



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



NPDES PERMIT

I CERTIFY THAT THIS DOCUMENT
IS A TRUE COPY OF THE ORIGINAL.

Northeast Nuclear Energy Company
P.O. Box 270
Hartford, CT 06141-0270 **RECEIVED**

Janet D. Burkley
NAME
Permit Coordinator
TITLE

DEC 15 1992

Re: Facility ID: 152-003
Town of Waterford, BURL OF WATER
Long Island Sound Watershed

R.G.C.

Attention: Mr. R.A. Reckert, Vice President

This permit is issued in accordance with Section 22a-430 of Chapter 446k, Connecticut General Statutes, and regulations adopted thereunder, as amended, pursuant to an approval dated September 26, 1973, by the Administrator of the United States Environmental Protection Agency for the State of Connecticut to administer a N.P.D.E.S. permit program.

Your application for permit reissuance submitted by Northeast Utilities Service Company on December 1, 1989, has been reviewed by the Connecticut Department of Environmental Protection.

The discharge is subject to the effluent guidelines and standards for the steam electric power generating point source category promulgated on November 19, 1982 pursuant to Section 301 of the Federal Clean Water Act, as amended. Specifically, this discharge is subject to 40 CFR Parts 125 and 423 of the effluent guidelines and standards.

The Commissioner of Environmental Protection (hereinafter "the Commissioner") has determined that the effluent limitations which would require the use of cooling systems at the Millstone Nuclear Power Station, Units 1, 2 and 3 other than the existing once-through system utilized by the applicant for the control of the thermal component of the applicant's discharge are more stringent than necessary to assure the protection and propagation of a balanced indigenous population of shellfish, fish and wildlife in and on the receiving waters. In the view of this finding, the Commissioner has herein established alternative and less stringent effluent limitations in accordance with Section 316(a) of the Clean Water Act.

However, the Commissioner has also determined that additional evidence based upon actual operating experience of Millstone Nuclear Power Station, Units 1, 2 and 3 would be desirable in order to corroborate the Commissioner's findings. The Commissioner expressly reserves the right to impose more stringent effluent limitations with respect to the thermal component of the Company's discharge pursuant to Section 22a-430 of Chapter 446k, Connecticut General Statutes should further investigation of the effect of the Company's discharge fail to corroborate the Commissioner's determination that more stringent effluent limitations are not necessary to assure the protection and propagation of a balanced indigenous population of the shellfish, fish and wildlife in and on the receiving waters. Such data will be generated by the studies to be conducted pursuant to paragraph 5. of this permit.

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The Commissioner has determined that the location, design, construction and capacity of the cooling water intake structure represents the best available technology for minimizing adverse environmental impact from impingement and entrainment pursuant to Section 316(b) of the Federal Act. The Commissioner has also determined that additional evidence based upon actual operating experience of Millstone Nuclear Power Station, Units 1, 2 and 3 would be desirable in order to corroborate the Commissioner's findings. Such data will be generated by the studies to be conducted pursuant to paragraphs 5. and 8. of this permit.

The Permittee should take cognizance of the fact that additional evidence may result in the imposition of more stringent requirements and the potential utilization of a cooling system other than the one utilized. Accordingly, the company should take this potential into consideration in their design wherever feasible.

Your discharge toxicity evaluation (DTE), submitted by Northeast Utilities Environmental Laboratory on December 28, 1988, has been reviewed by the Connecticut Department of Environmental Protection, has been found to be consistent with Section 22a-430-4(c)(21) of the Regulations of Connecticut State Agencies and is hereby approved in accordance with Section 22a-430 of Chapter 446k, Connecticut General Statutes.

The Commissioner has found that the discharges will not cause pollution of the waters of the state when all the conditions of this permit have been met. This action is further found to be consistent with the applicable policies of the Connecticut Coastal Management Act (Section 22a-92 of the Connecticut General Statutes).

The Commissioner has determined that Northeast Nuclear Energy Company is in full compliance with Order ID. WC4107 entered on October 18, 1985. The Commissioner, acting under Section 22a-430, hereby permits Northeast Nuclear Energy Company to discharge wastewaters in accordance with the following conditions:

1. The wastewaters shall be collected, treated and/or discharged in accordance with the above referenced application and all approvals issued by the Commissioner or his authorized agent for the discharges and/or activities authorized by or associated with this permit.
2. Monitoring and reporting of radioactive liquid releases are performed in accordance with 10 CFR 20 "Standards for Protection Against Radiation". Biannual monitoring reports are submitted to the Federal Nuclear Regulatory Commission and the Connecticut Department of Environmental Protection, Bureau of Air Management, Radiation Control Division. Monitoring and reporting includes:

- a) Gross radioactivity (less tritium, gases and alpha)
 - 1) total release (curies)
 - 2) average concentration released (uCi/ml)
- b) Tritium
 - 1) total release (curies)
 - 2) average concentration released (uCi/ml)
- c) Dissolved gases
 - 1) total release (curies)
 - 2) average concentration released (uCi/ml)
- d) Gross alpha
 - 1) total release (curies)
 - 2) average concentration released (uCi/ml)
- e) Volume of liquid waste discharged (liters)
- f) Volume of dilution water (liters)
- g) Isotopes released (curies)
- h) Percent of 10 CFR 20, Appendix B, Table II for total release
- i) Percent of technical specification limit if different from 10 CFR 20, for the total release if such specifications are established by N.R.C.

3. The discharges shall not exceed and shall otherwise conform to specific terms and conditions listed below. The discharges shall be monitored and results reported to the Water Management Bureau (Attn: DMR Processing) by the end of the month after the month in which samples are taken according to the following schedule:

- A. Discharge Serial No. 001-1
 Monitoring Location: 1
 Description: Discharge Points at Quarry Cut (East & West)
 (Discharge Code 102000a)
 Receiving Stream: Long Island Sound (Basin Code 2000)
 Present/Future Water Quality Standard: SA/SA
 Maximum Daily Flow: 2,738,000,000 gallons per day

- (1) The pH of the discharge shall not be less than 6.0 or greater than 9.0 (Code 00400-012).
- (2) The discharge shall not contain or cause in the receiving waters a visible oil sheen or floating solids.
- (3) The discharge shall not cause visible discoloration or foaming in the receiving waters.
- (4) The maximum temperature of the discharge shall be 105°F and the maximum temperature increase at the Quarry Cut above the intake water temperature shall be 32°F.
- (5) The differential temperature increase at the Quarry Cut above the intake water temperature under unusual conditions may be increased to 44°F for a period not exceeding 24 hours. In the event the temperature differential exceeds 32°F, the Department of Environmental Protection shall be immediately notified and a written report of the incident filed.

- (6) The permittee shall operate all facilities in such a manner as not to raise the average temperature of the receiving waters more than 4°F or increase the normal temperature of the receiving waters above 83°F. For purposes of this condition, cognizance will be given to reasonable time and distance to allow mixing of effluent and receiving waters, but the boundary of the mixing zone shall not exceed a radius of 8,000 feet from the discharge outlet at the quarry cut.
- (7) The thermal plume allowed within the permissible mixing zone as defined by these conditions shall not block zones of fish passage.
- (8) The discharge and operation of all facilities shall not alter significantly the color, turbidity, taste, odor or levels of coliform bacteria from ambient levels in the receiving waters; nor shall the level of dissolved oxygen in the receiving waters fall below 5.0 mg/l as a result of such discharge.
- (9) The total residual chlorine concentration in the discharge at the Quarry Cut shall not exceed 0.1 mg/l at any time.
- (10) Free available chlorine shall not be discharged in the condenser cooling water of any one unit for more than two hours in any one day.
- (11) Free available chlorine shall not be discharged in the condenser cooling water of more than one unit at any one time.
- (12) The discharge shall contain no other chemical constituents in concentrations and combinations which are harmful to human, animal or aquatic life, or which make the waters unsafe or unsuitable for fish or shellfish or their propagation, impair the palatability of same, or impair the waters for others uses.

Parameter	Code	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
pH	00400-012	See (1) Above	Hourly (c)	Instantaneous
Temperature	00011-015	See (4) Above	Hourly	Instantaneous
Free Available Chlorine	50064-019		Weekly	Grab
Total Residual Chlorine	50060-019	0.1 mg/l	Weekly	Grab

(a) Report the following data:

- 1) Daily range of pH
- 2) Daily range of flow
- 3) Daily maximum temperature ($^{\circ}\text{F}$)
- 4) Daily minimum temperature
- 5) Daily average temperature
- 6) Monthly standard deviation of temperature
- 7) Daily maximum temperature increase
- 8) Daily minimum temperature increase
- 9) Daily average temperature increase
- 10) Monthly standard deviation of temperature increase
- 11) Monthly maximum heat load (BTU/hr.)
- 12) Monthly minimum heat load
- 13) Monthly average heat load
- 14) Monthly maximum rate of change of heat load
- 15) Monthly standard deviation of heat load

(b) The permittee shall record the instantaneous flow (Code 00058-078) at the time of grab sample collection.

(c) The permittee shall monitor pH manually every four hours whenever the automated pH monitoring equipment malfunctions.

(d) The report shall include a detailed explanation of any violations of the limitations specified above.

B. Discharge Serial No. 001-A

Monitoring Location: 1

Description: Unit No. 1 Discharge (Discharge Code 102000a)

Maximum Daily Flow: 604,800,000 gallons per day

Maximum Temperature: 105°F

Average Design Temperature Increase: 22.5°F

(1) The maximum temperature increase at the Unit No. 1 discharge above the intake water temperature shall be 32°F .

(2) The differential temperature increase at the Unit No. 1 discharge above the intake water temperature may be increased to 44°F for a period not exceeding 24 hours under conditions of reduced cooling water flow. In the event the temperature differential exceeds 32°F , the Department of Environmental Protection shall be notified in the monthly monitoring report.

(3) The normal operating procedures include, usually not more than 12 times a year, the elevation of the intake water temperature on each condenser by a thermal backwash process required for the control of sea mussel. The true temperature difference between the receiving stream and discharge water shall be allowed to exceed the permit limit for brief periods during this treatment schedule.

- (4) Free available chlorine shall not be discharged in the condenser cooling water for more than two hours in any one day. Free available chlorine shall not be discharged in the condenser cooling water of more than one unit at any one time.
- (5) The pH of the discharge shall not be less than 6.0 or greater than 9.0 (Code 00400-012).

