

**NIAGARA  
MOHAWK**

NIAGARA MOHAWK POWER CORPORATION/301 PLAINFIELD ROAD, SYRACUSE, NEW YORK 13212/TELEPHONE (315) 428-7494

Ralph Sylvia  
Executive Vice President  
Nuclear

May 3, 1991  
NMP1L 0580

**U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D. C. 20555**

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

**Gentlemen:**

**Attached is Niagara Mohawk Power Corporation's response to the Notice of Violation contained in Inspection Report Number 50-220/91-10 dated April 4, 1991.**

**Sincerely,**

*B. Ralph Sylvia*

**B. Ralph Sylvia  
Exec. Vice President - Nuclear**

/bwr  
NMP

pc: **Regional Administrator, Region 1**  
**Mr. W. A. Cook, Sr. Resident Inspector**  
**Records Management**

~~9105090246~~



APPENDIX A  
NOTICE OF VIOLATION

Niagara Mohawk Power Corporation  
Nine Mile Point Unit 1

Docket No. 50-220  
License No. DPR-63

As a result of the inspection conducted on March 26, 1991, by a representative of the Washington Department of Health, of a shipment of licensed material sent from your facility on March 12, 1991, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions", 10 CFR Part 2, Appendix C (1990), the violation is listed below:

10 CFR 71.87(i)(2) states in part that "...in the case of packages transported as exclusive use shipments by rail or highway only, the non-fixed radioactive contamination at any time during transport must not exceed ten times the levels prescribed in paragraph (i)(1) of this section. 10 CFR 71.87(i)(1) states in part that "...the amount of radioactivity measured on any single wiping material...must not exceed the limits given in Table V of this part...other methods of assessment...may be used...the detection efficiency of the other methods must be taken into account and in no case may the non-fixed contamination on the external surfaces of the package exceed ten times the limits listed in Table V...". Table V of 10 CFR 71.87 lists the maximum permissible limit for beta-gamma emitting radionuclides as 22 disintegrations per minute per centimeter squared (22 dpm/sq cm).

Contrary to the above, on March 12, 1991, the licensee shipped an IF-300 rail cask containing approximately 45,000 Curies of licensed material which upon receipt at the Hanford Disposal site in Richland, Washington, was determined to have non-fixed contamination levels in excess of 2000 dpm/sq cm. The efficiency of the Richland Disposal Sites contamination determination methodology is 49%, giving a maximum permissible non-fixed contamination level of approximately 1100 dpm/sq cm.

This is a Severity Level IV violation (Supplement V).



REPLY TO NOTICE OF VIOLATION 50-220/91-10

1. REASON FOR THE VIOLATION

NMPC admits to the violation. The IF-300 rail cask, shipped by NMPC on March 12, 1991, was surveyed at the Hanford site and found to have non-fixed contamination levels "in excess of 2000 dpm/sq cm".

The Root Cause for this violation was that NMPC concentrated on reducing the removable contamination to comply with the regulation, but did not adequately investigate and control the factors that contribute to the cask "weeping" phenomenon.

One of the factors which contributed to cask "weeping" was the amount of time the cask was submerged in the spent fuel pool. Cask clearance, rigging, and liner problems caused the cask to remain in the spent fuel pool for five days.

An increase in fixed contamination levels may be a warning of higher "weeping" rates later. NMPC did not take baseline fixed contamination measurements of the cask on its arrival, and therefore, could not evaluate the increase in apparently fixed contamination.

Steam cleaning is an aggressive method to decontaminate a cask surface to reduce the "weeping" rate. This cask was steam cleaned on March 6. However, subsequent decontaminations were performed by hand, in part because the steam cleaner malfunctioned.

Since routine decontamination efforts were successful in reducing the removable contamination, more aggressive cleaning agents were not considered to address fixed contamination on the cask surface.

Finally, temperature, temperature fluctuations, and humidity may affect the weep rate. This cask was subject to a wide variety of weather conditions for a 14-day period. The cask was transported for six days, then held at its destination for eight days before it was surveyed by the burial site operator.



2. CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND RESULTS ACHIEVED

Upon notification of the cask survey at the Hanford Burial Site on March 26, 1991, NMPC initiated a Radiological Occurrence Report (ROR) to investigate the cask handling. The ROR (1-91-0020) was completed and approved on April 5, 1991.

On April 9, 1991, Unit 1 Radiation Protection Manager met with Waste Management officials in Olympia, Washington to personally deliver and explain the NMPC action plan to achieve full compliance with 10 CFR 71.87(i)(2) (and 49 CFR 173.443(a)). On April 16, 1991 NMPC was notified that the State of Washington had accepted the NMPC action plan and had reinstated NMPC's access to the Hanford Disposal Site.

3. CORRECTIVE STEPS TO AVOID FURTHER VIOLATIONS

NMPC has conferred with the cask owner, Pacific Nuclear Services (PNS), regarding the cask surface. PNS has agreed to electro-polish the cask before it is again used by NMPC. This will provide additional assurance that the cask can be shipped and received using normal methods of decontamination.

