Northeast
Utilities System

107 Selden Street, Berlin, CT 06037

Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270
(203) 665-5000

JUN 11 1996

Docket No. 50-423
B15750

Re: EPP

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Millstone Nuclear Power Station, Unit No. 3
Notification of NPDES Permit Modification Request

In accordance with Section 3.2 of the Millstone Unit No. 3 Environmental Protection Plan (EPP), Northeast Nuclear Energy Company hereby provides the NRC with a copy of the proposed changes to NPDES Permit CT0003263 for hydrazine and cooling water flows. The request to amend the permit was submitted to the State of Connecticut Department of Environmental Protection on May 20, 1996.

Should you have any questions, please contact Mr. Thomas Arcari at (860) 665-3713.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

FOR: T. C. Feigenbaum
Executive Vice President and
Chief Nuclear Officer

BY: S. E. Scace
S. E. Scace
Vice President
Nuclear Reengineering Implementation

cc: T. T. Martin, Region I Administrator
V. L. Rooney, NRC Project Manager, Millstone Unit No. 3
A. C. Cerne, Senior Resident Inspector, Millstone Unit No. 3

Cool
1/1

Northeast Utilities System

107 Selden Street, Berlin, CT 06037

Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270
(203) 665-5000

May 20, 1996

D09899

Mr. James Grier
Principle Sanitary Engineer
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Reference: Permit (C04876), NPDES Permit CT0003263, dated December 14, 1992.

Dear Mr. Grier:

Millstone Nuclear Power Station
Modification Request - CT0003263
Hydrazine and Cooling Water Flows

On May 7, 1996 representatives of Northeast Nuclear Energy Company (NNECO) and Northeast Utilities Service Company (NUSCO) met with you to discuss the need for modifications to NNECO's Millstone Station NPDES Permit, Reference. Pursuant to those discussions NNECO herein requests that Permit CT0003263 be modified as follows:

Hydrazine - DSNs 001B6, 001B9, 001C4, 001C6, 001C6 (b), 001C9, 001B, and 001C:

The current NPDES Permit, Reference, allows hydrazine discharge for Discharge Serial Numbers (DSNs) 001B9, 001C4 , 001C6, 001C6(b), and 001C9. Each DSN has a discharge concentration limit (mg/l) which is monitored (up pipe) before discharge to the quarry through its respective unit cooling discharge pipe, DSN 001B and 001C. When calculated with individual flows, the permit authorizes a daily total discharge of 76 kilograms (kg) of hydrazine to the environmental.

The Millstone Station Chemistry Department has determined that the Condensate Polisher Regeneration Sumps of Units II and III are a source of hydrazine not specifically defined in the permit. Therefore, NNECO is proposing these additional sources be identified and authorized for hydrazine discharge. However, NNECO is not proposing an additional quantity of hydrazine be authorized, rather that by shifting control to the end of pipe (establish a mass limit for hydrazine at DSNs 001B and 001C only) the total permitted amount of hydrazine discharged can actually be reduced from 76 kg/day to 65 kg/day. A procedure to accomplish this through internal controls has been drafted and is included in Attachment A.

Therefore, NNECO is requesting that Permit CT0003263 be modified identifying DSN 001B6 as a source of hydrazine and that the discharge of hydrazine be permitted as follows:

DSN	Max. Concentration/Batch	Max. Quantity/Day*
001B6	125 mg/l**	
001B9	75 mg/l	
001C4	75 mg/l	
001C6	125 mg/l**	
001C6(b)	75 mg/l	
001C9	75 mg/l	
001B		19 kg*
001C		46 kg*

* Maximum quantity per day from DSNs 001B6, 001B9, 001C4, 001C6, 001C6(b), and 001C(9).

** When discharging, two unit circulating water pumps must be running.

In order to further minimize the discharge of hydrazine DSNs 001B1(a) and 001B8 will not discharge whenever DSNs 001B6 and 001B9 are discharging, and DSNs 001C4, 001C6, 001C6(b), and 001C9 will not discharge whenever DSNs 001C1(a) & 001C8 are discharging. DSNs 001B1(a), 001B8, 001C1(a), and 001C8 are specified to discharge on a frequency of only two to five times a year and therefore not part of this modification request.

Condenser Cooling Water Flows - DSNs 001A, 001B, and 001C:

When the present NPDES permit was written in December 1992, the flows were changed from "average" to "maximum," however, the average flow values from the former NPDES permit were inadvertently used as maximum flows in the present permit. NNECO requests that the flows be changed to the following;

001A	680,000,000 gallons per day
001B	870,000,000 gallons per day
001C	1,400,000,000 gallons per day

Enclosed is a completed Permit Application Form, a check in the amount of $500.00, and revised pages 1 and 2 of Attachment O for DSN's 001A, 001B, and 001C with the new flow rates.

As discussed at the May 7, 1996 meeting, the modification to the cooling water flows requires NNECO to give public notice of its intent to modify the permit. Enclosed is a copy of the notice to be placed in the New London Day. A certified copy of the notice will be sent to you following its publication.

Should you have any questions, please call Mr. Thomas Arcari, Sr., NUSCO's Environmental Permitting Department, at 665-3713.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

D. B. Miller, Jr.
Senior Vice President

Att: Internal Control Procedure

Encl: Fee Check - $500.00
Revised Form O's
Public Notice
Permit Application Transmittal Form

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Central Permit Processing Unit
79 Elm Street
Hartford, CT 06106-5127

Permit Application Transmittal Form

Please complete this transmittal form in accordance with the instructions in order to ensure the proper handling of your application(s) and the associated fee(s). Print legibly or type.

