Research Center Comment: A 30 day liquid effluent dose projection for the use of the liquid radwaste treatment should be included.

Response:

Prior to any liquid effluent release from the Nine Mile Point Unit 1 Radioactive Waste Treatment System, a determination is made for a dose estimate associated with the liquid effluent release. Since these liquid effluent releases are in batches (see table below) rather than continuous, and since the liquid radwaste system is always in use, a 30 day liquid effluent dose projection for determining the use of the system is not necessary. Therefore, the dose projections will be performed prior to a liquid effluent release.

Batch Liquid Effluent Releases

<u>Time Interval</u>	<u># of Batch Releases</u>
1981 (1st half)	4
1981 (2nd half)	1
1982 (1st half)	0
1982 (2nd half)	2
1983 (1st half)	7
1983 (2nd half)	0

2. Franklin Research Center Comment: Maps indicating environmental monitoring sample locations should be provided.

Response:

Maps indicating environmental monitoring sample locations are included in the Offsite Dose Calculation Manual as Figures 5.1-1 and 5.1-2.

3. Franklin Research Center Comment: Diagrams showing drawings of the liquid and gaseous radwaste treatment systems should be included.

Response:

Several diagrams relating to the Nine Mile Point Unit 1 liquid and gaseous Radioactive Waste Treatment Systems are contained in the Offsite Dose Calculation Manual. These diagrams are contained in Appendix B.

4. Franklin Research Center Comment: The licensee should provide the values of the on site specific parameters used on Page 7 or reference tables in Regulatory Guide 1.109 from which the standard parameters are taken.

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Response:

The parameters used for the liquid effluent dose pathway are identified in Table 2-2 of the manual. This table shows site specific values and reference to Regulatory Guide 1.109 where appropriate.

5. Franklin Research Center Comment: The decay expression should be corrected for a (-) sign.

Response:

The appropriate decay expression in the liquid effluent pathway dose contribution formula has been provided.

6. Franklin Research Center Comment: The licensee should state the bases of the derivation of the projected dose formulas.

Response:

The bases for the derivation calculations used to project doses to an adult whole body and a teen liver are provided in Section 2.2.1 of the manual. As indicated in this section, it has been determined by historical data that greater than 95 percent of the dose to target organs comes from the ingestion of fish. A term of 1.05 is used in the equation as a conservative factor to increase the projected dose from 95 percent to 100 percent.

7. Franklin Research Center Comment: The annual dose objectives used by the licensee are higher than specified by NUREG 0473.

Response:

The annual dose objectives from liquid effluents are consistent with the proposed Radiological Effluent Technical Specifications for Nine Mile Point Unit 1 dated February 1, 1984. These dose objectives are equal to or less than 3.0 mrem and 10 mrem for total body and any organ, respectively.

8. Franklin Research Center Comment: The licensee should show the derivation of the equation for release rate limit for noble gases and demonstrate consistency with Regulatory Guide 1.109.

Response:

The derivation of the equation for the release rate limit for noble gases is provided in the Bases for Gaseous Waste Specifications found in the Nine Mile Point Unit 1 Technical Specification, Appendix B. In an internal U. S. Atomic Energy Commission memorandum dated October 11, 1984, Mr. Victor Benaroya, Chief of the Effluent Treatment System Branch, Directorate of Licensing, presented this derivation to Daniel Muller, Assistant Director for Environmental Projects. Nine Mile Point has used

Response: (cont'd)

this equation since this time. A method for establishing the setpoints for the Nine Mile Point Unit 1 stack monitor is contained in the station procedures

9. Franklin Research Center Comment: The licensee should be specific about radioiodine isotopes, i.e I-131 and I-133. Also, tritium should be included for dose calculations.

Response:

Section 3.2.1.2 of the revised manual indicates that Iodine-131, Iodine-133, tritium and particulates with half lives greater than eight days will be used to determine the appropriate dose rate.

10. Franklin Research Center Comment: The licensee should show the derivation for the average annual release rate of radioiodines and particulates with half lives greater than eight days. Also demonstrate consistency with Regulatory Guide 1.109.

Response:

The derivation of the equation used to determine the average annual release rate of radionuclides, tritium and particulates in Section 3.2.1.2 can be found in the Nine Mile Point Unit 1 Technical Specifications, Appendix B. The Bases for Gaseous Waste Specification in Appendix B states that the dose calculations have been made for the critical sectors and critical pathways for all radionuclides and radioactive material in particulate for with half lives greater than eight days. The calculations take into consideration site meteorology for these releases.