The cask radiation survey procedure has been revised to direct technicians to conduct fixed as well as removable contamination surveys when the cask is received. This survey will establish a reference for changes in fixed contamination.

NMPC is revising the cask handling procedure to minimize the cask immersion time in the spent fuel pool and to require that the cask will be sprayed with demineralized water before it is immersed and while it is being lowered into the pool. The cask will also be sprayed with demineralized water as it is removed from the spent fuel pool.

Immediately upon extraction from the spent fuel pool, the cask will undergo decontamination by steam cleaning and approved cleaning solutions.

The cask will not be released from the refuel floor until it has been decontaminated below administrative limits and cask weeping rates have been measured and evaluated.





The cask, after being loaded on a railcar, will be placed outside to allow it to be subjected to temperature and humidity fluctuations. It will then be moved inside, surveyed, and the daily weep rate computed and evaluated. If the cask can be decontaminated by routine methods to less than administrative limits and the amount of weeping can be predicted over the estimated shipping time to be well within regulatory limits, the cask will be approved for shipment.

If the criteria for shipment are not met, the cask will be decontaminated and placed outside for a second observation period. If the shipping criteria cannot be met after this second observation period, NMPC Senior Management and the cask owner will be immediately notified and asked to review the issue.

NMPC will not ship the cask until it has conferred with the burial site operator and requested that the cask be surveyed and handled as soon as it arrives at the rail siding.

The Root Cause Evaluation of this incident has been distributed to appropriate site Radiation Protection and Radwaste management personnel.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Niagara Mohawk will implement all the corrective actions relating to this incident before it again immerses the IF-300 or similar cask in the spent fuel pool.



# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9105070246      DOC. DATE: 91/05/03      NOTARIZED: NO      DOCKET #  
 FACIL: 50-220 Nine Mile Point Nuclear Station, Unit 1, Niagara Powe      05000220  
 AUTH. NAME      AUTHOR AFFILIATION  
 SYLVIA, B.R.      Niagara Mohawk Power Corp.  
 RECIP. NAME      RECIPIENT AFFILIATION  
                                  Document Control Branch (Document Control Desk)

SUBJECT: Responds to NRC 910404 ltr re violations noted in Insp Rept  
 50-220/91-10 on 910326. Corrective actions: Pacific Nuclear  
 Svcs, cask owner, agreed to electro-polish cask before  
 continued use by util & cask handling procedure revised.

DISTRIBUTION CODE: IE01D      COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5  
 TITLE: General (50 Dkt)-Insp Rept/Notice of Violation Response

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD1-1 PD	1 1	BRINKMAN, D	1 1
INTERNAL:	ACRS	2 2	AEOD	1 1
	AEOD/DEIIB	1 1	AEOD/TPAB	1 1
	DEDRO	1 1	NRR MORISSEAU, D	1 1
	NRR SHANKMAN, S	1 1	NRR/DLPQ/LPEB10	1 1
	NRR/DOEA/OEAB	1 1	NRR/DREP/PEPB9D	1 1
	NRR/DRIS/DIR	1 1	NRR/DST/DIR 8E2	1 1
	NRR/PMAS/ILRB12	1 1	NUDOCS-ABSTRACT	1 1
	OE DIR	1 1	OGC/HDS1	1 1
	<del>REG FILE 02</del>	1 1	RGN1 FILE 01	1 1
EXTERNAL:	EG&G/BRYCE, J.H.	1 1	NRC PDR	1 1
	NSIC	1 1		

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK,  
 ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION  
 LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 24 ENCL 24



**NIAGARA  
MOHAWK**

NIAGARA MOHAWK POWER CORPORATION/301 PLAINFIELD ROAD, SYRACUSE, NEW YORK 13212/TELEPHONE (315) 428-7494

B. Ralph Sylvia  
Executive Vice President  
Nuclear

May 3, 1991  
NMP1L 0580

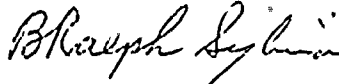
**U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D. C. 20555**

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

**Gentlemen:**

**Attached is Niagara Mohawk Power Corporation's response to the Notice of Violation contained in Inspection Report Number 50-220/91-10 dated April 4, 1991.**

**Sincerely,**



**B. Ralph Sylvia  
Exec. Vice President - Nuclear**

/bwr  
NMP

**pc: Regional Administrator, Region I  
Mr. W. A. Cook, Sr. Resident Inspector  
Records Management**

9105070246 910503  
PDR ADOCK 05000220  
R PDR

JEDI



APPENDIX A  
NOTICE OF VIOLATION

Niagara Mohawk Power Corporation  
Nine Mile Point Unit 1

Docket No. 50-220  
License No. DPR-63

As a result of the inspection conducted on March 26, 1991, by a representative of the Washington Department of Health, of a shipment of licensed material sent from your facility on March 12, 1991, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions", 10 CFR Part 2, Appendix C (1990), the violation is listed below:

10 CFR 71.87(i)(2) states in part that "...in the case of packages transported as exclusive use shipments by rail or highway only, the non-fixed radioactive contamination at any time during transport must not exceed ten times the levels prescribed in paragraph (i)(1) of this section. 10 CFR 71.87(i)(1) states in part that "...the amount of radioactivity measured on any single wiping material...must not exceed the limits given in Table V of this part...other methods of assessment...may be used...the detection efficiency of the other methods must be taken into account and in no case may the non-fixed contamination on the external surfaces of the package exceed ten times the limits listed in Table V...". Table V of 10 CFR 71.87 lists the maximum permissible limit for beta-gamma emitting radionuclides as 22 disintegrations per minute per centimeter squared (22 dpm/sq cm).

