

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Ch. 21, §§26-53),

Indeck - Pepperell Power Associates, Inc.

is authorized to discharge from a facility located at

**29 Mill Street
Pepperell, MA 01463**

to receiving water named

Nashua River (Nashua Basin, MA81-07)

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

This permit will become effective on the first day of the calendar month following sixty days after signature.

This permit and the authorization to discharge expire at midnight, five years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on September 26, 1995.

This permit consists of 13 pages in Part I including effluent limitations, monitoring requirements, Attachments A & B, and 35 pages in Part II including General Conditions and Definitions.

Signed this 8th day of September, 2006

/s/ SIGNATURE ON FILE

Linda M. Murphy, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

Glenn Haas, Director
Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from internal **outfall serial number 001A: cooling tower blowdown**. Effluent samples shall be taken after the last point of treatment before discharge and prior to mixing with any other waste stream or water. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	AVERAGE MONTHLY	MAXIMUM DAILY	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow Rate (gallons per day)	25,000	60,000	Continuous	Recorder
Total Residual Chlorine ¹ (mg/l)	0.1 ¹	0.1 ¹	1/week	Grab
Total Recoverable Chromium (mg/l)	0.2 ²	0.2 ²	1/month	Grab or Calculation
Total Recoverable Zinc (mg/l)	1.0 ²	1.0 ²	1/month	Grab or Calculation
126 Priority Pollutants	0 ^{2,3}	0 ^{2,3}	Yearly	Grab or Calculation

¹The Total Residual Chlorine (TRC) concentration from outfall 001A, Cooling Tower Blowdown, shall not exceed an instantaneous maximum concentration of 0.1 mg/l and an average concentration of 0.1 mg/l. Samples shall be taken when chlorine is in use. The definition of "Total Residual Chlorine" is found in 40 CFR § 423.11(l) and is synonymous with the term Total Residual Oxidants. TRC shall be measured using one of the approved methods found at 40 CFR Part 136, Table 1B. Chlorine may not be discharged from the cooling tower for more than two hours in any one day.

² The permittee may demonstrate through engineering calculations that none of the priority pollutants (including zinc and/or chromium) are present in detectable amounts in the final discharge in accordance with 423.13(d)(3). This information shall be submitted to the EPA and MA with every December Discharge Monitoring Report (DMR). Upon receipt of written approval from EPA and/or the MassDEP, the permittee is not required to sample nor monitor for zinc and/or chromium. If the 1/month zinc and/or chromium monitoring and sampling requirement is discontinued because of satisfactory engineering

calculations, the permittee shall write "9" (monitoring is conditional/not required this monitoring period) in the appropriate box on the DMR each month. Dilution for such engineering calculations shall be based on lowest projected cooling tower blowdown flow prior to co-mingling with other effluent streams. The chemical concentrations used in such engineering calculations shall be based on anticipated or manufacturer's suggested feed rates.

³No detectable amounts.

2. During the period beginning on the effective date of the permit and lasting through expiration, the permittee is authorized to discharge from internal **outfall serial number 001B**, building sump discharge from the following sources: floor drains, miscellaneous equipment, water softening backwash, pack boiler blowdown, heat recovery boiler blowdown, and stormwater from the outside diked area. Effluent samples shall be taken after the building sump and prior to mixing with any other waste stream or water in the cooling tower. Such discharge shall be limited and monitored as specified below.

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Flow (gallon per day)	9750	35,000	Continuous	Recorder
Total Suspended Solids (mg/l)	30.0	100.0	1/Week	Grab
Oil and Grease (mg/l)	15	20	1/Week	Grab

3. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from internal **outfall serial number 001C: demineralizer regeneration & pH neutralization**. Effluent samples shall be taken prior to mixing with any other waste stream or water. Such discharge shall be limited and monitored as specified below.

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Flow (gallons per day)	8750	70,000	Continuous	Recorder
Total Suspended Solids (mg/l)	30	100	1/Week ¹	Grab
Oil & Grease (mg/l)	15	20	1/Week ¹	Grab

¹Samples shall be taken when demineralizer regeneration & pH neutralization wastewater is being discharged.

4. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from internal **outfall serial number 001D: metal cleaning wastes (includes heat recovery boiler and pack boiler wastes)** into the building sump tank. Effluent samples shall be prior to mixing with any other waste stream or water. Such discharge shall be limited and monitored as specified below.