DEP USE ONLY
Document No. _____
Rec'd CPPU _____
Rec'd Program _____

Part I: Applicant Information

Applicant: NORTHEAST NUCLEAR ENERGY COMPANY
Company Name or, if applicant is an individual, write name in the following format:
Title (Mr, Ms, Dr) First Name Middle Initial Last Name Suffix (Jr, PE, PhD)

Mailing Address: P. O. BOX 270

City/Town: HARTFORD State: CONN. Zip Code: 06141 - 0270

Phone: (860) 665-5000 ext.: _____ Fax: ( ) _____

Contact Person: D. B. MILLER, JR. Phone: (860) 665-5000 ext.: _____
SR. VICE PRESIDENT

☐ Check if any co-applicants. If so, attach additional sheet(s) with the required information as supplied above.

Applicant is a(n) (check one): ☐ individual ☒ company ☐ federal ☐ state ☐ municipal

If a Company, list company type (e.g., corporation, limited partnership, etc.) CORPORATION

Applicant Billing Address: SAME

City/Town: _____ State: _____ Zip Code: _____

Billing Contact Name: _____ Phone: ( ) _____ ext.: _____

Part II: Project Information

Brief Project Description: MODIFY FLOW VALUES IN NPDES PERMIT CT0003263

Location (City/Town):

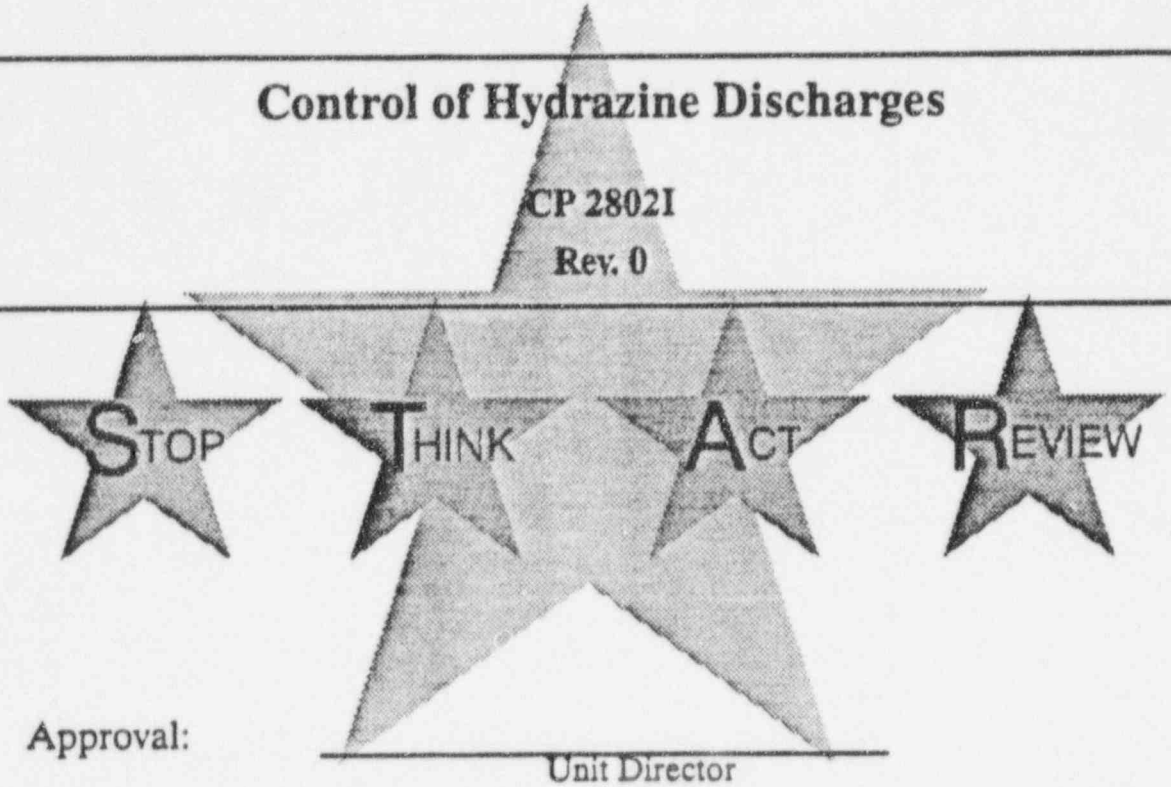
Other Project Permits (*not* included with this form):

Permit Description	Issuing Authority	Submittal Date	Issuance Date	Denial Date	Permit #

MILLSTONE NUCLEAR POWER STATION
CHEMISTRY PROCEDURE

Control of Hydrazine Discharges

CP 2802I
Rev. 0



Approval: _____
Unit Director

PORC Mtg. No: _____ Date: _____

Effective Date: _____

Level of Use
Information

Subject Matter Expert:
Richard Robertson

Control of Hydrazine Discharges

TABLE OF CONTENTS

1. PURPOSE

1.1 **Objective**

Provide instructions for managing NPDES discharges that contain hydrazine for the purpose of ensuring NPDES permit compliance.

1.2 **Discussion**

NPDES limits have been established for hydrazine at the end of the pipe for Unit 2 cooling water discharge (DSN 001B). Because hydrazine may be discharged from up to 2 up-pipe independent sources, a discharge control program is required. NPDES monitoring is performed and controlled by the Millstone Station Chemistry Department.

