

**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)**

In compliance with the provisions of the Federal Clean Water Act, as amended, (33 U.S.C. ?1251 et seq.; the "CWA"),

Bridgewater Power Company

is authorized to discharge from a facility located at

**Route 3
Bridgewater, NH 03222**

to receiving water named

Pemigewasset River (Hydrologic Basin Code 01070001)

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective sixty (60) days from the date of issuance.

This permit and the authorization to discharge expire at midnight, five years from the date of issuance.

This permit supersedes the permit issued on May 21, 1990.

This permit consists of 12 pages in Part I including effluent limitations, monitoring requirements, etc.; Attachment A, Freshwater Acute Toxicity Testing Procedure and Protocol; Attachment B, Stormwater Pollution Prevention Plan Requirements; and 35 pages in Part II including General Conditions and Definitions.

Signed this 15th day of September, 2000

/Signature on File/
Linda M. Murphy, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency
EPA-New England
Boston, Massachusetts

PART I.A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Except as specified in Paragraphs 1. through 3. herein, the permittee shall not discharge to the Pemigewasset River a final effluent to which it has added any pollutants.
 - a. The term "Regional Administrator" means the Regional Administrator of Region I of the U.S. Environmental Protection Agency and the term "Commissioner" means the Commissioner of the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) or their respective designee. The term "ACT" means the Clean Water Act.
 - b. The discharges shall not cause a violation of the water quality standards of the receiving water and shall not jeopardize any designated uses of that receiving water.
 - c. This permit shall be modified, revoked or reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304 (b)(2), and 307 (a)(2) of the Act, if the effluent standard or limitations so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitations in this permit; or
 - (2) controls any pollutant not limited by this permit.
 - d. The discharge shall be adequately treated to ensure that the surface water remains free from pollutants in concentrations or combinations that settle to form harmful deposits, float as foam, debris, scum or other visible pollutants. It shall be adequately treated to insure that the surface waters remain free from pollutants which produce odor, color, taste or turbidity in the receiving waters which is not naturally occurring and would render it unsuitable for its designated uses.
 - e. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.
 - f. The thermal plumes from the station shall: (a) not block zones of fish passage, (b) not interfere with spawning of indigenous populations, (c) not change the balanced indigenous population of the receiving water,

- and (d) have minimal contact with surrounding shorelines.
- g. The effluent shall not contain materials in concentrations or in combinations which are hazardous or toxic to aquatic life or which would impair the uses designated by the classification of the receiving waters.
- h. There will be no discharge as a result of chemical cleaning or washing of condensers, air preheaters, or other types of process equipment.
- i. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe (See 40 Code of Federal Regulations [CFR] Section 122.42):
- (1) That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (a) one hundred micrograms per liter (100 ug/L);
 - (b) Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (c) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with CFR 122.21(g)(7) ; or
 - (d) Any other notification level established by the Director in accordance with 40 CFR 122.44(f) and New Hampshire regulations.
 - (2) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (a) Five hundred micrograms per liter (500 ug/L);

- (b) One milligram per liter (1 mg/L) for antimony;
 - (c) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21 (g)(7); or
 - (d) Any other notification level established by the Director in accordance with 40 CFR 122.44(f) and New Hampshire regulations.
- (3) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.
- j. Either chlorine or bromine may be used as a biocide. No other biocide shall be used without explicit written approval from the Regional Administrator and the Commissioner. The term chlorination includes bromination, if bromine is used as a biocide. For this permit, Total Residual Oxidants (TRO) is synonymous with Total Residual Chlorine (TRC). **As per this facility's written "Response to Comment" from EPA-New England dated September 15, 2000, continuous chlorination is allowed as long as there is no continuous discharge of water from the cooling pond to the receiving water. However, once the facility commences continuous discharge of cooling water to the receiving water, the chlorination cycle shall revert immediately to one of "not exceeding two hours in any one day for any one unit and simultaneous multi-unit chlorination is not allowed unless in conformance with Part F. Special Condition, Chlorine/Bromine Usage".**
 - k. Wood chips, sawdust, waste ash, and other wood related debris shall not enter the Pemigewasset River from any runoff treatment channel. All these materials shall be prevented from entering catch basins that drain water from these treatment channels to storm water outfalls. These treatment channels shall be inspected at least **QUARTERLY** for compliance with "no wood related materials present" and, if necessary, cleaned. All "debris removed from treatment channels" shall be disposed of according to applicable State and Federal regulations.