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Flow Rate (gallons per day)	-----	Report	Continuous	Recorder
Total Copper (mg/l)	1.0	1.0	1 discharge day ¹ per month	Grab
Total Iron (mg/l)	1.0	1.0	1 discharge day ¹ per month	Grab

¹For copper and iron limitations, a discharge day shall mean any day in which metal cleaning wastes (MCW) are entering the building sump. No other waste shall enter the building sump during metal cleaning waste operations (no dilution of the metal cleaning waste). The permittee shall report the volume of MCW generated. MCW means wastewater resulting from cleaning with or without chemical compounds.

5. During the period beginning on the effective date of the permit and lasting through expiration, the permittee is authorized to discharge from **outfall serial number 001: combined discharge**, including outfalls 001A through 001D, to the Nashua River. Such discharge shall be limited and monitored by the permittee as specified below.

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Flow Rate (gallons per day)	Report	130,000 ¹	Continuous	Recorder
Temperature (°F)	Report ²	Report ²	Continuous	Recorder
Temperature, upstream (°F)	-----	Report ³	1/week	Grab
Temperature, downstream (°F)	-----	83 ³	1/week	Grab
Delta T, (°F)	-----	5 ⁴	1/week	Calculation
pH Range, standard units	≥ 6.5 to ≤ 8.3 ⁵		1/Day	report range
Whole Effluent Toxicity ⁶ Testing	LC ₅₀ ≥ 100 %		1/Year	24- hour composite
Total Recoverable Cadmium, mg/l	-----	Report ⁶	1/Year	24- hour composite
Total Recoverable Chromium, mg/l	-----	Report ⁶	1/Year	24- hour composite
Total Recoverable Lead, mg/l	-----	Report ⁶	1/Year	24- hour composite
Total Recoverable Copper, mg/l	-----	Report ⁶	1/Year	24- hour composite
Total Recoverable Zinc, mg/l	-----	Report ⁶	1/Year	24- hour composite
Total Recoverable Nickel, mg/l	-----	Report ⁶	1/Year	24- hour composite
Total Recoverable Aluminum, mg/l	-----	Report ⁶	1/Year	24- hour composite

¹The effluent flow shall be continuously measured and recorded using a flow meter and totalizer.

²The maximum daily and average monthly values shall be reported. Temperature monitoring shall be collected at the end of pipe, prior to discharge to the Nashua River. Also see **Part B** for more on temperature requirements.

³The upstream temperature shall be measure at a point approximately 20 feet above the discharge. The downstream temperature shall be measured approximately 20 feet downstream of the discharge. The temperature shall be measured approximately 1 foot below the surface. Each weekly temperature measurements shall be taken at the same location(s) and at the same time of day as the previous week's sample, to the maximum extent possible. The permittee shall report the time, date, and location of the sample with the monthly DMR.

⁴The Delta T shall be calculated as the difference between the upstream temperature measurement and the downstream temperature measurement.

⁵pH shall not change more than 0.5 units outside the background value.

⁶See Part I.A.7 and I.A.8 of this permit for WET testing requirements.

6. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP. All samples shall be tested using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136.
7. The permittee shall conduct acute toxicity tests once per year. The permittee shall test the daphnid (Ceriodaphnia dubia). A 24-Hour composite sample is the required "sample type" for WET testing. The permittee shall include with the WET testing results to EPA, a list of which internal outfalls were discharging during the WET testing sampling. Toxicity test samples shall be collected during the month of June. If the facility does not discharge during June, then the facility shall sample during the next month of operation. The test results shall be submitted by the last day of the month following the completion of the test.

After submitting a **minimum** of two consecutive sets of WET test results, both of which demonstrate compliance with the WET permit limit, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from the EPA that the WET testing requirement has been changed. The permittee shall use the procedures and protocols contained in **Attachment A**, Toxicity Test Procedure and Protocol, of this permit when conducting the WET testing.

If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or

unreliable, the permittee shall follow procedures outlined in **Attachment A Section IV., DILUTION WATER** in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required in **Attachment A**, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called "Guidance Document") which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. If this Guidance document is revoked, the permittee shall revert to obtaining approval as outlined in **Attachment A**.

The "Guidance Document" has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA's Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this "Guidance Document" will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment A**.

The permittee will report the toxicity test metals analysis results in the appropriate month's DMR.