Contrary to the above, on March 12, 1991, the licensee shipped an IF-300 rail cask containing approximately 45,000 Curies of licensed material which upon receipt at the Hanford Disposal site in Richland, Washington, was determined to have non-fixed contamination levels in excess of 2000 dpm/sq cm. The efficiency of the Richland Disposal Sites contamination determination methodology is 49%, giving a maximum permissible non-fixed contamination level of approximately 1100 dpm/sq cm.

This is a Severity Level IV violation (Supplement V).





REPLY TO NOTICE OF VIOLATION 50-220/91-10

1. REASON FOR THE VIOLATION

NMPC admits to the violation. The IF-300 rail cask, shipped by NMPC on March 12, 1991, was surveyed at the Hanford site and found to have non-fixed contamination levels "in excess of 2000 dpm/sq cm".

The Root Cause for this violation was that NMPC concentrated on reducing the removable contamination to comply with the regulation, but did not adequately investigate and control the factors that contribute to the cask "weeping" phenomenon.

One of the factors which contributed to cask "weeping" was the amount of time the cask was submerged in the spent fuel pool. Cask clearance, rigging, and liner problems caused the cask to remain in the spent fuel pool for five days.

An increase in fixed contamination levels may be a warning of higher "weeping" rates later. NMPC did not take baseline fixed contamination measurements of the cask on its arrival, and therefore, could not evaluate the increase in apparently fixed contamination.

Steam cleaning is an aggressive method to decontaminate a cask surface to reduce the "weeping" rate. This cask was steam cleaned on March 6. However, subsequent decontaminations were performed by hand, in part because the steam cleaner malfunctioned.

Since routine decontamination efforts were successful in reducing the removable contamination, more aggressive cleaning agents were not considered to address fixed contamination on the cask surface.

Finally, temperature, temperature fluctuations, and humidity may affect the weep rate. This cask was subject to a wide variety of weather conditions for a 14-day period. The cask was transported for six days, then held at its destination for eight days before it was surveyed by the burial site operator.



2. CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND RESULTS ACHIEVED

Upon notification of the cask survey at the Hanford Burial Site on March 26, 1991, NMPC initiated a Radiological Occurrence Report (ROR) to investigate the cask handling. The ROR (1-91-0020) was completed and approved on April 5, 1991.

On April 9, 1991, Unit 1 Radiation Protection Manager met with Waste Management officials in Olympia, Washington to personally deliver and explain the NMPC action plan to achieve full compliance with 10 CFR 71.87(i)(2) (and 49 CFR 173.443(a)). On April 16, 1991 NMPC was notified that the State of Washington had accepted the NMPC action plan and had reinstated NMPC's access to the Hanford Disposal Site.

3. CORRECTIVE STEPS TO AVOID FURTHER VIOLATIONS

NMPC has conferred with the cask owner, Pacific Nuclear Services (PNS), regarding the cask surface. PNS has agreed to electro-polish the cask before it is again used by NMPC. This will provide additional assurance that the cask can be shipped and received using normal methods of decontamination.

The cask radiation survey procedure has been revised to direct technicians to conduct fixed as well as removable contamination surveys when the cask is received. This survey will establish a reference for changes in fixed contamination.

NMPC is revising the cask handling procedure to minimize the cask immersion time in the spent fuel pool and to require that the cask will be sprayed with demineralized water before it is immersed and while it is being lowered into the pool. The cask will also be sprayed with demineralized water as it is removed from the spent fuel pool.

Immediately upon extraction from the spent fuel pool, the cask will undergo decontamination by steam cleaning and approved cleaning solutions.

The cask will not be released from the refuel floor until it has been decontaminated below administrative limits and cask weeping rates have been measured and evaluated.



The cask, after being loaded on a railcar, will be placed outside to allow it to be subjected to temperature and humidity fluctuations. It will then be moved inside, surveyed, and the daily weep rate computed and evaluated. If the cask can be decontaminated by routine methods to less than administrative limits and the amount of weeping can be predicted over the estimated shipping time to be well within regulatory limits, the cask will be approved for shipment.

If the criteria for shipment are not met, the cask will be decontaminated and placed outside for a second observation period. If the shipping criteria cannot be met after this second observation period, NMPC Senior Management and the cask owner will be immediately notified and asked to review the issue.

NMPC will not ship the cask until it has conferred with the burial site operator and requested that the cask be surveyed and handled as soon as it arrives at the rail siding.

The Root Cause Evaluation of this incident has been distributed to appropriate site Radiation Protection and Radwaste management personnel.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Niagara Mohawk will implement all the corrective actions relating to this incident before it again immerses the IF-300 or similar cask in the spent fuel pool.



24