This information is also presented in an internal U.S. Atomic Energy Commission memorandum dated October 11, 1974 by Mr. Victor Benaroya, Chief of the Effluent Treatment Systems Branch, Directorate of Licensing to Mr. Daniel Muller, Assistant Director for Environmental Projects. Nine Mile Point Unit 1 has used this equation for determining the average annual release rate of radioiodines and particulates since that time.

11. Franklin Research Center Comment: Since the licensee has an elevated release from the stack, direct contribution from the elevated plume should be considered.

Response:

The dose determination methods discussed in Section 3.2.2 of the manual use critical receptor doses. In all cases for Nine Mile Point Unit 1, the plume is considered to be on the ground since this would provide the maximum dose to critical receptors. Direct dose contribution from an elevated plume is not considered in the manual since it would not be as conservative as considering the plume to be on the ground. Considering critical receptor submersion in the plume, as is done at Nine Mile Point Unit 1, is in all cases more conservative than simply considering direct dose from an elevated plume.



12. Franklin Research Center Comment: The annual dose objectives from noble gases used by licensee are higher than specified by NUREG 0473.

Response:

Annual dose objectives from noble gases, radioiodines, tritium and particulates effluents are consistent with those values indicated in the proposed Radiological Effluent Technical Specifications for Nine Mile Point Unit 1 dated February 1, 1984 and those specified by NUREG 0473.

13. Franklin Research Center Comment: The licensee should also consider contribution from the elevated plume for air dose at the critical receptor due to noble gas for gamma radiation.

Response:

As indicated in Item No. 8, consideration of gamma dose contribution from an elevated release point is not appropriate since it is not as conservative as the presented methodology used at Nine Mile Point Unit 1 for determining doses due to gaseous effluent releases.

14. Franklin Research Center Comment: The licensee should include Iodine-131 and Iodine-133 in the monthly gaseous dose determinations.

Response:

Section 3.2.2.2 was revised to indicate that dose determinations will include Iodine-131, Iodine-133, tritium and particulates with half lives greater than eight days.

15. Franklin Research Center Comment: The licensee should provide the derivation of the dose factors and the site specific parameters used for the dose factors.

Response:

Appendix A to the revised manual provides information on the dose parameters and derivation of the dose factor for each isotope considering the exposure pathway, age group and target organ in the formula. This formula is to determine dose from radioiodines, tritium and particulates (Section 3.2.2.2 of the manual). The parameters found in Appendix A are taken from NUREG-0133 and Regulatory Guide 1.109, Revision 1.

16. Franklin Research Center Comment: The licensee should show a method to assess direct dose components for evaluating 40CFR190.

Response:

Direct dose components as a result of the reactor, turbine and radwaste buildings and outside radioactive storage tanks may be evaluated by engineering calculations or by evaluating environmental TLD results at critical receptor locations, site boundary or other special interest locations. More information concerning an evaluation of 40CFR190 dose limits appear in the revised Section 4.0 of the manual.

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17. Franklin Research Center Comment: NUREG 0473 specifies 20 percent higher not five times for D/Q values with respect to evaluating new milk sampling locations.

Response:

Section 5.1 of the manual indicates that if a D/Q value at a new milk sampling location is 50 percent greater than the D/Q value at an existing milk sampling location, this new milk sampling location will be added to the environmental sampling location. The 50 percent greater level was agreed to between Niagara Mohawk and NRC staff during a telecon of November 10, 1983 and is reflected in the proposed Radiological Effluent Technical Specifications to Nine Mile Point Unit 1 dated February 1, 1984.

18. Franklin Research Center Comment: X/Q values in Table 3-2 appear to be lower than values used by the Nuclear Regulatory Commission in November 1977.

Response:

The X/Q values indicated in Table 3-2 of the manual have been revised and are based on five years of historical meteorological data. These values are specific to Nine Mile Point Unit 1.

19. Franklin Research Center Comment: Provide appropriate figures to manual.

Response:

Figure 5.1-1 of the proposed Radiological Effluent Technical Specifications provides information on the Nine Mile Point site. Figures 5.1-1 and 5.1-2 of the Manual provide onsite and offsite environmental monitoring locations.