8. The LC₅₀ is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of $\geq 100\%$ effluent shall cause no more than a 50% mortality rate. See Attachment A.
9. The minimum level (ML) for total residual chlorine is defined as 20 $\mu\text{g/l}$. This value is the minimum level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 CL-E and G, or USEPA Manual of Methods of Analysis of Water and Waste, Method 330.5. One of these methods must be used to determine total residual chlorine. For effluent limitations less than 20 $\mu\text{g/l}$, compliance/non-compliance will be determined based on the ML. Sample results of 20 $\mu\text{g/l}$ or less shall be reported as zero on the discharge monitoring report.
10. The term "Regional Administrator" means the Regional Administrator of Region I of the U.S. Environmental Protection Agency (EPA) and the term "Commissioner" means the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) or their designees.
11. Except as specified in Parts I.A.1 through I.A.5 herein, the permittee shall not discharge to the Nashua River a final effluent to which it has added any pollutants.
12. Discharges shall not impair any Class B use of the Nashua River and shall not violate any applicable narrative criteria from the state water quality standards,
13. 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 minimum contact with surrounding shorelines.

14. There shall be no discharge of polychlorinated biphenyl (PCB) compounds such as those commonly used for transformer fluid. The permittee shall dispose of all known PCB equipment, articles, and wastes in accordance with 40 CFR 761. The permittee shall certify that this disposal has been accomplished.
15. Pollutants which are not limited by the permit, but have been specifically disclosed in the last permit application, may be discharged at the frequency and level disclosed in the application, provided that such discharge does not violate sections 307 and 311 of the Act or applicable water quality standards.
16. Any discharge shall not cause visible discoloration or turbidity in the receiving waters which would impair the uses designated by the classification of the receiving waters.
17. The effluent shall not contain metals and/or 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.
18. The chemicals listed in Attachment B may be used as a biocide. No other biocide shall be used without explicit approval from EPA and the Commissioner.
19. The permittee may propose to conduct feasibility studies involving new chemicals not currently approved for water discharge. The permittee shall gain approval from the Regional Administrator and the Commissioner before any such studies take place. A report summarizing the results of any such studies shall be submitted to the Regional Administrator and the Commissioner regarding discharge frequency, concentration, and the impact, if any, on the indigenous populations of the receiving water. The Regional Administrator or the Commissioner may require Whole Effluent Toxicity testing as part of feasibility studies.
20. In the event of fish mortalities in the discharge or in the thermal plume, the permittee will begin removing all dead fish from the receiving waters, or from the shoreline within four hours after the fish mortalities have been observed. Also, the permittee shall suspend all unit biocide operations immediately after collection of receiving water samples for analysis, while also complying with all the monitoring and reporting requirements in this permit.
21. All live fish, shellfish, and other aquatic organisms collected or trapped on the intake screens shall be returned to their natural habitat with minimal stress. All other material shall be removed from the intake screens and disposed of in accordance with all existing Federal, State, and/or Local laws and regulations that apply to waste disposal. Such material shall not be returned to the receiving waters.

22. Any change in the location, design or capacity of the present intake structures shall be approved by the Regional Administrator and the Commissioner.
23. Discharges to the Nashua River shall be adequately treated to insure 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. They shall be adequately treated to insure that the surface waters remain free from pollutants which produce odor, color, taste, or turbidity in the receiving water which is not naturally occurring and would render it unsuitable for its designated uses.
24. 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 Clean Water Act (CWA), if the effluent standard or limitation so issued or approved:
 - (a) contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or
 - (b) controls any pollutant not limited by this permit
25. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Regional Administrator as soon as they know or have reason to believe (40 CFR§122.42):
 - a. 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:"
 - (1) One hundred micrograms per liter (100 ug/l);
 - (2) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
 - (3) Any other notification level established by the Regional Administrator in accordance with 40 CFR §122.44(f) and Massachusetts regulations.
 - b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"

- (1) Five hundred micrograms per liter (500 ug/l);
 - (2) One milligram per liter (1 mg/l) for antimony;
 - (3) 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
 - (4) Any other notification level established by the Regional Administrator in accordance with 40 CFR §122.44(f) and Massachusetts regulations.
26. The permittee shall update and maintain its Storm Water Pollution Prevention Plan (SWPPP) for this facility, unless it has obtained coverage under a storm water general permit. The plan shall be updated within 90 days of the effective date of this permit. The SWPPP shall identify potential sources of pollution (including storm water from the fuel storage area) which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity at the facility and mitigate these where possible. The permittee may use the EPA's Storm Water Multi-Sector General Permit for Industrial Activities, Federal Register vol. 60, no.189, Friday September 29, 1995, pgs 51197-51203 as guidance.
- The SWPPP shall also include an evaluation of the possibility of segregating and removing storm water flows from the Station's internal process flows. All storm water related to industrial activity shall not be discharged to the Nashua River without prior approval of the EPA/MassDEP. The only sources of storm water allowed to discharge to the Nashua River are the diked areas with storm drains that convey flow to the main building sump. Storm water collected from these sources shall be discharged from outfall serial number 001D only.
27. The discharge shall not cause Nashua River in-stream temperature to exceed 83 degrees Fahrenheit (warm water fishery) outside the mixing zone, nor shall the temperature rise resulting in-stream from artificial origin exceed 5.0 degrees Fahrenheit outside the mixing zone. The mixing zone is defined as that area included within a 20 foot radius of the effluent discharge pipe diffusers. Exceedances will constitute a violation of this permit unless the permittee demonstrates that the exceedances are due to naturally occurring conditions. Natural seasonal and daily variations in temperature at the edge of the mixing zone shall be maintained. There shall be no changes from background conditions that would impair any use (i.e. habitat for fish, aquatic life, wildlife, and, primary and secondary contact recreation).
28. There shall be no discharge of floating solids, oil sheens or visible foam attributable to station operation in other than trace amounts.
29. Oil/Water Separator Flow Control