EXPLANATION OF SUPERSCRIPTS TO PART I.A.1 on pages 5 and 6:

- (1) Maximum flow rate will occur during spray pond pumpout for maintenance, and monitoring shall be conducted at this time for all parameters listed Part I.A.2.a. on page 5.
- (2) The effluent flow shall be continuously measured and recorded using a flow meter and totalizer.
- (3) Oil and Grease shall be tested using EPA Method 1664, Revision A. This method was newly approved by EPA on May 14, 1999, and became effective on June 14, 1999, for inclusion in 40 CFR Part 136.
- (4) Total Residual Oxidants shall be tested using Amperometric Titration. The EPA approved method is found in Standard Methods for the Examination of Water and Wastewater, 18th or subsequent Edition(s) as approved in 40 CFR Part 136, Method 4500-Cl D or U.S. E.P.A. Manual of Methods of Analysis of Water and Wastes, Method 330.1, or ASTM No. D1253-86(92).
- (5) LC50 (Lethal Concentration 50 Percent) is the concentration of wastewater (effluent) causing mortality to 50 percent (%) of the test organisms. The "50 % or greater limit" is defined as a sample which is composed of 50 % or greater effluent, the remainder being dilution water (See A.2.a. on Page 5 of Part 1 and **Attachment A** of Part 1). The limit is considered to be a maximum daily limit.
- (6) The permittee shall conduct 48-Hour Static Acute Whole Effluent Toxicity (WET) test on effluent samples using two species, Daphnid (Ceriodaphnia dubia) and Fathead Minnow (Pimephales promelas) following the protocol in **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol dated December 1995). Toxicity test samples shall be collected and tests completed during the calendar quarters ending June 30th and September 30th each year. Toxicity test results are to be submitted by the 15th day of the month following the end of the quarter sampled. Acute toxicity testing shall begin the first full calendar quarter after the effective date of the permit.
- (7) This permit shall be modified, or alternatively, revoked and reissued to incorporate additional toxicity testing requirements, including chemical specific limits, if the results of the toxicity tests indicate the discharge causes an exceedance of any State water quality criterion. Results from these toxicity tests are considered "New Information" and the permit may be modified as provided in 40 CFR Section 122.62(a)(2).

- (8) A-NOEC (Acute-No Observed Effect Concentration) is defined as the **highest** concentration of toxicant or effluent to which organisms are exposed in a life-cycle or partial life-cycle test which causes no adverse effects (in this case, death) at a specific time of observation as determined from hypothesis testing where the test results (again, death) exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, report the **lowest** concentration where there is no observable effect. See **ATTACHMENT A (VII. TOXICITY TEST DATA ANALYSIS)** on page A-8 for additional clarification.
- (9) For each WET test the permittee shall report on the appropriate Discharge Monitoring Report (DMR), the concentrations of the Ammonia Nitrogen as Nitrogen, Hardness, and Total Recoverable Aluminum, Cadmium, Chromium, Copper, Lead, Nickel and Zinc found in the 100 percent effluent sample. All these aforementioned chemical parameters shall be determined to at least the Minimum Quantification Level (MLs) shown in Attachment A on page A-7, or as amended. Also the permittee should note that all chemical parameter results must still be reported in the appropriate toxicity report. The permittee may use results from the WET test's chemical analysis for Total Recoverable Copper, Lead and Zinc in partial fulfillment of these limited/monitored constituents.