Parameter	Code	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
Aquatic Toxicity, Acute	C0019-09A	See paragraph 3.B. (6) below	Quarterly	Daily Composite
Aquatic Toxicity, Chronic	C0020-09A	See paragraph 3.B. (6) below	Quarterly	Daily Composite
Flow	74076-007		Hourly	Instantaneous
pH	00400-012		Hourly (b)	Instantaneous
Temperature °F	00011-015		Hourly	Instantaneous
Free Available Chlorine	50064-019	0.25 mg/l	Weekly (c)	Grab
Free Available Chlorine	50064-001	573.04 kg/d	Weekly (b)	Grab

(a) Report the following data:

- 1) Daily range of pH
- 2) Daily range of flow
- 3) Daily maximum temperature (°F)
- 4) Daily minimum temperature
- 5) Daily average temperature
- 6) Monthly standard deviation of temperature
- 7) Daily maximum temperature increase
- 8) Daily minimum temperature increase
- 9) Daily average temperature increase
- 10) Monthly standard deviation of temperature increase
- 11) Monthly maximum heat load (BTU/hr.)
- 12) Monthly minimum heat load
- 13) Monthly average heat load
- 14) Monthly maximum rate of change of heat load
- 15) Monthly standard deviation of heat load
- 16) Total flow during chlorination period each sampling day
- 17) Total daily flow

(b) The permittee shall monitor pH manually every four hours whenever the automated pH monitoring equipment malfunctions.

(c) Whenever Unit No. 1 is operating, weekly monitoring of free available chlorine shall be performed when chlorination of condenser cooling water occurs.

- (d) The report shall include a detailed explanation of any violations of the limitations specified above.
- (6) Effective upon issuance and thereafter a daily composite sample of the effluent shall not exhibit acute or chronic toxicity in the receiving waterbody.
- (a) Compliance with this permit condition shall be achieved when:
- (i) the Daily Flow of the discharge is greater than or equal to 43,200,000 gallons and there is no significant mortality in a daily composite sample of the effluent at a concentration equal to or greater than an NOAEL = 100% as determined by the pass/fail methodology in Section 22a-430-3(j)(7)(A) of the Regulations of Connecticut State Agencies; or
 - (ii) the Daily Flow of the discharge is less than 43,200,000 gallons and there is no significant mortality in a daily composite sample of the effluent at a concentration equal to or greater than an NOAEL = 45% as determined by the pass/fail methodology in Section 22a-430-3(j)(7)(A) of the Regulations of Connecticut State Agencies.
- (b) Monitoring to determine compliance with this limit shall be performed Quarterly (January, April, July, October) following the toxicity testing protocol for static acute toxicity tests in "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" (EPA 600/4-85/013) with the following specifications:
- (i) Mysidopsis bahia (5 days old or less) and Cyprinodon variegatus (30 +/- 5 days old) shall be used as test organisms
 - (ii) Synthetic or natural seawater adjusted to a salinity of 28-32 ppt shall be used as dilution water in the tests.
 - (iii) Test duration shall be 48 hours for Mysidopsis bahia AND 96 hours for Cyprinodon variegatus.
- (c) Any test in which the survival of test organisms is less than ninety (90) percent in each replicate control test chamber or failure to achieve test conditions as specified in Section 22a-430-3(j)(7)(A) of the Regulations of Connecticut State Agencies, such as maintenance of appropriate environmental controls, shall constitute an invalid test and will require immediate retesting. Failure to submit valid test results constitutes a permit violation.

- (d) Results of the toxicity tests required as part of this permit condition shall be entered on the Discharge Monitoring Report (DMR) for the month in which it was performed, using the appropriate parameter code. Additionally, complete and accurate test data, including all supporting chemical/physical measurements performed in association with the toxicity tests, as well as dose/response data shall be entered on the Aquatic Toxicity Monitoring Report form (ATMR). The ATMR shall be sent to the following address:

Aquatic Toxicity
Connecticut Department of Environmental Protection
Water Compliance Unit
122 Washington Street
Hartford, CT 06106

- (e) If any test result indicates that the maximum daily toxicity limit for the effluent has been exceeded, a second sample of the effluent shall be collected and tested as described above and the results reported to the Commissioner within 30 days of the receipt of the first set of test results.
- (f) If any two consecutive test results or any three test results in a single year indicate that the maximum daily toxicity limit has been exceeded, the permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall submit a report for the review and approval of the Commissioner in accordance with Section 22a-430-3(j)(10)(c) of the Regulations of Connecticut State Agencies describing proposed steps to eliminate the toxic impact of the discharge on the receiving waterbody. Such a report shall include a proposed time schedule to accomplish toxicity reduction.
- (7) The discharge shall contain no net increase in any of the metal parameters listed below, except as allowed in accordance with this permit. Sampling shall be conducted concurrently at both the intake and effluent at the frequency stated.

Parameter	Code	Minimum Frequency of Sampling	Sample Type
Total Copper	01042-028	Quarterly	Daily Composite
Total Lead	01051-028	Quarterly	Daily Composite
Total Nickel	01067-028	Quarterly	Daily Composite
Total Zinc	01092-028	Quarterly	Daily Composite
Ammonia - N	00610-028	Quarterly	Daily Composite
Total Suspended Solids	00530-028	Quarterly	Daily Composite
Surfactants- Anionic	38260-028	Quarterly	Daily Composite
Oil & Grease- T	70030-028	Quarterly	Grab

C. Discharge Serial No. 001A-1

Monitoring Location: 1

Description: Unit No. 1 Radiation Waste Sampling Tank Discharge
(Discharge Code 1170000)

Maximum Flow per Batch: 30,000 gallons

Maximum Frequency of Discharge: One per day

Expected Frequency: One per day

Parameter	Code	Minimum Frequency of Sampling	Sample Type
Specific Conductivity	00095-011	Weekly	Grab
pH	00400-012	Weekly	Grab

(a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.

(b) The report shall include a detailed explanation of any violations of the limitations specified above.

(c) Radiation monitoring is performed in accordance with Paragraph 2. above.

D. Discharge Serial No. 001A-2

Monitoring Location: 1

Description: Unit No. 1 Floor Drain Radiation Sample Tank
(Discharge Code 153000N)

Maximum Flow per Batch: 14,000 gallons

Maximum Frequency of Discharge: Two per day

Expected Frequency: One per day

(1) The maximum concentration specified below shall not be exceeded at any time.

Parameter	Code	Maximum Quantity Per Batch	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Total Suspended Solids	00530-019	1.9 kg	45.0 mg/l	Weekly	Grab
pH	00400-012			Weekly	Grab

(a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.

(b) The report shall include a detailed explanation of any violations of the limitations specified above.

- (c) Radiation monitoring is performed in accordance with Paragraph 2 above.

E. Discharge Serial No. 001A-2(a)
 Monitoring Location: 1
 Description: Long Term Freon Distillation Unit Discharge
 (Discharge Code 1150080)
 Maximum Flow per Batch: 220 gallons
 Maximum Frequency of Discharge: One per day
 Expected Frequency: Five per year

- (1) The maximum concentrations specified below shall not be exceeded at any time.

Parameter	Code	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Freon	70015-019	2.0 mg/l	Daily (c)	Grab
Oil & Grease, Total	70030-019	20.0 mg/l	Daily (c)	Grab

- (a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.

- (b) The report shall include a detailed explanation of any violations of the limitations specified above.

- (c) Sampling daily required only when discharge occurs.

F. Discharge Serial No. 001A-2(b)
 Monitoring Location: 1
 Description: Freon Distillation Unit Discharge
 (Discharge Code 1150080)
 Maximum Flow per Batch: 6,500 gallons
 Maximum Frequency of Discharge: One time only

- (1) The maximum concentrations specified below shall not be exceeded at any time.

Parameter	Code	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Freon	70015-019	2.0 mg/l	Daily (c)	Grab Sample Average
Oil & Grease, Total	70030-019	20.0 mg/l	Daily (c)	Grab Sample Average

- (a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.

(b) The report shall include a detailed explanation of any violations of the limitations specified above.

(c) Sampling daily required only when discharge occurs.

G. Discharge Serial No. 001A-3
Description: Outside Tank Area Rainwater Collection Discharge
(Discharge Code 108000N)
Flow: Intermittent

(1) Radiation monitoring is performed in accordance with Paragraph 2 above.

H. Discharge Serial No. 001A-4
Monitoring Location: 1
Description: Unit No. 1 Radiation Decontamination Solution Tank
Discharge (Discharge Code 1060000)
Maximum Flow per Batch: 3,500 gallons
Maximum Frequency of Discharge: Two per day
Expected Frequency: One per day

(1) The maximum concentration specified below shall not be exceeded at any time.

Parameter	Code	Maximum Quantity Per Batch	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Boric Acid	00698-019		574. mg/l	Weekly (c)	Grab
Boric Acid	00698-056	7.6 kg		Weekly (c)	Grab

(a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.

(b) The report shall include a detailed explanation of any violations of the limitations specified above.

(c) Sampling weekly for boric acid is required only when boric acid is being used.

(d) Radiation monitoring is performed in accordance with Paragraph 2 above.

I. Discharge Serial No. 001A-5
Monitoring Location: 1
Description: Unit No. 1 Auxiliary Heat Exchanger (Service Water)
Discharge (Discharge Code 102000d)
Maximum Daily Flow: 43,200,000 gallons per day

(1) The temperature of the discharge shall not exceed 90°F.

Parameter	Code	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
Temperature °F	00011-015	See Note (1) above	Weekly	Instantaneous
Free Available Chlorine	50064-019	0.25 mg/l	Weekly	Crab

(a) The permittee shall record the instantaneous flow (Code 00058-078) at the time of grab sample collection.

(b) The report shall include a detailed explanation of any violations of the limitations specified above.