This procedure does not address the infrequent hydrazine discharges related to steam generator secondary side wet layup drainage discharge (DSN 001B-1(a)) and condenser hotwell discharges (DSN 001B-8) other than to prevent discharges of hydrazine from other up-pipe sources during these discharges.

A permit system similar to that used for controlling radioactive discharges is used to control hydrazine discharges. For each planned hydrazine discharge, the total hydrazine content (mass) is conservatively determined. An evaluation is then made to determine if the planned discharge is within the daily hydrazine loading allotted for Unit 2. If the hydrazine loading from the planned discharge is within the limitation, Chemistry Supervision will authorize the discharge. **NO HYDRAZINE DISCHARGE CAN TAKE PLACE WITHOUT CHEMISTRY DEPARTMENT AUTHORIZATION.**

To avoid Operations or Maintenance Department scheduling delays, work schedules involving hydrazine discharges should be communicated to Chemistry well in advance of required discharges.

2. PREREQUISITES

2.1 **Definitions**

2.1.1 DSN – discharge serial number

3. PRECAUTIONS

N/A

4. INSTRUCTIONS

4.1 **Calculating Estimated Hydrazine Mass for Planned Discharges**

NOTE

This procedure does not address the infrequent hydrazine discharges related to steam generator secondary side wet layup drainage discharge (DSN 001B−1(a)) and condenser hotwell discharges (DSN 001B−8) except to forbid the additional discharge of hydrazine from other up−pipe sources during a discharge from steam generator secondary side wet layup drainage (DSN 001B−1(a)) or the condenser hotwell (DSN 001B−8).

Chemistry Technician

4.1.1 IF this is first hydrazine discharge for the week, OBTAIN blank Chem Form 2802I−2 and RECORD week ending date.

NOTE

1/5−2 would be the second discharge made on January 5.

4.1.2 Refer To Chem Form 2802I−2 and RECORD next sequential discharge number for the day using the format "month/day − number discharge for the day."

4.1.3 OBTAIN blank Chem Form 2802I−1 and PERFORM the following:

a. Refer To Chem Form 2802I−2 and RECORD the following:

- Discharge number
- Total hydrazine mass discharged so far today (kg)

b. Refer To Attachment 1 and RECORD the following information for this discharge point:

- NPDES discharge serial number
- Name of discharge
- Hydrazine limit in ppm

c. RECORD the following information:

- Date and time
- Measured hydrazine concentration (ppm)
- Estimated discharge volume (gallons)
- Number of circulating water pumps running
- Number of service water pumps running

d. Refer To equation 1 and ESTIMATE mass of hydrazine in this discharge (kg) and RECORD value:

e. ADD estimated hydrazine mass in this discharge to total hydrazine mass discharged so far today and RECORD as estimated daily hydrazine total for this day.

f. INITIAL form.

4.1.4 RECORD estimated mass of hydrazine in this discharge and estimated daily hydrazine total for this day on Chem Form 2802I-2.

NOTE

If the estimated daily hydrazine total is greater than 18.5 kg the discharge may be delayed until the next day or hydrazine mass may be requested from another unit on site under the following conditions:

- The other unit authorizes the use of part of their allowable discharge mass
- The amount requested will not cause the other unit to exceed their daily hydrazine discharge limit
- The other unit records the amount given in their "Hydrazine Discharge Log"

4.1.5 IF estimated daily total is greater than 18.5 kg, PERFORM 1 of the following steps:

- NOTIFY Chemistry Supervision and EXIT procedure.
- Refer To Section 4.2 to use of part of another unit's allowable hydrazine discharge mass.

Chemistry Supervision

Chemistry Technician

4.1.6 IF estimated total hydrazine mass discharged on this day is less than or equal to 18.5 kg OR amount of estimated total hydrazine mass above 18.5 kg has been received from another unit on site, PERFORM the following:

a. IF hydrazine discharge rate is to occur at greater than 8.5 gpm, VERIFY at least 2 circulation water pumps are running.

b. VERIFY that discharges from steam generator secondary side wet layup drainage (DSN 001B-1(a)) or condenser hotwells (DSN 001B-8) are **not** in progesss.

c. SIGN and DATE Chem Form 2802I-1 to authorize the discharge.

4.1.7 RECORD the number of circulation water pumps running on Chem Form 2802I-1.

4.1.8 WHEN discharge is completed, PERFORM the following:

a. RECORD gallons discharged on Chem Form 2802I-1.

b. Go To Section 4.3.

- End of Section 4.1 -

4.2 Using Another Unit's Allowable Hydrazine Discharge Mass

Chemistry Supervision

4.2.1 OBTAIN permission from the other unit to use part of their allowable hydrazine discharge mass

4.2.2 REQUEST the other unit verify that the amount requested will not cause them to exceed their daily hydrazine discharge limit.

4.2.3 REQUEST the other unit PERFORM the following in their "Hydrazine Discharge Log:"

- RECORD NPDES discharge serial number
- RECORD unit requesting discharge mass in "Discharge point description" column
- RECORD amount requested in "Estimated hydrazine mass in this discharge" column
- ADD estimated hydrazine mass in this discharge to daily hydrazine total for this day and RECORD as estimated daily hydrazine total for this day.
- RECORD in remarks section that another unit used part of the allowable hydrazine discharge mass for this day

4.2.4 RECORD the following in remarks section on Chem Form 2802I–2:

- Discharge number that used requested discharge mass
- Amount of hydrazine discharge mass taken from other unit
- Which unit hydrazine discharge mass was taken from

– End of Section 4.2 –

4.3 Calculating Actual Hydrazine Mass Following Completion of a Planned Discharge

NOTE

This procedure does not address the infrequent hydrazine discharges related to steam generator secondary side wet layup drainage discharge (DSN 001B-1(a)) and condenser hotwell discharges (DSN 001B-8) except to forbid the additional discharge of hydrazine from other up-pipe sources during a discharge from steam generator secondary side wet layup drainage (DSN 001B-1(a)) or the condenser hotwell (DSN 001B-8).