B. WATER TREATMENT CHEMICALS

The permittee can only use those Water Treatment Chemicals (WTCs) approved by the Electric Power Research Institute for use in cooling water systems and only at concentrations not to exceed commonly accepted standard industrial practices. For each calendar half year, the permittee must submit to EPA and NHDES-WD with the DMRs for June and December due July 15th and January 15th, respectively: (1) a complete list of all chemicals and their associated concentrations along with the time periods of actual usage during that calendar half year in any cooling water application whose discharge is to the cooling pond lagoon; and (2) all appropriate documentation from the Electric Power Research Institute's manuals and documents to show that all WTCs used during the previous six (6) months were at or below the commonly accepted standard industrial practices. For example, results for the 1st calendar half year (January through June) shall be submitted with the June DMR which is due to EPA and the NHDES-WD by July 15th.

In addition, every July the permittee must collect a representative sample of water from the cooling pond and perform on that sample a: (1) priority pollutant scan for all the pollutants shown in 40 CFR Part 423, Appendix A; and (2) 48-Hour static acute WET test using two species, Daphnid (Ceriodaphnia dubia) and the Fathead Minnow (Pimephales promelas) following the protocol shown in **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol dated December 1995). Results from all the above tests shall be submitted with the DMRs for August due to EPA and the NHDES-WD by September 15th. For each priority pollutant, their respective concentrations shall be reported, and for each species of the WET test, the A-NOEC and LC50 values shall be reported.

C. STORM WATER

Bridgewater Power Company may opt out of storm water requirements by certifying "no exposure" using Form 3510-11, 40 CFR Section 122.26(g) as published in Federal Register, Vol. 64., No. 235, Wednesday, December 8, 1999. However, before the storm water conditions in this permit, which are defined as the Storm Water Pollution Prevention Plan (SWPPP) in Part I.C.1 (page 10) and the Effluent Limitations and Monitoring Requirements in Part I.A.3. (page 6) for Outfalls 001C and 002A, can be eliminated, the permittee must submit the following written documentation to EPA-New England by certified mail: (1) completed Form 3510-11 to EPA-New England's satisfaction; and (2) a letter from the NHDES-WD containing an original signature confirming "no exposure". Until written notice is received by certified mail from EPA-New England indicating agreement with the "no exposure" assertion and including termination of all conditions in Parts I.C.1. and I.A.3., which at issuance were deemed necessary due to the presences of "existing exposure", the permittee is required to meet all conditions in Parts I.C.1. and I.A.3.

However, for facilities that do not opt out, Section 402(p) of the Clean Water Act requires that EPA issue permits for storm water discharges associated with industrial activity. Bridgewater Power Company discharges storm water associated with industrial activity within the meaning of 40 CFR Section 122.26(b)(14)(vii), and is therefore required to have a storm water permit. The storm water discharges from these activities must satisfy the Best Conventional Technology (BCT) and Best Available Technology (BAT) standards and must comply with any more stringent water quality standards if BCT and BAT are inadequate.

I. Storm Water Pollution Prevention Plan (SWPPP)

The permittee shall develop and implement a SWPPP. The SWPPP for this facility shall be prepared, and except as provided elsewhere in this permit, shall provide for compliance with the terms of the permit and the plan, no later than 90 days following the effective date of this permit. The SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from this facility. In addition, the SWPPP shall describe and ensure the implementation of practices to reduce the pollutants in storm water discharges associated with industrial activity and to assure compliance with the terms and conditions of this permit. **Attachment B** provides the minimum requirements that must be addressed in the SWPPP for this facility.

D. **MONITORING AND REPORTING**

Monitoring results shall be summarized for each calendar month and reported on separate Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the 15th day of the month following the completed reporting period.