J. Discharge Serial No. 001-B
Monitoring Location: 1
Description: Unit No. 2 Discharge
(Discharge Code 102000d)
Maximum Daily Flow: 820,000,000 gallons per day
Maximum Temperature: 105°F
Average Design Temperature Increase: 24°F

- (1) The maximum temperature increase at the Unit No. 2 discharge above the intake water temperature shall be 32°F.
- (2) The differential temperature increase at the Unit No. 2 discharge above the intake water temperature may be increased to 44°F for a period not exceeding 24 hours under conditions of reduced cooling water flow. In the event the temperature differential exceeds 32°F, the Department of Environmental Protection shall be notified in the monthly monitoring report.
- (3) The normal operating procedures include, usually not more than 12 times a year, the elevation of the intake water temperature on each condenser by a thermal backwash process required for the control of sea mussels. The true temperature difference between the receiving stream and discharge water shall be allowed to exceed the permit limit for brief periods during this treatment schedule.
- (4) Free available chlorine shall not be discharged in the condenser cooling water for more than two hours in any one day. Free available chlorine shall not be discharged in the condenser cooling water of more than one unit at any one time.
- (5) The pH of the discharge shall not be less than 6.0 or greater than 9.0 (Code 00400-012).

Parameter	Code	Maximum Daily Limits	Minimum Frequency of Sampling	Sample Type
Aquatic Toxicity, Acute	C0019-09A	See paragraph 3.J.(6) below		Daily Composite
Aquatic Toxicity, Chronic	C0020-09A	See paragraph 3.J.(6) below		Daily Composite
Flow	74076-007		Hourly	Instantaneous
pH	00400-012		Hourly (b)	Instantaneous
Temperature °F	00011-015		Hourly	Instantaneous
Free Available Chlorine	50064-019	0.25 mg/l	Weekly (c)	Grab
Free Available Chlorine	50064-001	737.15 kg/d	Weekly (c)	Grab

- (a) Report the following data:
- 1) Daily range of pH
 - 2) Daily range of flow
 - 3) Daily maximum temperature (°F)
 - 4) Daily minimum temperature
 - 5) Daily average temperature
 - 6) Monthly standard deviation of temperature
 - 7) Daily maximum temperature increase
 - 8) Daily minimum temperature increase
 - 9) Daily average temperature increase
 - 10) Monthly standard deviation of temperature increase
 - 11) Monthly maximum heat load (BTU/hr.)
 - 12) Monthly minimum heat load
 - 13) Monthly average heat load
 - 14) Monthly maximum rate of change of heat load
 - 15) Monthly standard deviation of heat load
 - 16) Total flow during chlorination period each sampling day
 - 17) Total daily flow
- (b) The permittee shall monitor pH manually every four hours whenever the automated pH monitoring equipment malfunctions.
- (c) Whenever Unit No. 2 is operating, weekly monitoring of free available chlorine shall be performed when chlorination of condenser cooling water occurs.
- (d) The report shall include a detailed explanation of any violations of the limitations specified above.
- (6) Effective upon issuance and thereafter a daily composite sample of the effluent shall not exhibit acute or chronic toxicity in the receiving waterbody.
- (a) Compliance with this permit condition shall be achieved when:

- (i) the Daily Flow of the discharge is greater than or equal to 28,800,000 gallons and there is no significant mortality in a daily composite sample of the effluent at a concentration equal to or greater than an NOAEL = 100% as determined by the pass/fail methodology in Section 22a-430-3(j)(7)(A) of the Regulations of Connecticut State Agencies; or
 - (ii) the Daily Flow of the discharge is less than 28,800,000 gallons and the LC_{50} value of a daily composite sample of the effluent is equal to or greater than an $LC_{50} > 85\%$. In determining LC_{50} value, five (5) test concentrations, in duplicate, shall be utilized and the LC_{50} value shall be determined by the computational method (Binomial Distribution, Probit Analysis, Moving Average Angle, Spearman-Kärber) which yields the smallest 95% confidence interval and LC_{50} value which is consistent with the dose-response data.
- (b) Monitoring to determine compliance with this limit shall be performed Quarterly (January, April, July, October) following the toxicity testing protocol for static acute toxicity tests in "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" (EPA 600/4-85/013) with the following specifications:
- (i) Mysidopsis bahia (5 days old or less) and Cyprinodon variegatus (30 +/- 5 days old) shall be used as test organisms
 - (ii) Synthetic or natural seawater adjusted to a salinity of 28-32 ppt shall be used as dilution water in the tests.
 - (iii) Test duration shall be 48 hours for Mysidopsis bahia AND 96 hours for Cyprinodon variegatus.
- (c) Any test in which the survival of test organisms is less than ninety (90) percent in each replicate control test chamber or failure to achieve test conditions as specified in Section 22a-430-3(j)(7)(A) of the Regulations of Connecticut State Agencies, such as maintenance of appropriate environmental controls, shall constitute an invalid test and will require immediate retesting. Failure to submit valid test results constitutes a permit violation.

- (d) Results of the toxicity tests required as part of this permit condition shall be entered on the Discharge Monitoring Report (DMR) for the month in which it was performed, using the appropriate parameter code. Additionally, complete and accurate test data, including all supporting chemical/physical measurements performed in association with the toxicity tests, as well as dose/response data shall be entered on the Aquatic Toxicity Monitoring Report form (ATMR). The ATMR shall be sent to the following address:

Aquatic Toxicity
Connecticut Department of Environmental Protection
Water Compliance Unit
122 Washington Street
Hartford, CT 06106

- (e) If any test result indicates that the maximum daily toxicity limit for the effluent has been exceeded, a second sample of the effluent shall be collected and tested as described above and the results reported to the Commissioner within 30 days of the receipt of the first set of test results.
- (f) If any two consecutive test results or any three test results in a single year indicate that the maximum daily toxicity limit has been exceeded, the permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall submit a report for the review and approval of the Commissioner in accordance with Section 22a-430-3(j)(10)(c) of the Regulations of Connecticut State Agencies describing proposed steps to eliminate the toxic impact of the discharge on the receiving waterbody. Such a report shall include a proposed time schedule to accomplish toxicity reduction.
- (7) The discharge shall contain no net increase in any of the metal parameters listed below, except as allowed in accordance with this permit. Sampling shall be conducted concurrently at both the intake and effluent at the frequency stated.

Parameter	Code	Minimum Frequency of Sampling	Sample Type
Total Copper	01042-028	Quarterly	Daily Composite
Total Lead	01051-028	Quarterly	Daily Composite
Total Nickel	01067-028	Quarterly	Daily Composite
Total Zinc	01092-028	Quarterly	Daily Composite
Ammonia - N	00610-028	Quarterly	Daily Composite
Total Suspended Solids	00530-028	Quarterly	Daily Composite
Surfactants Anionic	38260-028	Quarterly	Daily Composite
Oil & Grease-Total	70030-028	Quarterly	Grab

K. Discharge Serial No. 001B-1

Monitoring Location: 1

Description: Unit No. 2 Blowdown Tank and Blowdown Quench Tank Discharge
(Including Boric Acid From Steam Generator
Treatment) (Discharge Code 101060z)

Maximum Daily Flow: 1,440,000 gallons per day

(1) The temperature of the discharge shall not exceed 220°F.

(2) Prior to the use of diaminoethane the permittee must submit for the review and approval of the Commissioner an engineering report on process modifications.

Parameter	Code	Maximum Daily Quantity	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
Temperature °F	00011-015	See (1) Above		Weekly	Instantaneous
Total Suspended Solids	00530-019	30.0 mg/l		Weekly	Grab
Total Suspended Solids	00530-056	46.8 kg/d		Weekly	Grab
Boric Acid	00698-056	117. kg/d		Weekly	Grab
Ethanolamine	00196-019	10.0 mg/l		Weekly	Grab
Diaminoethane	00195-019	See Note (b) Below			

(a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection and/or the instantaneous flow (Code 00058-078) at the time of grab sample collection.

(b) Monitoring for diaminoethane shall be performed as approved by the Commissioner in accordance with Paragraph K.(2) above.

(c) The report shall include a detailed explanation of any violations of the limitations specified above.

(d) Sampling for boric acid required only when boric acid treatment of steam generator occurs.

(e) Radiation monitoring is performed in accordance with Paragraph 2 above.

L. Discharge Serial No. 001B-1(a)

Monitoring Location: 1

Description: Unit No. 2 Steam Generator Secondary Side Wet Layup
Drainage Discharge (Discharge Code 117000a)

Maximum Flow per Batch: 70,000 gallons

Maximum Frequency of Discharge: Two per day

Expected Frequency: Six per year

- (1) The temperature of the discharge shall not exceed 150°F.
- (2) A minimum of two (2) condenser circulating pumps shall be in service on Unit 2 during discharge.
- (3) No two (2) steam generators may discharge secondary side wet layup drainage at any one time.
- (4) Prior to the use of diaminoethane the permittee must submit for the review and approval of the Commissioner an engineering report on process modifications.
- (5) The maximum concentrations specified below shall not be exceeded at any time.

Parameter	Code	Maximum Quantity Per Batch	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Temperature °F	00011-015	See	(1) Above	Daily (c)	Instantaneous
Hydrazine	81313-019		125 mg/l	Daily (c)	Grab
Hydrazine	81313-001	33.12 kg/d		Daily (c)	Grab
Ethanolamine	CO196-019		5.0 mg/l	Daily (c)	Grab
Diaminoethane	CO195-019		See Note (b) Below		

- (a) The permittee shall record the instantaneous flow (Code 00058-078) at the time of grab sample collection.
- (b) Monitoring for diaminoethane shall be performed as approved by the Commissioner in accordance with Paragraph L.(4) above.
- (c) Daily sampling required only when discharging steam generator secondary side wet layup drainage.
- (d) The report shall include a detailed explanation of any violations of the limitations specified above.
- (e) Radiation monitoring is performed in accordance with Paragraph 2 above.

M. Discharge Serial No. 001B-2

Monitoring Location: 1

Description: Unit No. 2 Aerated Waste Radiation Monitor Tank
Discharge (Discharge Code 117000a)

Maximum Flow per Batch: 5,000 gallons

Maximum Frequency of Discharge: Three per day

Expected Frequency: Two per day

- (1) The maximum concentration specified below shall not be exceeded at any time.

- (2) A minimum of two (2) condenser circulating pumps shall be in service on Unit 2 during discharge except during Unit 2 shutdowns. During Unit 2 shutdowns, the maximum discharge flow shall be 30.5 gallons per minute and a minimum flow equivalent to (2) two service water pumps shall be in service on Unit 2 during discharge.