Chemistry Technician

4.3.1 Refer To Equation 2 on Chem Form 2802I-1 and CALCULATE hydrazine mass discharged (kg).

4.3.2 RECORD value calculated in step 4.3.1 on Chem Form 2802I-2.

4.3.3 ADD hydrazine mass discharged to daily hydrazine total for this day and RECORD as new daily hydrazine total for this day.

4.3.4 INITIAL Chem Form 2802I-2 for this discharge.

4.3.5 IF hydrazine discharge mass was taken from another unit, PERFORM the following:

a. SUBTRACT 18.5 kg from new daily hydrazine total for this day.

b. REQUEST other unit PERFORM the following in their "Hydrazine Discharge Log"

- RECORD value from step 4.3.5 a. in "Hydrazine mass in this discharge" column
- ADD hydrazine mass in this discharge to daily hydrazine total for this day and RECORD as new daily hydrazine total for this day
- INITIAL for this discharge.

Chemistry Supervisor

4.3.6 SIGN and DATE completed Chem Form 2802I-1 signifying review of discharge.

– End of Section 4.3 –

5. REVIEW AND SIGNOFF

5.1 The review and signoff for this procedure is located in Chem Form 2802I-1 and Chem Form 2802I-2.

6. REFERENCES

6.1 NPDES Permit

7. SUMMARY OF CHANGES

7.1 Original issue.

Attachment 1
Hydrazine Sources at Unit 2
(Sheet 1 of 1)

NPDES Discharge Serial Number	Name of Discharge Point	Hydrazine Limit (ppm)
001B–6	Unit No. 2 Condensate Polisher Regeneration Wastewater Neutralization Tank Discharge Including System Floor Drains, Plant Equipment Washwater, and Boric Acid from Steam Generator Treatment (TK10 & TK11)	125
001B–9	Unit No. 2 Non–contaminated Closed Cooling Water System Drainage Discharge	75

Form Approved by Director – Millstone Unit 2 | Effective Date | PORC Mtg. No.

Hydrazine Discharge Worksheet

Discharge Number: _____

NPDES discharge serial number: _____ Hydrazine limit: _____ ppm

Discharge point description: _____

Sample date/time: _____ Measured hydrazine concentration: _____ ppm

Estimated discharge volume: _____ gallons

Number of pumps running: circulating water _____ service water _____

Equation 1

$$\text{estimated hydrazine mass in this discharge (kg)} = \text{estimated discharge volume (gallons)} \cdot \text{measured hydrazine concentration (ppm)} \cdot 3.785\text{ E}-06 \frac{\text{liter kg}}{\text{gallon mg}}$$

Estimated hydrazine mass in this discharge: _____ kg

Total hydrazine mass discharged so far today: _____ kg

\+ _____

Estimated daily hydrazine total for this day: _____ kg

Equation 2

Discharge volume: _____ gallons

$$\text{hydrazine mass discharged (kg)} = \text{discharge volume (gallons)} \cdot \text{measured hydrazine concentration (ppm)} \cdot 3.785\text{ E}-06 \frac{\text{liter kg}}{\text{gallon mg}}$$

Hydrazine mass discharged: _____ kg

Total hydrazine mass discharged so far today: _____ kg

\+ _____

Daily hydrazine total for this day: _____ kg

Chemistry Technician: _____ Date: _____

Chemistry Supervision Review: _____ Date: _____

Form Approved by Director – Millstone Unit 2 | Effective Date | PORC Mtg. No.

Unit 2 Hydrazine Discharge Log

Week Ending: _____

Hydrazine Daily Limit: 18.5 kg

	Discharge Number	Name of Discharge Point	Estimated Hyrdazine Mass in this Discharge (kg)	Estimated Daily Hydrazine Total (kg)	Hyrdazine Mass Discharged (kg)	Daily Hydrazine Total (kg)	Tech Initials	Remarks
SUNDAY								
MONDAY								
TUESDAY								