The permittee shall control the water flow rate through the O/W separator up to the maximum design flow rate. Within 180 days of the effective date of the permit, the permittee shall install continuous recording flow meters and manually control the flows through the separator. Alternatively, within 180 days of the effective date of the permit, the permittee may request that the Regional Administrator accept substitution of an alternate method of control which may include the following:

- a. By installing a flow reduction or constriction devices to prevent the flow through the separator from ever exceeding the maximum design flow rate or,
- b. By demonstrating to EPA and MassDEP that the operational procedures are sufficiently clear and rigid that the operators will not exceed the maximum design flow rate(s) by concurrently draining more diked and/or un-diked areas than prescribed in the procedures or,
- c. By any other means of control that prevents the flow(s) from exceeding the maximum design flow rate.

The permittee shall conduct periodic compliance evaluations of the methods of control for regulating water flow rate and treating/managing storm water through the O/W separator, as described in the Storm Water Pollution Prevention Plan requirements.

B. EFFLUENT TEMPERATURE MONITORING

Within **ninety (90) days** of the effective date of this permit, the permittee shall install thermistor(s) (temperature sensors) within the existing outlet of the final outfall pipe located in the Nashua River. A data logging device shall be provided with the thermistor to allow for the development of a continuous effluent temperature data record to meet the temperature monitoring requirements of Outfall 001. The sensors shall be located in the outfall pipe, as close to the discharge pipe diffusers as possible, while ensuring minimal effect from receiving waters.

C. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate discharge monitoring report (DMR) forms postmarked no later than the 15th day of the month following the effective date of the permit.

Indeck -Pepperell Power Associates, Inc. may assert a business confidentiality claim with respect to part or all of the information submitted to EPA in the manner described at 40 CFR Part 2.203(b). Information covered by such a claim will be disclosed by EPA only to the extent, and by means, of the procedures set forth in 40 CFR Part 2, Subpart B. If no such claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA without further notice to Indeck - Pepperell Power Associates, Inc. Effluent information

shall not be regarded as confidential.

Signed and dated originals of the DMRs, and all other reports required herein, shall be submitted to the Regional Administrator at the following addresses:

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

The permittee shall also submit copies of DMRs and all other reports required herein, except toxicity testing, to the Commonwealth at:

Massachusetts Department of Environmental Protection
Central Regional Office - Bureau of Waste Prevention
627 Main Street
Worcester, Massachusetts 01608

In addition, copies of all Discharge Monitoring Reports and all other notifications and reports required by this permit shall be submitted to the following address:

Massachusetts Department of Environmental Protection
Division Of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

In addition all required reports and Discharge Related Mortality and Unusual Impingement Event notifications and reports required by this permit shall also be submitted to:

John H. Nagle (Phone Number: 617-918-1054)
U.S. Environmental Protection Agency
One Congress Street, Suite 1100 (CMA)
Boston, MA 02114-2023

D. STATE PERMIT CONDITIONS

1. This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection pursuant to M.G.L. Chap. 21, §43.
2. 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 this permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of Federal law, this permit shall remain in full force and effect under State law as a permit issued by the Commonwealth of Massachusetts.

E. REOPENER CLAUSE

1. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable standard or limitation promulgated or approved under sections 301(b)(2)(C) and (d), 304 (b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - b. Controls any pollutants not limited in the permit.
2. This permit may be modified to incorporate necessary limits for any of the 126 priority pollutants should the results of any monitoring as required in Part I.a.7 “126 Priority Pollutants” indicate potential violation(s) of the water-quality standards for any of these pollutants. Results of the 126 priority pollutant reporting will be considered “New Information” and the permit can be modified as provided in 40 CFR Section 122.62(a)(2).