Signed copies of all DMRs and all other reports required herein, shall be submitted to the Director at the following address:

U.S. Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114-8127

Duplicate signed copies of all reports required herein shall be submitted to the State at:

New Hampshire Department of Environmental Services
Water Division
Wastewater Engineering Bureau
6 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03302-0095

E. STATE PERMIT CONDITIONS

1. The permittee shall comply with the following conditions which are included as State Certification requirements.
 - a. The pH range of 6.5-8.0 S.U. must be achieved in the final effluent unless the permittee can demonstrate to NHDES-WD: (1) that the range should be widened due to naturally occurring conditions in the receiving water, or (2) that the naturally occurring source water pH is unaltered by the permittee's operations. The scope of any demonstration project must receive prior approval from NHDES-WD. In no case, shall the above procedure result in pH limits less restrictive than applicable federal effluent limitation guideline(s) published in the CFRs.
2. This NPDES Discharge Permit is issued by the U.S. Environmental Protection Agency under Federal and State law. Upon final issuance by the EPA, the NHDES-WD may adopt this permit, including all terms and conditions, as a State permit pursuant to RSA 485-A:13.

Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of the Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation.

F. SPECIAL CONDITIONS

1. pH Limit Adjustment

The permittee may submit a written request to the EPA requesting a change in the permitted pH limit range to be not less restrictive than 6.0 to 9.0 S.U. found in the applicable National Effluent Limitation Guideline (Steam Electric Power Generating Point Source Category in 40 CFR Section 423) for this facility's process wastewater flow. The permittee's written request must include the State's letter containing an original signature (no copies). The State's letter shall state that the permittee has demonstrated to the State's satisfaction that as long as discharges to the receiving water from a specific outfall are within a specific numeric pH range the naturally occurring receiving water pH will be unaltered. That

letter must specify for each outfall the associated numeric pH limit range. Until written notice is received by certified mail from the EPA indicating the pH limit range has been changed, the permittee is required to meet the permitted pH limit range in the respective permit.

II. Whole Effluent Toxicity Test Frequency Adjustment

The permittee may submit a written request to the EPA-New England requesting a reduction in the frequency (to not less than once per year) of required toxicity testing, after completion of a minimum of the most recent four (4) successive toxicity tests of effluent, all of which must be valid tests and must demonstrate compliance with the permit limits for whole effluent toxicity. Until written notice is received by certified mail from the EPA indicating that the Whole Effluent Testing requirement has been changed, the permittee is required to continue testing at the frequency specified in the respective permit.

III. Chlorine/Bromine Usage

The permittee may submit a written request to the EPA-New England requesting an increase in the maximum time of chlorination per day including the right to chlorinate multiple units simultaneously. As elsewhere in this permit, chlorination and bromination are used interchangeably. The written request shall include a study demonstrating to EPA-New England's satisfaction that the chlorination time period needed to properly operate this facility's boiler/cooling units exceeds the maximum allowed "two hours in any one day for any one unit". Until the permittee receives written notice by certified mail from EPA-New England indicating that the maximum chlorination period, which "...shall not exceed two hours in any one day for any one unit including the right to chlorinate multiple units simultaneously" have been changed, the permittee is required to abide by the dosing period as specified in Part I.A.1.j.

G. REOPENER CLAUSE

This permit may be modified to incorporate additional limits and/or monitoring requirements on Outfalls 001A, 001C, 002A and on water in the actual lagoon itself if results from the priority pollutant scan indicates any of the priority pollutants in the discharge causes or has reasonable potential to cause or contribute to an excursion of the State's Surface Water Quality Regulations.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Continued)

2. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge from outfall serial number 001A (process): boiler blowdown; cooling tower blowdown; pump gland cooling; mechanical equipment cooling; condenser cooling; and generator cooling waters to the Pemigewasset River. Such discharges shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the monitoring requirements specified below shall be taken at a location that provides a representative analysis of the effluent.