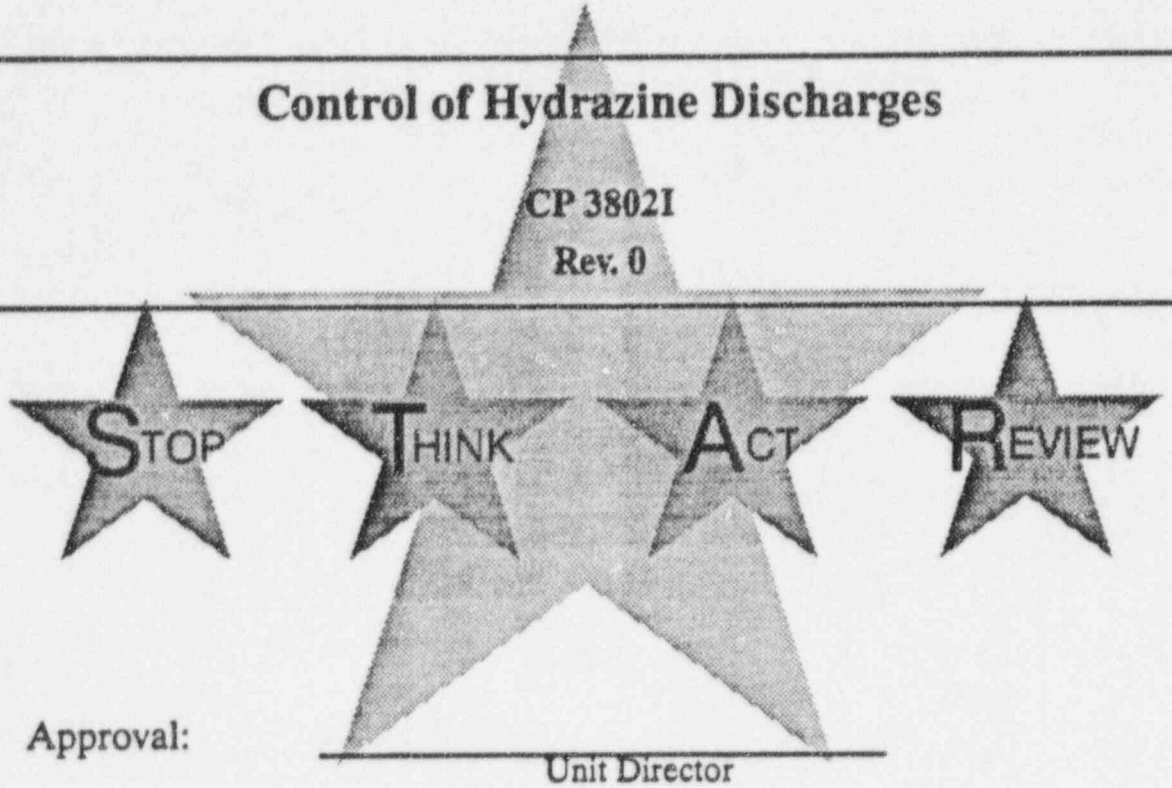
Chem Form 2802I–2
Rev. 0
Page 1 of 2

	Discharge Number	Name of Discharge Point	Estimated Hyrdazine Mass in this Discharge (kg)	Estimated Daily Hydrazine Total (kg)	Hyrdazine Mass Discharged (kg)	Daily Hydrazine Total (kg)	Tech Initials	Remarks
WEDNESDAY								
THURSDAY								
FRIDAY								
SATURDAY								

MILLSTONE NUCLEAR POWER STATION
CHEMISTRY PROCEDURE

Control of Hydrazine Discharges

CP 3802I
Rev. 0



Approval: _____
Unit Director

PORC Mtg. No: _____ Date: _____

Effective Date: _____

Level of Use
Information

Subject Matter Expert:
Richard Robertson

Attachment O: Discharge Information - must be completed and submitted for each discharge

Applicant Name: Northeast Nuclear Energy Company
(as indicated on the *Permit Application Transmittal Form*)

Existing Permit Number: CT0003263 (if applicable)

Complete this attachment for *each* discharge and label each discharge consecutively starting with serial number 100 for discharges to a surface water; 200 for discharges to a POTW; and 300 for discharges to ground water. Attachment O is *not* required for applications to: discharge from land treatment non-point source discharge systems (including septic tank leachfield systems), discharge from landfills, discharge from agricultural activities or concentrated animal feeding operations, or discharge from concentrated aquatic animal production facilities.

Part A: General Discharge Information

Discharge Serial Number 001A

1. For discharges to a surface water only:

   a. The discharge enters the surface water (check one): ☐ directly or

   ☐ through a municipal storm sewer or

   ☒ through other drainage systems (e.g., swale) Please specify below:
   VIA DSN001

   b. Name of surface water body the discharge first enters: Long Island Sound

   c. Surface water classification of the above listed water body:
   (present/future) SA / SA

2. For discharges to a POTW only:

   a. The discharge enters the POTW (check one): ☐ directly hauled or

   ☐ through a sanitary sewer or a combined sewer

   b. Name of POTW the discharge first enters: _____

   c. Facility I.D. or location address of POTW: _____

Discharge Serial Number 001A

3. For discharges to ground water only:

   a. Groundwater classification of the site (present/future) : _____/_____

   b. Name of surface water body in watershed area: _____

   Surface water classification of the above listed water body:

   (present/future) _____/_____

4. Average Daily Flow: 680,000,000 gpd Maximum Daily Flow: 680,000,000 gpd

   Design Flow: 680,000,000 gpd

   Date discharge began or will begin: Existing Discharge

5. Is the discharge continuous? ☒ Yes ☐ No If yes, indicate:

   Average number of hours per day of the discharge: 24

   Maximum number of hours per day of the discharge: 24

6. For other than a continuous discharge (e.g., batch, intermittent, or seasonal discharges), indicate:

   Average number of hours per event of the discharge: _____

   Maximum number of hours per event of the discharge: _____

   The duration and frequency of the discharge: _____

7. Description of each specific activity or each process generating the discharge and identification of all types of waste generated by each process.

   Unit Discharge

8. For domestic sewage treatment plants, list the location of all discharges including, any plant bypasses, pumping station bypasses, and collection system overflows and bypasses.

Attachment O: Discharge Information - must be completed and submitted for each discharge

Applicant Name: Northeast Nuclear Energy Company
(as indicated on the *Permit Application Transmittal Form*)

Existing Permit Number: CT0003263 (if applicable)

Complete this attachment for *each* discharge and label each discharge consecutively starting with serial number 100 for discharges to a surface water; 200 for discharges to a POTW; and 300 for discharges to ground water. Attachment O is *not* required for applications to: discharge from land treatment non-point source discharge systems (including septic tank leachfield systems), discharge from landfills, discharge from agricultural activities or concentrated animal feeding operations, or discharge from concentrated aquatic animal production facilities.