Parameter	Code	Maximum Quantity Per Batch	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Total Suspended Solids	00530-019		45.0 mg/l	Weekly	Grab
Boric Acid	00698-056	200. kg		Weekly	Grab
pH	00400-012			Weekly	Grab

- (a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.
- (c) Radiation monitoring is performed in accordance with Paragraph 2 above.

N. Discharge Serial No. 001B-2(a)

Monitoring Location: 1

Description: Unit No. 2 Steam Generator Chemical Cleaning Wastewaters Discharge (Discharge Code 101070a)

Maximum Flow per Batch: 107,000 gallons

Maximum Frequency of Discharge: One per day

Expected Frequency: One per year

- (1) The maximum concentrations specified below shall not be exceeded at any time.
- (2) A minimum of two (2) condenser circulating pumps shall be in service on Unit 2 during discharge.
- (3) Sixty days prior to performing chemical cleaning of the steam generator the permittee must submit for the review and approval of the Commissioner an engineering report on process modifications.

Parameter	Code	Maximum Daily Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Biochemical Oxygen Demand ⁵	00310-019		Daily	Daily Composite
Chemical Oxygen Demand	81017-019		Daily	Daily Composite
Ammonia - N	00610-019		Daily	Daily Composite
Copper-Total	01042-019	1.0 mg/l	Daily	Daily Composite
Iron-Total	01045-019	1.0 mg/l	Daily	Daily Composite
Beryllium-Total	01012-019		Daily	Daily Composite
Cadmium-Total	01027-019	0.1 mg/l	Daily	Daily Composite
Chromium-Total	01034-019	1.0 mg/l	Daily	Daily Composite
Lead-Total	01051-019	0.1 mg/l	Daily	Daily Composite
Nickel-Total	01067-019	1.0 mg/l	Daily	Daily Composite
Zinc-Total	01092-019	1.0 mg/l	Daily	Daily Composite
pH	00400-012		Hourly	Range During Composite
Total Suspended Solids	00530-019		Daily	Daily Composite
Oil and Grease-T	70030-019	10.0 mg/l	Daily	Grab

(a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.

(b) The report shall include a detailed explanation of any violations of the limitations specified above.

(c) Sampling required only when steam generator chemical cleaning discharge occurs.

O. Discharge Serial No. 001B-2(b)

Monitoring Location: 1

Description: Unit No. 2 Steam Generator Chemical Decontamination
Wastewater Discharge (Discharge Code 101060y)

Maximum Flow per Batch: 30,000 gallons

Maximum Frequency of Discharge: One per day

Expected Frequency: One per year

(1) The pH of the discharge shall not be less than 6.0 or greater than 9.0 (Code 00400-012).

(2) The maximum concentrations specified below shall not be exceeded at any time.

(3) A minimum of two (2) condenser circulating pumps shall be in service on Unit 2 during discharge.

- (4) Sixty days prior to performing chemical decontamination of the steam generator the permittee must submit for the review and approval of the Commissioner an engineering report on process modifications.

Parameter	Code	Maximum Daily Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Biochemical Oxygen Demand	00310-019		Daily	Daily Composite
Chemical Oxygen Demand	81017-019		Daily	Daily Composite
Citric Acid	77666-019		Daily	Daily Composite
Oxalic Acid	77081-019		Daily	Daily Composite
Nitric Acid	C0091-019		Daily	Daily Composite
Permanganate	C0109-019		Daily	Daily Composite
Ethylenediamine	78151-019		Daily	Daily Composite
Tetraacetic Acid				
Hydrogen Peroxide	00139-019		Daily	Daily Composite
Formic Acid	77006-019		Daily	Daily Composite
Copper-Total	01042-019	1.0 ug/l	Daily	Daily Composite
Iron-Total	01045-019	1.0 mg/l	Daily	Daily Composite
Cadmium-Total	01027-019	0.1 mg/l	Daily	Daily Composite
Chromium-Total	01034-019	1.0 mg/l	Daily	Daily Composite
Lead-Total	01051-019	0.1 mg/l	Daily	Daily Composite
Nickel-Total	01067-019	1.0 mg/l	Daily	Daily Composite
Zinc-Total	01092-019	1.0 mg/l	Daily	Daily Composite
Total Suspended Solids	00530-019	30.0 mg/l	Daily	Daily Composite
pH	00400-019	See (1) Above	Hourly	Range During Composite
Oil and Grease-T	70030-019	30.0 mg/l	Daily	Grab

- (a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.
- (c) Sampling required only when discharging steam generator chemical decontamination wastewater.
- (d) Sampling required only for parameters included in the process approved by the Commissioner in accordance with Paragraph O.(4) above.

P. Discharge Serial No. 001B-3

Monitoring Location: 1

Description: Unit No. 2 Coolant Waste Radiation Monitor Tank
Discharge (Discharge Code 1170000)

Maximum Flow per Batch: 30,000 gallons

Maximum Frequency of Discharge: Two per day

Expected Frequency: One per day

- (1) The maximum concentration specified below shall not be exceeded at any time.
- (2) A minimum of two (2) condenser circulating pumps shall be in service on Unit 2 during discharge except during Unit 2 shutdowns. During Unit 2 shutdowns, the maximum discharge flow shall be 30.5 gallons per minute and a minimum flow equivalent to (2) two service water pumps shall be in service on Unit 2 during discharge.

Parameter	Code	Maximum Quantity Per Batch	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Total Suspended Solids	00530-019		22.5 mg/l	Weekly	Grab
Boric Acid	00698-001	700 kg/d		Weekly	Grab

- (a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.
- (c) Radiation monitoring is performed in accordance with Paragraph 2. above.

Q. Discharge Serial No. 001B-5

Monitoring Location: 1

Description: Unit No. 2 Auxiliary Heat Exchanger (Service Water Discharge) (Discharge Code 102000d)

Maximum Daily Flow: 28,800,000 gallons

- (1) The temperature of the discharge shall not exceed 95° F.

Parameter	Code	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
Temperature F	00011-015	See (1) Above	Weekly	Instantaneous
Free Available Chlorine	50064-019	0.25 mg/l	Weekly	Grab

- (a) The permittee shall record the instantaneous flow (Code 00058-078) at the time of grab sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.

R. Discharge Serial No. 001B-6

Monitoring Location: 1

Description: Unit No. 2 Condensate Polisher Regeneration Wastewater Neutralization Tank Discharge Including System Floor Drains, Plant Equipment Washwater, and Boric Acid from Steam Generator Treatment (Discharge Code 1060000)

Maximum Flow per Batch: 25,000 gallons

Maximum Frequency of Discharge: Three per day

Expected Frequency: Two per day

- (1) Prior to the use of diaminoethane the permittee must submit for the review and approval of the Commissioner an engineering report on process modifications.
- (2) A minimum of two (2) condenser circulating pumps shall be in service on Unit 2 during discharge.
- (3) The maximum concentrations specified below shall not be exceeded at any time.

Parameter	Code	Maximum Quantity Per Batch	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Total Suspended Solids	00530-019		45.0 mg/l	Weekly	Grab
pH	00400-012			Weekly	Grab
Oil and Grease-T	70030-019		20.0 mg/l	Monthly	Grab
Boric Acid	00698-056	32.0 kg		Weekly (c)	Grab
Ethanolamine	CO196-056	230 kg		Weekly	Grab
Diaminoethane	CO195-056		See (d) Below		

- (a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.
- (c) Sampling weekly for boric acid required only when boric acid treatment of steam generator occurs.
- (d) Monitoring for diaminoethane shall be performed as approved by the Commissioner in accordance with Paragraph R.(1). above.

- (e) Radiation monitoring is performed in accordance with Paragraph 2 above.

S. Discharge Serial No. 001B-7

Monitoring Location: 1

Description: Unit No. 2 Condensate Polisher Auxiliary Heat Exchanger
(Service Water) Discharge (Discharge Code 102000c)

Maximum Daily Flow: 5,760,000 gallons per day

- (1) The temperature of the discharge shall not exceed 85°F.

Parameter	Code	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
Free Available Chlorine	50064-019	0.25 mg/l	Weekly	Grab
Temperature F	00011-015	See (1) Above	Weekly	Instantaneous

- (a) The permittee shall record the instantaneous flow (Code 00058-078) at the time of grab sample collection.

- (b) The report shall include a detailed explanation of any violations of the limitations specified above.

T. Discharge Serial No. 001B-8

Monitoring Location: 1

Description: Unit No. 2 Condenser Hotwell Discharge
(Discharge Code 117000a)

Maximum Flow per Batch: 100,000 gallons

Maximum Frequency of Discharge: One per day

Expected Frequency: Five per year

- (1) The temperature of the discharge shall not exceed 112°F.
- (2) A minimum of two (2) condenser circulating pumps shall be in service on Unit 2 during discharge.
- (3) Prior to the use of diaminoethane the permittee must submit for the review and approval of the Commissioner an engineering report on process modifications.
- (4) The maximum concentrations specified below shall not be exceeded at any time.

Parameter	Code	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Temperature F	00011-015	SEE NOTE (1) ABOVE	Daily (c)	Grab
pH	00400-012		Daily (c)	Instantaneous
Total Suspended Solids	00530-019	45.0 mg/l	Daily (c)	Grab
Total Iron	01045-019	5.0 mg/l	Daily (c)	Grab
Hydrazine	81313-019	50.0 mg/l	Daily (c)	Grab
Ethanolamine	CO196-019	3.0 mg/l	Daily (c)	Grab
Diaminoethane	CO195-019	See Note (d) Below		

- (a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.
- (c) Sampling required only when the condenser hotwell discharge occurs.
- (d) Monitoring for diaminoethane shall be performed as approved by the Commissioner in accordance with Paragraph T.(3). above.

U. Discharge Serial No. 001B-9

Monitoring Location: 1

Description: Unit No. 2 Non-contaminated Closed Cooling Water System
Drainage Discharge (Discharge Code 102000b)

Maximum Daily Flow: 30,000 gallons per day

- (1) The temperature of the discharge shall not exceed 100°F.
- (2) The maximum limits specified below shall not be exceeded at any time.
- (3) A minimum of two (2) condenser circulating pumps shall be in service on Unit 2 during discharge except during Unit 2 shutdowns. During Unit 2 shutdowns, the maximum discharge flow shall be 8.5 gallons per minute and a minimum flow equivalent to (2) two service water pumps shall be in service on Unit 2 during discharge.