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>	
	<u>Average Monthly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow; MGD	0.072	0.5 ¹	Continuous	Recorder ²
Total Suspended Solids; mg/L	30	100	1/Week	Grab
Temperature; °F	---	95	3/Week	Grab
Oil and Grease ³ ; mg/L	15.0	20.0	1/Week	Grab
Total Recoverable Copper; mg/L	0.52	0.52	2/Month	Grab
Total Recoverable Lead; mg/L	0.21	0.79	2/Month	Grab
Total Recoverable Zinc; mg/L	Report	Report	2/Month	Grab
Total Iron; mg/L	---	1.0	2/Month	Grab
Total Residual Oxidants ⁴ ; mg/L	---	0.2	1/Day	Grab
pH Range; Standard Units (S.U.)	6.5 to 8.0	(See I.D.1.a.)	Continuous	Grab
Whole Effluent Toxicity				
LC50 ^{5,6,7} ; Percent	---	\$50	2/Year	Grab
A-NOEC ^{6,7,8} ; Percent	---	Report	2/Year	Grab
Ammonia Nitrogen as Nitrogen ⁹ ; mg/L	---	Report	2/Year	Grab
Hardness ⁹ ; mg/L	---	Report	2/Year	Grab
Total Recoverable Aluminum ⁹ ; mg/L	---	Report	2/Year	Grab
Total Recoverable Cadmium ⁹ ; mg/L	---	Report	2/Year	Grab
Total Recoverable Chromium ⁹ ; mg/L	---	Report	2/Year	Grab

Total Recoverable Copper ⁹ ; mg/L	---	Report	2/Year	Grab
Total Recoverable Lead ⁹ ; mg/L	---	Report	2/Year	Grab
Total Recoverable Nickel ⁹ ; mg/L	---	Report	2/Year	Grab
Total Recoverable Zinc ⁹ ; mg/L	---	Report	2/Year	Grab

See pages 7 and 8 for explanation of superscripts.

PART I

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Permit No.
NH0022021

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Continued)

3. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge from outfall serial numbers 001C and 002A: storm water runoff to the Pemigewasset River. Such discharges shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the monitoring requirements specified below shall be taken at a location that provides a representative analysis of the effluent.

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>
	<u>Average</u>	<u>Maximum</u>	
	<u>Monthly</u>	<u>Daily</u>	<u>Measurement Sample</u>
			<u>Frequency</u> <u>Type</u>
Flow; MGD	---	Report	1/Quarter Estimate
Oil and Grease ³ ; mg/L	---	15	1/Quarter Grab *
Total Suspended Solids; mg/L	---	Report	1/Quarter Grab *
Chemical Oxygen Demand; mg/L	---	Report	1/Quarter Grab *
pH Range; S.U.	See 3.b. below		1/Quarter Grab *

* At each outfall, grab samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. The grab samples shall be taken during the first thirty minutes of the discharge. If collection of the grab sample(s) during the first thirty minutes is impracticable, grab sample(s) can be taken as soon after that as possible, and the permittee shall submit with the monitoring report a description of why the collection of the grab sample(s) during the first thirty minutes was impracticable. When a permittee is unable to collect grab sample(s) due to adverse climatic conditions, the permittee must submit in lieu of sampling data a description of why the grab sample(s) could not be collected, including available documentation of the

event. Adverse weather conditions which may prohibit the collection of sample(s) include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of sample(s) impracticable (drought, extended frozen conditions, specified storm event did not occur during sampling period, etc.). A "no discharge" report shall be submitted for those quarters in which there is no discharge.

This permit shall be modified, or alternatively, revoked and reissued to incorporate additional testing requirements, including chemical specific limits, if results of the storm water analyses indicate the discharge causes an exceedance of any State water quality criterion. Results from these storm water analyses are considered "New Information" and the permit may be modified as provided in 40 CFR Section 122.62(a)(2).

- b. The pH shall not be less than 6.5 S.U. nor greater than 8.0 S.U. unless due to naturally occurring conditions in the rainfall. The pH shall be within 0.5 S.U. of the rainfall when the pH is outside the above range. Rainfall pH shall be monitored when the discharge is monitored and shall be reported on the appropriate Discharge Monitoring Report.
 - c. The effluent shall not contain any visible oil sheen, foam and/or floating solids at any time.
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