Part A: General Discharge Information

Discharge Serial Number 001B

1. For discharges to a surface water only:

   a. The discharge enters the surface water (check one): ☐ directly or

   ☐ through a municipal storm sewer or

   ☒ through other drainage systems (e.g., swale) Please specify below:
   VIA DSN001

   b. Name of surface water body the discharge first enters: Long Island Sound

   c. Surface water classification of the above listed water body:
   (present/future) SA / SA

2. For discharges to a POTW only:

   a. The discharge enters the POTW (check one): ☐ directly hauled or

   ☐ through a sanitary sewer or a combined sewer

   b. Name of POTW the discharge first enters: _____

   c. Facility I.D. or location address of POTW: _____

Discharge Serial Number 001B

3. For discharges to ground water only:

   a. Groundwater classification of the site (present/future) : _____/_____

   b. Name of surface water body in watershed area: _____

   Surface water classification of the above listed water body:

   (present/future) _____/_____

4. Average Daily Flow: 870,000,000 gpd Maximum Daily Flow: 870,000,000 gpd

   Design Flow: 870,000,000 gpd

   Date discharge began or will begin: Existing Discharge

5. Is the discharge continuous? ☒ Yes ☐ No If yes, indicate:

   Average number of hours per day of the discharge: 24

   Maximum number of hours per day of the discharge: 24

6. For other than a continuous discharge (e.g., batch, intermittent, or seasonal discharges), indicate:

   Average number of hours per event of the discharge: _____

   Maximum number of hours per event of the discharge: _____

   The duration and frequency of the discharge: _____

7. Description of each specific activity or each process generating the discharge and identification of all types of waste generated by each process.

   Unit Discharge

8. For domestic sewage treatment plants, list the location of all discharges including, any plant bypasses, pumping station bypasses, and collection system overflows and bypasses.

Attachment O: Discharge Information - must be completed and submitted for each discharge

Applicant Name: Northeast Nuclear Energy Company
(as indicated on the *Permit Application Transmittal Form*)

Existing Permit Number: CT0003263 (if applicable)

Complete this attachment for *each* discharge and label each discharge consecutively starting with serial number 100 for discharges to a surface water; 200 for discharges to a POTW; and 300 for discharges to ground water. Attachment O is *not* required for applications to: discharge from land treatment non-point source discharge systems (including septic tank leachfield systems), discharge from landfills, discharge from agricultural activities or concentrated animal feeding operations, or discharge from concentrated aquatic animal production facilities.

Part A: General Discharge Information

Discharge Serial Number 001C

1. For discharges to a surface water only:

   a. The discharge enters the surface water (check one):
   - ☐ directly or
   - ☐ through a municipal storm sewer or
   - ☒ through other drainage systems (e.g., swale) Please specify below: VIA DSN001

   b. Name of surface water body the discharge first enters: Long Island Sound

   c. Surface water classification of the above listed water body:
   (present/future) SA / SA

2. For discharges to a POTW only:

   a. The discharge enters the POTW (check one):
   - ☐ directly hauled or
   - ☐ through a sanitary sewer or a combined sewer

   b. Name of POTW the discharge first enters: _____

   c. Facility I.D. or location address of POTW: _____

Discharge Serial Number 001C

3. For discharges to ground water only:

   a. Groundwater classification of the site (present/future) : _____/_____

   b. Name of surface water body in watershed area: _____

   Surface water classification of the above listed water body:

   (present/future) _____/_____

4. Average Daily Flow: 1,400,000,000 gpd Maximum Daily Flow: 1,400,000,000 gpd

   Design Flow: 1,400,000,000 gpd

   Date discharge began or will begin: Existing Discharge

5. Is the discharge continuous? ☒ Yes ☐ No If yes, indicate:

   Average number of hours per day of the discharge: 24

   Maximum number of hours per day of the discharge: 24

6. For other than a continuous discharge (e.g., batch, intermittent, or seasonal discharges), indicate:

   Average number of hours per event of the discharge: _____

   Maximum number of hours per event of the discharge: _____

   The duration and frequency of the discharge: _____

7. Description of each specific activity or each process generating the discharge and identification of all types of waste generated by each process.

   Unit Discharge

8. For domestic sewage treatment plants, list the location of all discharges including, any plant bypasses, pumping station bypasses, and collection system overflows and bypasses.

NOTICE OF PERMIT APPLICATION

TOWN OF WATERFORD

Notice is hereby given that Northeast Nuclear Energy Company (the "Applicant") of P. O. Box 270, Hartford, CT has submitted to the Department of Environmental Protection an application under Section 22a-430 of the Connecticut General Statutes for a permit to maintain a discharge of water to the waters of the state

Specifically, the applicant proposes to modify the cooling water flow amount in its NPDES permit for the purpose of discharging water from the Millstone Nuclear Power Station. The proposed activity will take place at Millstone Point. The proposed activity will potentially affect Long Island Sound.

Interested persons may obtain copies of the application Northeast Nuclear Power Company, P. O. Box 270, Hartford, CT 06141-0270; Attn. Mr. D. B. Miller, Senior Vice President. Phone (860) 665-5000.

The application is available for inspection at the Department of Environmental Protection, Bureau of Water Management, Permitting, Enforcement and Remediation, 79 Elm Street, Hartford, CT 06106-5127 (860-424-3018) from 8:30 to 4:30, Monday through Friday.