Parameter	Code	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
Temperature °F	00011-015	See (1) Above	Daily	Instantaneous
Hydrazine	81313-019	75.0 mg/l	Daily	Grab

- (a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection and/or the instantaneous flow (Code 00058-078) at the time of grab sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.
- (c) Sampling required only when discharging closed cooling water system drainage.

V.

Discharge Serial No. 001-C

Monitoring Location: 1

Description: Unit No. 3 Discharge

(Discharge Code 102000d)

Maximum Daily Flow: 1,313,200,000 gallons per day

Maximum Temperature: 98°F

Average Design Temperature Increase: 18°F

- () The maximum temperature increase at the Unit No. 3 discharge above the intake water temperature shall be 24°F.
- (2) The differential temperature increase at the Unit No. 3 discharge above the intake water temperature may be increased to 30°F for a period not exceeding 24 hours under conditions of reduced cooling water flow. In the event the temperature differential exceeds 24°F, the Department of Environmental Protection shall be notified in the monthly monitoring report.
- (3) The normal operating procedures include, usually not more than 12 times a year, the elevation of the intake water temperature on each condenser by a thermal backwash process required for the control of sea mussels. The true temperature difference between the receiving stream and discharge water shall be allowed to exceed the permit limit for brief periods during this treatment schedule.
- (4) Free available chlorine shall not be discharged in the condenser cooling water for more than two hours in any one day. Free available chlorine shall not be discharged in the condenser cooling water of more than one unit at any one time.
- (5) The pH of the discharge shall not be less than 6.0 or greater than 9.0 (Code 00400-012).

Parameter	Code	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
Aquatic Toxicity, Acute	C0019-09A	See paragraph 3.V.(6) below	Quarterly	Daily Composite
Aquatic Toxicity, Chronic	C0020-09A	See paragraph 3.V.(6) below	Quarterly	Daily Composite
Flow	74076-007		Hourly	Instantaneous
pH	00400-012		Hourly (b)	Instantaneous
Temperature °F	00011-015		Hourly	Instantaneous
Free Available Chlorine	50064-019	0.25 mg/l	Weekly (c)	Grab
Free Available Chlorine	50064-001	1386. kg/d	Weekly (c)	Grab

(a) Report the following data:

- 1) Daily range of pH
- 2) Daily range of flow
- 3) Daily maximum temperature (°F)
- 4) Daily minimum temperature
- 5) Daily average temperature
- 6) Monthly standard deviation of temperature
- 7) Daily maximum temperature increase
- 8) Daily minimum temperature increase
- 9) Daily average temperature increase
- 10) Monthly standard deviation of temperature increase
- 11) Monthly maximum heat load (BTU/hr.)
- 12) Monthly minimum heat load
- 13) Monthly average heat load
- 14) Monthly maximum rate of change of heat load
- 15) Monthly standard deviation of heat load
- 16) Total flow during chlorination period each sampling day
- 17) Total daily flow

(b) The permittee shall monitor pH manually every four hours whenever the automated pH monitoring equipment malfunctions.

(c) Whenever Unit 3 is operating, weekly monitoring of free available chlorine shall be performed when chlorination of condenser cooling water occurs.

(d) The report shall include a detailed explanation of any violations of the limitations specified above.

(6) Effective upon issuance and thereafter a daily composite sample of the effluent shall not exhibit acute or chronic toxicity in the receiving waterbody.

(a) Compliance with this permit condition shall be achieved when:

- (i) the Daily Flow of the discharge is greater than or equal to 43,200,000 gallons and there is no significant mortality in a daily composite sample of the effluent at a concentration equal to or greater than an NOAEL = 100% as determined by the pass/fail methodology in Section 22a-430-3(j)(7)(A) of the Regulations of Connecticut State Agencies; or
 - (ii) the Daily Flow of the discharge is less than 43,200,000 gallons and the LC_{50} value of a daily composite sample of the effluent is equal to or greater than an $LC_{50} > 67\%$. In determining LC_{50} value, five (5) test concentrations, in duplicate, shall be utilized and the LC_{50} value shall be determined by the computational method (Binomial Distribution, Probit Analysis, Moving Average Angle, Spearman-Kärber) which yields the smallest 95% confidence interval and LC_{50} value which is consistent with the dose-response data.
- (b) Monitoring to determine compliance with this limit shall be performed Quarterly (January, April, July, October) following the toxicity testing protocol for static acute toxicity tests in "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" (EPA 600/4-85/013) with the following specifications:
- (i) Mysidopsis bahia (5 days old or less) and Cyprinodon variegatus (30 +/- 5 days old) shall be used as test organisms
 - (ii) Synthetic or natural seawater adjusted to a salinity of 28-32 ppt shall be used as dilution water in the tests.
 - (iii) Test duration shall be 48 hours for Mysidopsis bahia and 96 hours for Cyprinodon variegatus.
- (c) Any test in which the survival of test organisms is less than ninety (90) percent in each replicate control test chamber or failure to achieve test conditions as specified in Section 22a-430-3(j)(7)(A) of the Regulations of Connecticut State Agencies, such as maintenance of appropriate environmental controls, shall constitute an invalid test and will require immediate retesting. Failure to submit valid test results constitutes a permit violation.

- (d) Results of the toxicity tests required as part of this permit condition shall be entered on the Discharge Monitoring Report (DMR) for the month in which it was performed, using the appropriate parameter code. Additionally, complete and accurate test data, including all supporting chemical/physical measurements performed in association with the toxicity tests, as well as dose/response data shall be entered on the Aquatic Toxicity Monitoring Report form (ATMR). The ATMR shall be sent to the following address:

Aquatic Toxicity
Connecticut Department of Environmental Protection
Water Compliance Unit
122 Washington Street
Hartford, CT 06106

- (e) If any test result indicates that the maximum daily toxicity limit for the effluent has been exceeded, a second sample of the effluent shall be collected and tested as described above and the results reported to the Commissioner within 30 days of the receipt of the first set of test results.
- (f) If any two consecutive test results or any three test results in a single year indicate that the maximum daily toxicity limit has been exceeded, the permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall submit a report for the review and approval of the Commissioner in accordance with Section 22a-430-3(j)(10)(c) of the Regulations of Connecticut State Agencies describing proposed steps to eliminate the toxic impact of the discharge on the receiving waterbody. Such a report shall include a proposed time schedule to accomplish toxicity reduction.
- (7) The discharge shall contain no net increase in any of the metal parameters listed below, except as allowed in accordance with this permit. Sampling shall be conducted concurrently at both the intake and effluent at the frequency stated.

Parameter	Code	Minimum Frequency of Sampling	Sample Type
Total Copper	01042-028	Quarterly	Daily Composite
Total Lead	01051-028	Quarterly	Daily Composite
Total Nickel	01067-028	Quarterly	Daily Composite
Total Zinc	01092-028	Quarterly	Daily Composite
Ammonia - N	00610-028	Quarterly	Daily Composite
Total Suspended Solids	00530-028	Quarterly	Daily Composite
Surfactants-Anionic	38260-028	Quarterly	Daily Composite
Oil & Grease- T	70030-028	Quarterly	Grab

W. Discharge Serial No. 001C-1

Monitoring Location: 1

Description: Unit No. 3 Steam Generator Blowdown Discharge
(Discharge Code 101060z)

Maximum Daily Flow: 1,400,000 gallons per day

- (1) The temperature of the discharge shall not exceed 220°F.
- (2) Prior to the use of ethanolamine and diaminoethane the permittee must submit for the review and approval of the Commissioner an engineering report on process modifications.

Parameter	Code	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
Temperature °F	00011-015	See (1) Above	Weekly	Grab
Total Suspended Solids	00530-019	60.0 mg/l	Weekly	Grab
pH	00400-012		Weekly	Grab
Boric Acid	00698-056		Weekly	Grab
Ethanolamine	CO196-019	See (d) Below		
Diaminoethane	CO195-019	See (d) Below		

- (a) The permittee shall record the instantaneous flow (Code 00058-078) at the time of grab sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.
- (c) Monitoring weekly for boric acid required only when boric acid treatment of steam generator occurs.
- (d) Monitoring for ethanolamine and diaminoethane shall be performed as approved by the Commissioner in accordance with Paragraph W.(2) above.
- (e) Radiation monitoring is performed in accordance with Paragraph 2. above.

X. Discharge Serial No. 001C-1(a)

Monitoring Location: 1

Description: Unit No. 3 Steam Generator Secondary Side Wet Layup
Drainage Discharge (Discharge Code 117000a)

Maximum Flow per Batch: 144,000 gallons

Maximum Frequency of Discharge: Two per day

Expected Frequency: Twelve per year

- (1) A minimum of two (2) condenser circulating pumps shall be in service on Unit 3 during discharge.

- (2) Prior to the use of ethanolamine or diaminoethane the permittee shall submit for the review and approval of the Commissioner an engineering report on process modifications.
- (3) The maximum concentrations specified below shall not be exceeded at any time.

Parameter	Code	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Hydrazine	81313-019	125.0 mg/l	Daily (c)	Grab
Ethanolamine	CO196-019	See (d) Below		
Diaminoethane	CO195-019	See (d) Below		

- (a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection and/or the instantaneous flow (Code 00058-078) at the time of grab sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.
- (c) Sampling required only when discharging steam generator secondary side wet layup drainage.
- (d) Monitoring for ethanolamine and diaminoethane shall be performed as approved by the Commissioner in accordance with Paragraph X.(2). above.
- (e) Radiation monitoring is performed in accordance with Paragraph 2 above.

Y. Discharge Serial No. 001C-2

Monitoring Location: 1

Description: Unit No. 3 Radiation Waste Test Tank Discharge
(Discharge Code 153000n)

Maximum Daily per Batch: 25,000 gallons

Maximum Frequency of Discharge: Two per day

Expected Frequency: Two per day

- (1) A minimum of two (2) condenser circulating pumps shall be in service on Unit 3 during discharge except during Unit 3 shutdowns. During Unit 3 shutdowns, the maximum discharge flow shall be 15.0 gallons per minute and a minimum flow equivalent to two (2) service water pumps shall be in service on Unit 3 during discharge.

Parameter	Code	Maximum Quantity Per Batch	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Boric Acid	00698-056	952.4 kg		Weekly	Grab
Lithium-Total	01132-019			Weekly	Grab
Specific Conductivity	00095-011			Weekly	Grab
pH	00400-012			Weekly	Grab

(a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.