Millstone Unit 3
Chemistry Procedure

Control of Hydrazine Discharges

TABLE OF CONTENTS

1. PURPOSE

1.1 Objective

Provide instructions for managing NPDES discharges that contain hydrazine for the purpose of ensuring NPDES permit compliance.

1.2 Discussion

NPDES limits have been established for hydrazine at the end of the pipe for Unit 3 cooling water discharge (DSN 001C). Because hydrazine may be discharged from up to 4 up-pipe independent sources, a discharge control program is required. NPDES monitoring is performed and controlled by the Millstone Station Chemistry Department.

This procedure does not address the infrequent hydrazine discharges related to steam generator secondary side wet layup drainage discharge (DSN 001C-1(a)) and condenser hotwell discharges (DSN 001C-8) other than to prevent discharges of hydrazine from other up-pipe sources during these discharges.

A permit system similar to that used for controlling radioactive discharges is used to control hydrazine discharges. For each planned hydrazine discharge, the total hydrazine content (mass) is conservatively determined. An evaluation is then made to determine if the planned discharge is within the daily hydrazine loading allotted for Unit 3. If the hydrazine loading from the planned discharge is within the limitation, Chemistry Supervision will authorize the discharge. **NO HYDRAZINE DISCHARGE CAN TAKE PLACE WITHOUT CHEMISTRY DEPARTMENT AUTHORIZATION.**

To avoid Operations or Maintenance Department scheduling delays, work schedules involving hydrazine discharges should be communicated to Chemistry well in advance of required discharges.

2. PREREQUISITES

2.1 Definitions

2.1.1 DSN – discharge serial number

3. PRECAUTIONS

N/A

4. INSTRUCTIONS

4.1 Calculating Estimated Hydrazine Mass for Planned Discharges

NOTE

This procedure does not address the infrequent hydrazine discharges related to steam generator secondary side wet layup drainage discharge (DSN 001C–1(a)) and condenser hotwell discharges (DSN 001C–8) except to forbid the additional discharge of hydrazine from other up–pipe sources during a discharge from steam generator secondary side wet layup drainage (DSN 001C–1(a)) or the condenser hotwell (DSN 001C–8).

Chemistry Technician

4.1.1 IF this is first hydrazine discharge for the week, OBTAIN blank Chem Form 3802I–2 and RECORD week ending date.

NOTE

1/5–2 would be the second discharge made on January 5.

4.1.2 Refer To Chem Form 3802I–2 and RECORD next sequential discharge number for the day using the format "month/day – number discharge for the day."

4.1.3 OBTAIN blank Chem Form 3802I–1 and PERFORM the following:

a. Refer To Chem Form 3802I–2 and RECORD the following:

- Discharge number
- Total hydrazine mass discharged so far today (kg)

b. Refer To Attachment 1 and RECORD the following information for this discharge point:

- NPDES discharge serial number
- Name of discharge
- Hydrazine limit in ppm

c. RECORD the following information:

- Date and time
- Measured hydrazine concentration (ppm)
- Estimated discharge volume (gallons)
- Number of circulating water pumps running
- Number of service water pumps running

d. Refer To equation 1 and ESTIMATE mass of hydrazine in this discharge (kg) and RECORD value:

e. ADD estimated hydrazine mass in this discharge to total hydrazine mass discharged so far today and RECORD as estimated daily hydrazine total for this day.

f. INITIAL form.

4.1.4 RECORD estimated mass of hydrazine in this discharge and estimated daily hydrazine total for this day on Chem Form 3802I-2.

NOTE

If the estimated daily hydrazine total is greater than 45.5 kg the discharge may be delayed until the next day or hydrazine mass may be requested from another unit on site under the following conditions:

- The other unit authorizes the use of part of their allowable discharge mass
- The amount requested will not cause the other unit to exceed their daily hydrazine discharge limit
- The other unit records the amount given in their "Hydrazine Discharge Log"

4.1.5 IF estimated daily total is greater than 45.5 kg, PERFORM 1 of the following steps:

- NOTIFY Chemistry Supervision and EXIT procedure.
- Refer To Section 4.2 to use of part of another unit's allowable hydrazine discharge mass.

Chemistry Supervision

Chemistry Technician

4.1.6 IF estimated total hydrazine mass discharged on this day is less than or equal to 45.5 kg OR amount of estimated total hydrazine mass above 45.5 kg has been received from another unit on site, PERFORM the following:

a. IF hydrazine discharge rate is to occur at greater than 8.5 gpm, VERIFY at least 2 circulation water pumps are running.

b. VERIFY that discharges from steam generator secondary side wet layup drainage (DSN 001C-1(a)) or condenser hotwells (DSN 001C-8) are **not** in progesss.

c. SIGN and DATE Chem Form 3802I-1 to authorize the discharge.

4.1.7 RECORD the number of circulation water pumps running on Chem Form 3802I-1.

4.1.8 WHEN discharge is completed, PERFORM the following:

a. RECORD gallons discharged on Chem Form 3802I-1.

b. Go To Section 4.3.

- End of Section 4.1 -

4.2 Using Another Unit's Allowable Hydrazine Discharge Mass

Chemistry Supervision

4.2.1 OBTAIN permission from the other unit to use part of their allowable hydrazine discharge mass

4.2.2 REQUEST the other unit verify that the amount requested will not cause them to exceed their daily hydrazine discharge limit.