(b) The report shall include a detailed explanation of any violations of the limitations specified above.

(c) Radiation monitoring is performed in accordance with Paragraph 2. above.

2. Discharge Serial No. 001C-3

Monitoring Location: 1

Description: Low Level Radiation Waste Drain Tank Discharge
(Discharge Code 117000a)

Maximum Flow per Batch: 5,000 gallons

Maximum Frequency of Discharge: Four per day

Expected Frequency: Four per day

(1) The maximum concentration specified below shall not be exceeded at any time.

(2) A minimum of two (2) condenser circulating pumps shall be in service on Unit 3 during discharge if at any time the boric acid evaporator units are not functional and the boric acid concentration exceeds 30 mg/l.

Parameter	Code	Maximum Quantity Per Batch	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Boric Acid	00698-056	250. kg		Weekly	Grab
Total Suspended Solids	00530-019		45.0 mg/l	Weekly	Grab
pH	00400-012			Weekly	Grab

(a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.

(b) The report shall include a detailed explanation of any violations of the limitations specified above.

- (c) Radiation monitoring is performed in accordance with Paragraph 2. above.

AA. Discharge Serial No. 001C-4

Monitoring Location: 1

Description: Unit No. 3 Makeup Demineralizer Backwash Discharge
Including Feedwater System Wet Layup Drainage and
Auxiliary Boiler Stack Drainage
(Discharge Code 1060000)

Maximum Flow per Batch: 80,000 gallons

Maximum Frequency of Discharge: One per day

Expected Frequency: One per day

- (1) The maximum concentrations specified below shall not be exceeded at any time.

Parameter	Code	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Total Suspended Solids	00530-019	45.0 mg/l	Weekly	Grab
Hydrazine	81313-019	75.0 mg/l	Weekly (c)	Grab
pH	00400-012		Weekly	Grab

- (a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.

- (b) The report shall include a detailed explanation of any violations of the limitations specified above.

- (c) Sampling weekly for hydrazine required only when draining the feedwater system wet layup or the auxiliary boiler stack system.

BB. Discharge Serial No. 001C-5

Monitoring Location: 1

Description: Unit No. 3 Auxiliary Heat Exchanger (Service Water)
Discharge (Discharge Code 102000d)

Maximum Daily Flow: 43,200,000 gallons per day

- (1) The temperature of the discharge shall not exceed 100° F.

Parameter	Code	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
Temperature °F	00011-015	See (1) Above	Weekly	Instantaneous
Free Available Chlorine	50064-019	0.25 mg/l	Weekly	Grab

- (a) The permittee shall record the instantaneous flow (Code 00058-078) at the time of grab sample collection.

- (b) The report shall include a detailed explanation of any violations of the limitations specified above.

CC. Discharge Serial No. 001C-6

Monitoring Location: 1

Description: Unit No. 3 Condensate Polisher Regeneration Wastewater
Neutralization Tank Discharge Including Plant Equipment
Washwaters And Unit No. 3 Hot Water Heating System
Drainage (Discharge Code 1060000)

Maximum Flow per Batch: 25,000 gallons

Maximum Frequency of Discharge: Two per day

Expected Frequency: Two per day

- (1) The temperature of the discharge shall not exceed 100°F.
- (2) The pH of the discharge shall not be less than 6.0 or greater than 9.0. (Code 00400-012)
- (3) Prior to the use of ethanolamine and diaminoethane the permittee must submit for the review and approval of the Commissioner an engineering report on process modifications.
- (4) The maximum concentrations specified below shall not be exceeded at any time.

Parameter	Code	Maximum Quantity Per Day	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Temperature °F	00011-015		See (1) Above	Weekly	Grab
pH	00400-019		See (2) Above	Hourly	Grab
Total Suspended Solids	00530-019		45.0 mg/l	Weekly	Grab
Total Suspended Solids	00530-056	4.24 kg		Weekly	Grab
Oil and Grease-T	70030-056	188. kg		Monthly	Grab
Oil and Grease-T	70030-019		20.0 mg/l	Monthly	Grab
Hydrazine	81313-019		75.0 mg/l	Daily (c)	Grab
Ethanolamine	CO196-056		See (d) Below		
Diaminoethane	CO195-056		See (d) Below		

- (a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection and/or the instantaneous flow (Code 00058-078) at the time of grab sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.
- (c) Sampling daily for boric acid and hydrazine is required only when Unit No. 3 Hot Water Heating System is being discharged.

(d) Monitoring for ethanolamine and diaminoethane shall be performed as approved by the Commissioner in accordance with Paragraph CC.(3) above.

(e) Radiation monitoring is performed in accordance with Paragraph 2 above.

DD. Discharge Serial No. 001C-6(a)

Monitoring Location: 1

Description: Unit No. 3 Steam Generator Chemical Decontamination
Wastewater (Discharge Code 1060000)

Maximum Flow per Batch: 40,000 gallons

Maximum Frequency of Discharge: One per day

Expected Frequency: One per year

(1) The pH of the discharge shall not be less than 6.0 or greater than 9.0. (Code 00400-012)

(2) The maximum concentrations specified below shall not be exceeded at any time.

(3) Sixty days prior to performing chemical decontamination of the steam generator the permittee must submit for the review and approval of the Commissioner an engineering report on process modifications.

Parameter	Code	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Biochemical	00310-019		Daily	Daily Composite
Oxygen Demand ⁵				
Chemical Oxygen	81017-019		Daily	Daily Composite
Demand				
Citric Acid	77666-019		Daily	Daily Composite
Oxalic Acid	77081-019		Daily	Daily Composite
Nitric Acid	C0091-019		Daily	Daily Composite
Permanganate	C0109-019		Daily	Daily Composite
Ethylenediamine	78151-019		Daily	Daily Composite
Tetraacetic Acid				
Hydrogen Peroxide	00139-019		Daily	Daily Composite
Formic Acid	77006-019		Daily	Daily Composite
Copper-Total	01042-019	1.0 mg/l	Daily	Daily Composite
Iron-Total	01045-019	1.0 mg/l	Daily	Daily Composite
Cadmium-Total	01027-019	0.1 mg/l	Daily	Daily Composite
Chromium-Total	01034-019	1.0 mg/l	Daily	Daily Composite
Lead-Total	01051-019	0.1 mg/l	Daily	Daily Composite
Nickel-Total	01067-019	1.0 mg/l	Daily	Daily Composite
Zinc-Total	01092-019	1.0 mg/l	Daily	Daily Composite
Total Suspended	00530-019	30.0 mg/l	Daily	Daily Composite
Solids				
pH	00400-019	SEE NOTE (1) ABOVE	Hourly	Range During Composite Grab
Oil and Grease-T	70030-019	30.0 mg/l	Daily	

- (a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection and/or the instantaneous flow (Code 00058-078) at the time of grab sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.
- (c) Sampling required only when discharging steam generator chemical decontamination wastewater. Sampling required only for parameters included in the process approved by the Commissioner in accordance with Paragraph DD.(3) above.

EE. Discharge Serial No. 001C-6(b)

Monitoring Location: 1

Description: Unit No. 3 Auxiliary Boiler Blowdown Sump Discharge
(Discharge Code 117000a)

Maximum Daily Flow: 72,000 gallons

- (1) The temperature of the discharge shall not exceed 210°F.
- (2) The maximum concentration specified below shall not be exceeded at any time.

Parameter	Code	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
Temperature °F	00011-015	See (1) Above	Weekly (c)	Grab
Hydrazine	81313-019	75.0 mg/l	Weekly (c)	Grab

- (a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.
- (c) Sampling weekly is required only when the auxiliary boiler is in operation.

FF. Discharge Serial No. 001C-8

Monitoring Location: 1

Description: Unit No. 3 Condenser Hotwell Discharge
(Discharge Code 1170000)

Maximum Flow per Batch: 100,000 gallons

Maximum Frequency of Discharge: One per day

Expected Frequency: Five per year

- (1) The temperature of the discharge shall not exceed 112°F.

- (2) Prior to the use of ethanolamine and diaminoethane the permittee must submit for the review and approval of the Commissioner an engineering report on process modifications.
- (3) The maximum concentrations specified below shall not be exceeded at any time.

Parameter	Code	Maximum Concentration Per Batch	Minimum Frequency of Sampling	Sample Type
Temperature °F	00011-015	See (1) Above	Daily (c)	Grab
pH	00400-012		Daily (c)	Instantaneous
Total Suspended Solids	00530-019	45.0 mg/l	Daily (c)	Grab
Total Iron	01045-019	5.0 mg/l	Daily (c)	Grab
Hydrazine	81313-019	50.0 mg/l	Daily (c)	Grab
Ethanolamine	CO196-019	See (d) Below		
Diaminoethane	CO195-019	See (d) Below		

- (a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.
- (c) Sampling daily is required only when condenser hotwell discharge occurs.
- (d) Monitoring for ethanolamine and diaminoethane shall be performed as approved by the Commissioner in accordance with Paragraph FF.(2) above.

GG. Discharge Serial No. 001C-9

Monitoring Location: 1

Description: Unit No. 3 Non-contaminated Closed Cooling Water System
Drainage Discharge (Discharge Code 102000b)

Maximum Daily Flow: 30,000 gallons per day

- (1) The temperature of the discharge shall not exceed 100°F.
- (2) The maximum concentration specified below shall not be exceeded at any time.
- (3) A minimum of two (2) condenser circulating pumps shall be in service on Unit 1 during discharge except during Unit 3 shutdowns. During Unit 3 shutdowns, the maximum discharge flow shall be 10.0 gallons per minute and a minimum flow equivalent to two (2) service water pumps shall be in service on Unit 3 during discharge.

Parameter	Code	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
Temperature °F	00011-015	See (1) Above	Daily (c)	Grab
Hydrazine	81313-019	75.0 mg/l	Daily (c)	Grab

- (a) The permittee shall record the instantaneous flow (Code 00058-078) at the time of grab sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.
- (c) Sampling daily for temperature and hydrazine required only when discharging closed cooling water system drainage.

HH. Discharge Serial No. 002

Description: Unit No. 1 Screen Washwater Discharge
(Discharge Code 106000n)

Receiving Stream - Niantic Bay (Basin Code 2000)

Present/Future Water Quality Standard - SA/SA

Maximum Daily Flow: 2,016,000 gallons

II. Discharge Serial No. 003

Description - Unit No. 2 Screen Washwater Discharge (Code 106000n)

Receiving Stream - Niantic Bay (Basin Code 2000)

Present/Future Water Quality Standard - SA/SA

Maximum Daily Flow - 2,540,000 gallons

JJ. Discharge Serial No. 004

Description - Unit No. 3 Screen Washwater Discharge (Code 106000n)

Receiving Stream - Niantic Bay (Basin Code 2000)

Present/Future Water Quality Standard - SA/SA

Maximum Daily Flow - 5,760,000 gallons

KK. Discharge Serial No. 005-1

Monitoring Location: 1

Description: Unit No. 1 Non-contaminated Floor Drains, Transformer
Yard Drains, Water Washes, Clean Water Drains, and
Surface Water Runoff (Discharge Code 1080000)

Receiving Stream: Long Island Sound via Quarry Cut (Basin Code 2000)

Present/Future Water Quality Standard: SA/SA

Flow: Intermittent

- (1) The maximum concentrations specified below shall not be exceeded at any time.

Parameter	Code	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
Oil and Grease-T	70030-019	20.0 mg/l	Monthly (c)	Grab
Total Suspended Solids	00530-019	30.0 mg/l	Monthly	Grab

- (a) The permittee shall record the instantaneous flow (Code 00058-078) at the time of grab sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.
- (c) Monitoring monthly required when oil separator discharge occurs.

LL. Discharge Serial No. 006-1

Monitoring Location: 1

Description: Unit No. 2 and Unit No. 3 Non-contaminated Floor Drains Including Boric Acid From Steam Generator Treatment, Continuous Blowdown From R. O. Treatment of Makeup Water, Unit No. 2 and Unit No. 3 Diesel Generator Cooling Water Drainage, Water Softener Regeneration Drainage, Unit No. 3 Control Building Cooling System Drainage, Water Washes, Clean Water Drains, and Surface Water Runoff (Discharge Code 101060z)

Receiving Stream: Niantic Bay (Basin Code 2000)

Present/Future Water Quality Standard: SA/SA

Maximum Daily Flow: 432,000 gallons (Excluding Surface Water Runoff)

- (1) The maximum limits specified below shall not be exceeded at any time.
- (2) The pH of the discharge shall not be less than 6.0 or greater than 9.0 (Code 00400-012).

Parameter	Code	Average Monthly Limits	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
Aquatic Toxicity, Acute	C0019-09A	See paragraph 3.LL.(3) below		Quarterly	Daily Composite
Aquatic Toxicity, Chronic	C0020-09A	See paragraph 3.LL.(4) below		Quarterly	Daily Composite
Boric Acid	00698-001		See (f) below	Weekly (d)	Daily Composite
Oil and Grease-T	70030-019	10.0 mg/l	20.0 mg/l	Monthly (c)	Grab Sample
Total Suspended Solids	00530-019	20.0 mg/l	30.0 mg/l	Weekly (e)	Average Daily Composite
pH	00400-012	See (2) Above		Weekly (e)	Range during Composite
Copper-Total	01042-001	.0474 kg/d	See (f) below	Weekly	Daily Composite
Lead-Total	01051-001	.2273 kg/d	See (f) below	Weekly	Daily Composite
Nickel-Total	01067-001	.2207 kg/d	See (f) below	Weekly	Daily Composite
Zinc-Total	01092-019	.401 kg/d	See (f) below	Weekly	Daily Composite
Total Residual Chlorine	50060-019	.12 mg/l	.24 mg/l	Weekly	Grab Sample
Ammonia-N	00610-019			Quarterly	Average Daily Composite
Surfactants Anionic	38260-019			Quarterly	Daily Composite

- (a) The permittee shall record the instantaneous flow (Code 00058-078) at the time of grab sample collection.
 - (b) The report shall include a detailed explanation of any violations of the limitations specified above.
 - (c) Monitoring monthly for oil and grease required when oil separator discharge occurs.
 - (d) Monitoring weekly for boric acid required only when boric acid treatment of steam generator occurs.
 - (e) Monitoring weekly for total suspended solids and pH shall only include dry weather flows.
 - (f) The following maximum daily limits shall apply for boric acid, total copper, total lead, total nickel and total zinc respectively: Boric Acid-4.1 kg/d, Cu-.0948 kg/d, Pb-.2546 kg/d, Ni-.4414 kg/d, Zn-.802 kg/d.
- (3) Effective upon issuance and thereafter a daily composite sample of the effluent shall not exhibit acute toxicity in the receiving waterbody.
- (a) Dilution equivalent to 342,000 gallons per hour (gph) is allocated to a zone of influence for assimilation of toxicity. This allocation shall be used to calculate the instream waste concentration (IWC) according to the formula:

$$IWC = \frac{\text{maximum daily flow}}{(\text{maximum daily flow} + \text{allocated zone of influence flow})} \times 100$$
 - (b) In lieu of maximum daily flow, the mean effluent flow rate for the previous 30 operating days may be used to calculate the instream waste concentration provided the permittee maintains an accurate record of the total flow and number of hours of discharge for each operating day and provided that the flow rate for any one operating day used in calculating the mean does not exceed the mean flow by more than twenty-five percent (25%).
 - (c) Compliance with this permit condition shall be achieved when the LC_{50} value for the effluent is greater than three (3) times the IWC.
 - (d) Monitoring to determine compliance with this limit shall be performed Quarterly (January, April, July, October) following the toxicity testing protocol for static acute toxicity tests in "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" (EPA 600/4-85/013) with the following specifications:
 - (i) Mysidopsis bahia (5 days old or less) shall be used as test organisms.

- (ii) Synthetic or natural seawater adjusted to a salinity of 28-32 ppt shall be used as dilution water in the tests.
 - (iii) Test duration shall be 48 hours for Mysidopsis bahia.
- (4) Effective upon issuance and thereafter a daily composite sample of the effluent shall not exhibit chronic toxicity in the receiving waterbody.
- (a) Dilution equivalent to 342,000 gallons per hour (gph) is allocated to a zone of influence for assimilation of toxicity. This allocation shall be used to calculate the instream waste concentration (IWC) according to the formula:

$$IWC = \frac{\text{maximum daily flow}}{(\text{maximum daily flow} + \text{allocated zone of influence flow})} \times 100$$
 - (b) In lieu of maximum daily flow, the mean effluent flow rate for the previous 30 operating days may be used to calculate the instream waste concentration provided the permittee maintains an accurate record of the total flow and number of hours of discharge for each operating day and provided that the flow rate for any one operating day used in calculating the mean does not exceed the mean flow by more than twenty-five percent (25%).
 - (c) Compliance with this permit condition shall be achieved when the LC_{50} value for the effluent is greater than twenty (20) times the IWC.
 - (d) Monitoring to determine compliance with this limit shall be performed Quarterly (January, April, July, October) following the toxicity testing protocol for static acute toxicity tests in "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" (EPA 600/4-85/013) with the following specifications:
 - (i) Mysidopsis bahia (5 days old or less) shall be used as test organisms.
 - (ii) Synthetic or natural seawater adjusted to a salinity of 28-32 ppt shall be used as dilution water in the tests.
 - (iii) Test duration shall be 48 hours for Mysidopsis bahia.
- (5) (a) In determining LC_{50} values, five (5) test concentrations, in duplicate, shall be utilized.
- (b) The LC_{50} value shall be determined by the computational method⁵⁰ (Binomial Distribution, Probit Analysis, Moving Average Angle, Spearman-Kärber) which yields the smallest 95% confidence interval and LC_{50} value which is consistent with the dose-response data.

- (c) Any test in which the survival of test organisms is less than ninety (90) percent in each replicate control test chamber or failure to achieve test conditions as specified in Section 22a-430-3(j)(7)(A) of the Regulations of Connecticut State Agencies, such as maintenance of appropriate environmental controls, shall constitute an invalid test and will require immediate retesting. Failure to submit valid test results constitutes a permit violation.
- (d) Results of the toxicity tests required as part of this permit condition shall be entered on the Discharge Monitoring Report (DMR) for the month in which it was performed, using the appropriate parameter code. Additionally, complete and accurate test data, including all supporting chemical/physical measurements performed in association with the toxicity tests, as well as dose/response data shall be entered on the Aquatic Toxicity Monitoring Report form (ATMR). The ATMR shall be sent to the following address:
- Aquatic Toxicity
Connecticut Department of Environmental Protection
Water Compliance Unit
122 Washington Street
Hartford, CT 06106
- (e) If any test result indicates that the maximum daily toxicity limit for the effluent has been exceeded, a second sample of the effluent shall be collected and tested as described above and the results reported to the Commissioner within 30 days of the receipt of the first set of test results.
- (f) If any two consecutive test results or any three test results in a single year indicate that the maximum daily toxicity limit has been exceeded, the permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall submit a report for the review and approval of the Commissioner in accordance with Section 22a-430-3(j)(10)(c) of the Regulations of Connecticut State Agencies describing proposed steps to eliminate the toxic impact of the discharge on the receiving waterbody. Such a report shall include a proposed time schedule to accomplish toxicity reduction.

MM. Discharge Serial No. 007
Description: Surface Water Runoff (Discharge Code 108000n)
Receiving Stream: Niantic Bay via Settling Pond (Basin Code 2000)
Present/Future Water Quality Standard: SA/SA
Flow: Intermittent

NN. Discharge Serial No. 008

Monitoring Location: 1

Description: Unit No. 1 Non-Contaminated Floor Drains and Surface Water Runoff Including Water Washes and Clean Water Drains (Discharge Code 1080000)

Receiving Stream: Niantic Bay (Basin Code 2000)

Present/Future Water Quality Standard: SA/SA

Flow: Intermittent

- (1) The maximum concentrations specified below shall not be exceeded at any time.

Parameter	Code	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
Oil and Grease-T	70030-019	20.0 mg/l	Monthly (c)	Grab
Total Suspended Solids	00530-019	30.0 mg/l	Monthly	Grab

- (a) The permittee shall record the instantaneous flow (Code 00058-078) at the time of grab sample collection.

- (b) The report shall include a detailed explanation of any violations of the limitations specified above.

- (c) Monitoring monthly required only when oil separator discharge occurs.