4.2.3 REQUEST the other unit PERFORM the following in their "Hydrazine Discharge Log:"

- RECORD NPDES discharge serial number
- RECORD unit requesting discharge mass in "Discharge point description" column
- RECORD amount requested in "Estimated hydrazine mass in this discharge" column
- ADD estimated hydrazine mass in this discharge to daily hydrazine total for this day and RECORD as estimated daily hydrazine total for this day.
- RECORD in remarks section that another unit used part of the allowable hydrazine discharge mass for this day

4.2.4 RECORD the following in remarks section on Chem Form 3802I–2:

- Discharge number that used requested discharge mass
- Amount of hydrazine discharge mass taken from other unit
- Which unit hydrazine discharge mass was taken from

– End of Section 4.2 –

4.3 Calculating Actual Hydrazine Mass Following Completion of a Planned Discharge

NOTE

This procedure does not address the infrequent hydrazine discharges related to steam generator secondary side wet layup drainage discharge (DSN 001C–1(a)) and condenser hotwell discharges (DSN 001C–8) except to forbid the additional discharge of hydrazine from other up–pipe sources during a discharge from steam generator secondary side wet layup drainage (DSN 001C–1(a)) or the condenser hotwell (DSN 001C–8).

Chemistry Technician

4.3.1 Refer To Equation 2 on Chem Form 3802I–1 and CALCULATE hydrazine mass discharged (kg).

4.3.2 RECORD value calculated in step 4.3.1 on Chem Form 3802I–2.

4.3.3 ADD hydrazine mass discharged to daily hydrazine total for this day and RECORD as new daily hydrazine total for this day.

4.3.4 INITIAL Chem Form 3802I–2 for this discharge.

4.3.5 IF hydrazine discharge mass was taken from another unit, PERFORM the following:

a. SUBTRACT 45.5 kg from new daily hydrazine total for this day.

b. REQUEST other unit PERFORM the following in their "Hydrazine Discharge Log"

- RECORD value from step 4.3.5 a. in "Hydrazine mass in this discharge" column
- ADD hydrazine mass in this discharge to daily hydrazine total for this day and RECORD as new daily hydrazine total for this day
- INITIAL for this discharge.

Chemistry Supervisor

4.3.6 SIGN and DATE completed Chem Form 3802I–1 signifying review of discharge.

– End of Section 4.3 –

5. REVIEW AND SIGNOFF

5.1 The review and signoff for this procedure is located in Chem Form 3802I–1 and Chem Form 3802I–2.

6. REFERENCES

6.1 NPDES Permit

7. SUMMARY OF CHANGES

7.1 Original issue.

Attachment 1
Hydrazine Sources at Unit 3
(Sheet 1 of 1)

NPDES Discharge Serial Number	Name of Discharge Point	Hydrazine Limit (ppm)
001C–4	Unit No. 3 Makeup Demineralizer Backwash Discharge Including Feedwater System Wet Lay–up Drainage and Auxiliary Boiler Stack Drainage (MWNS)	75
001C–6	Unit No. 3 Condensate Polisher Regeneration Wastewater Neutralization Tank Discharge Including Plant Equipment Washwaters (TK10 & TK11)	125
	Unit No. 3 Hot Water Heating System Drainage (HVH)	75
001C–6(b)	Uint No. 3 Auxiliary Boiler Blowdown Sump Discharge (ABD)	75
001C–9	Unit No. 3 Non–contaminated Closed Cooling Water System Drainage Discharge	75

Form Approved by Director – Millstone Unit 3 | Effective Date | PORC Mtg. No.

Hydrazine Discharge Worksheet

Discharge Number: _____

NPDES discharge serial number: _____ Hydrazine limit: _____ ppm

Discharge point description: _____

Sample date/time: _____ Measured hydrazine concentration: _____ ppm

Estimated discharge volume: _____ gallons

Number of pumps running: circulating water _____ service water _____

Equation 1

estimated hydrazine mass in this discharge (kg) = estimated discharge volume (gallons) • measured hydrazine concentration (ppm) • 3.785 E–06 $\frac{\text{liter kg}}{\text{gallon mg}}$

Estimated hydrazine mass in this discharge: _____ kg

Total hydrazine mass discharged so far today: _____ kg

\+

Estimated daily hydrazine total for this day: _____ kg

Equation 2

Discharge volume: _____ gallons

hydrazine mass discharged (kg) = discharge volume (gallons) • measured hydrazine concentration (ppm) • 3.785 E–06 $\frac{\text{liter kg}}{\text{gallon mg}}$

Hydrazine mass discharged: _____ kg

Total hydrazine mass discharged so far today: _____ kg

\+

Daily hydrazine total for this day: _____ kg

Chemistry Technician: _____ Date: _____

Chemistry Supervision Review: _____ Date: _____

Form Approved by Director – Millstone Unit 3 | Effective Date | PORC Mtg. No.

Unit 3 Hydrazine Discharge Log

Week Ending: _____

Hydrazine Daily Limit: 45.5 kg

	Discharge Number	Name of Discharge Point	Estimated Hyrdazine Mass in this Discharge (kg)	Estimated Daily Hydrazine Total (kg)	Hyrdazine Mass Discharged (kg)	Daily Hydrazine Total (kg)	Tech Initials	Remarks
SUNDAY								
MONDAY								
TUESDAY								

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	Discharge Number	Name of Discharge Point	Estimated Hyrdazine Mass in this Discharge (kg)	Estimated Daily Hydrazine Total (kg)	Hyrdazine Mass Discharged (kg)	Daily Hydrazine Total (kg)	Tech Initials	Remarks
WEDNESDAY								
THURSDAY								
FRIDAY								
SATURDAY								