00. Discharge Serial No. 009

Monitoring Location: 1

Description: Unit No. 2 Non-Contaminated Floor Drains, Fire Pump House Floor Drains, Water Washes, Clean Water Drains, and Surface Water Runoff (Discharge Code 1080000)

Receiving Stream: Long Island Sound via Quarry Cut

Present/Future Water Quality Standard: SA/SA

Flow: Intermittent

- (1) The maximum limits specified below shall not be exceeded at any time.

Parameter	Code	Maximum Instant. Limits	Minimum Frequency of Sampling	Sample Type
Oil and Grease-T	70030-019	20.0 mg/l	Monthly (c)	Grab
Total Suspended Solids	00530-019	30.0 mg/l	Monthly	Grab

- (a) The permittee shall record the instantaneous flow (Code 00058-078) at the time of grab sample collection.

(b) The report shall include a detailed explanation of any violations of the limitations specified above.

(c) Monitoring monthly required only when oil separator discharge occurs.

- PP. Discharge Serial No. 011
 Description: Surface Water Runoff (Discharge Code 108000n)
 Receiving Stream: Long Island Sound
 Present/Future Water Quality Standard: SA/SA
 Flow: Intermittent
- QQ. Discharge Serial No. 012
 Description: Surface Water Runoff Including Fire System Flush Water
 (Discharge Code 108000n)
 Receiving Stream: Long Island Sound
 Present/Future Water Quality Standard: SA/SA
 Flow: Intermittent
- RR. Discharge Serial No. 013
 Description: Surface Water Runoff (Discharge Code 108000n)
 Receiving Stream: Long Island Sound
 Present/Future Water Quality Standard: SA/SA
 Flow: Intermittent
- SS. Discharge Serial No. 014
 Description: Surface Water Runoff (Discharge Code 108000n)
 Receiving Stream: Niantic Bay
 Present/Future Water Quality Standard: SA/SA
 Flow: Intermittent
- TT. Discharge Serial No. 015
 Description: Surface Water Runoff Including Waterwashes and Clean
 Water Drains (Discharge Code 108000n)
 Receiving Stream: Niantic Bay
 Present/Future Water Quality Standard: SA/SA
 Flow: Intermittent
- UU. Discharge Serial No. 016
 Monitoring Location: 1
 Description: Unit No. 2 Non-contaminated Floor Drains, Water Washes,
 Clean Water Drains, and Surface Water Runoff
 (Discharge Code 1080000)
 Receiving Stream: Niantic Bay
 Present/Future Water Quality Standard: SA/SA
 Flow: Intermittent

(1) The maximum concentrations specified below shall not be exceeded at any time.

<u>Parameter</u>	<u>Code</u>	<u>Maximum Instant. Limits</u>	<u>Minimum Frequency of Sampling</u>	<u>Sample Type</u>
Oil and Grease-T	70030-019	20.0 mg/l	Monthly (c)	Grab
Total Suspended Solids	00530-019	30.0 mg/l	Monthly	Grab

- (a) The permittee shall record the total flow (Code 74076-007) and the number of hours of discharge (Code 81381-079) for each day of the sample collection and/or the instantaneous flow (Code 00058-078) at the time of grab sample collection.
- (b) The report shall include a detailed explanation of any violations of the limitations specified above.
- (c) Monitoring monthly required only when oil separator discharge occurs.

VV. Monitoring Site No. 01
Unit Nos. 1, 2, and 3 Intakes (Before Condensers)

<u>Parameter</u>	<u>Code</u>	<u>Minimum Frequency of Sampling</u>	<u>Sample Type</u>
Flow	74076-07	Hourly	Instantaneous
Temperature °F	00011-015	Hourly	Instantaneous
Total Copper	01042-028	Semiannual (a)	Daily Composite
Total Lead	01051-028	Semiannual (a)	Daily Composite
Total Nickel	01067-028	Semiannual (a)	Daily Composite
Total Zinc	01092-028	Semiannual (a)	Daily Composite
Ammonia - N	00610-028	Semiannual (a)	Daily Composite
Total Suspended Solids	00530-028	Semiannual (a)	Daily Composite
Surfactants	38260-028	Semiannual (a)	Daily Composite
Anionic			
Oil & Grease	70030-028	Semiannual (a)	Grab
Total			

- (a) Concurrent with April and October toxicity testing in accordance with Paragraphs 3.B.(6)(b), 3.J.(6)(b), and 3.V.(6)(b).

4. (a) On or before six months after issuance, submit for the review and approval of the Commissioner three (3) definitive (LC₅₀) analyses of Discharge Serial Number 001C-4. These tests shall be conducted using daily composite samples of the discharge collected on separate weeks. Testing shall be conducted following the toxicity testing protocol for static acute toxicity tests in "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" (EPA 600/4-85/013) with the following specifications:

- (i) Mysidopsis bahia (5 days old or less) and Cyprinodon variegatus (30 +/- 5 days old) shall be used as test organisms.
 - (ii) Synthetic or natural seawater adjusted to a salinity of 28-32 ppt shall be used as dilution water in the tests.
 - (iii) Test duration shall be 48 hours for Mysidopsis bahia and 96 hours for Cyprinodon variegatus.
 - (iv) Each sample shall be analysed for the following parameters: chromium, copper, lead, nickel, zinc, iron, magnesium, manganese, cyanide amenable and total, total oil and grease, total suspended solids, total residual chlorine, COD, surfactants and ammonia.
- (b) (i) In determining LC₅₀ values, five (5) test concentrations, in duplicate, shall be utilized.
- (ii) The LC₅₀ value shall be determined by the computational method (Binomial Distribution, Probit Analysis, Moving Average Angle, Spearman-Kärber) which yields the smallest 95% confidence interval and LC₅₀ value which is consistent with the dose-response data.
- (iii) Any test in which the survival of test organisms is less than ninety (90) percent in each replicate control test chamber or failure to achieve test conditions as specified in Section 22a-430-3(j)(7)(A) of the Regulations of Connecticut State Agencies, such as maintenance of appropriate environmental controls, shall constitute an invalid test and will require immediate retesting. Failure to submit valid test results constitutes a permit violation.
5. The permittee shall conduct or continue to conduct biological studies of the supplying and receiving waters, entrainment studies, and intake impingement monitoring. The studies shall include studies of intertidal and subtidal benthic communities, finfish communities, and entrained plankton and shall include detailed studies of lobster populations and winter flounder populations.
6. On or before July 31, 1993 and annually thereafter, submit for the review and approval of the Commissioner a detailed proposal for continuing biological studies, entrainment studies, and impingement monitoring as required by paragraph 5.
7. On or before April 30, 1993 and annually thereafter submit for the review and approval of the Commissioner a detailed report of the ongoing biological studies as required by paragraph 5 and as approved under paragraph 6.

8. On or before January 31, 1993 submit for the review and approval of the Commissioner a report on alternatives to reduce entrainment of winter flounder larvae in accordance with "Scope of Work for Cooling Water Alternatives Feasibility Study to Reduce Larval Winter Flounder Entrainment, May 1992."
9. (a) On or before February 28, 1993, submit for the review and approval of the Commissioner a scope of study for investigating the impact of this facility's macrofouling control practices on Niantic Bay. At a minimum, the scope shall include:
 - (i) A proposal to determine the area in which chlorine can be detected and the duration of the impact.
 - (ii) A proposal to determine the mixing characteristics of chlorine from the condenser cooling water discharge with the receiving water.
- (b) On or before November 30, 1993, submit for the review and approval of the Commissioner, a final report describing the results of the Impact Analysis Study conducted according to the approved scope of study.
10. On or before June 30, 1993 submit for the review and approval of the Commissioner a scope of study report to investigate minimization of the use and discharge of ethanolamine at Unit No. 2.
11. On or before June 30, 1994 submit for the review and approval of the Commissioner an engineering report on minimization of the use and discharge of ethanolamine at Unit No. 2 in accordance with Paragraph 10 above. The report shall include specific recommendations and a schedule for implementation.

This permit shall expire on December 14, 1997.

The permittee shall comply with the following sections of the Regulations of Connecticut State Agencies which are hereby incorporated into this permit:

Section 22a-430-3 General Conditions

- (a) Definitions
- (b) General
- (c) Inspection and Entry
- (d) Effect of a Permit
- (e) Duty
- (f) Proper Operation and Maintenance
- (g) Sludge Disposal
- (h) Duty to Mitigate
- (i) Facility Modifications; Notification
- (j) Monitoring, Records and Reporting Requirements
- (k) Bypass
- (l) Conditions Applicable to POTWs
- (m) Effluent Limitation Violations (Upsets)

- (n) Enforcement
- (o) Resource Conservation
- (p) Spill Prevention and Control
- (q) Instrumentation, Alarms, Flow Recorders
- (r) Equalization

22a-430-4 Procedures and Criteria


- (a) Duty to Apply
- (b) Duty to Reapply
- (c) Application Requirements
- (d) Preliminary Review
- (e) Tentative Determination
- (f) Draft Permits, Fact Sheets
- (g) Public Notice, Notice of Hearing
- (h) Public Comments
- (i) Final Determination
- (j) Public Hearings
- (k) Submission of Plans and Specifications, Approval.
- (l) Establishing Effluent Limitations and Conditions
- (m) Case by Case Determinations
- (n) Permit Issuance or Renewal
- (o) Permit Transfer
- (p) Permit Revocation, Denial or Modification
- (q) Variances
- (r) Secondary Treatment Requirements
- (s) Treatment Requirements for Metals and Cyanide
- (t) Discharges to POTWs - Prohibitions

Your attention is especially drawn to the notification requirements of subsection (i)(2), (i)(3), (j)(6), (j)(9)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) and (l)(2) of Section 22a-430-3.

This Permit requires the payment of an annual compliance determination fee as set forth in Section 22a-430-7 of the Regulations of Connecticut State Agencies.

The Commissioner reserves the right to make appropriate revisions to the permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Clean Water Act or the Connecticut General Statutes or regulations adopted thereunder, as amended. The permit as modified or renewed under this paragraph may also contain any other requirements of the Clean Water Act or Connecticut General Statutes or regulations adopted thereunder which are then applicable.

Entered as a Permit of the Commissioner on the 14th day of December, 1992.



Robert E. Moore
Deputy Commissioner

APPLICATION NO. B9-379
PERMIT ID. CT0003263
ORDER ID. WC