



**STATE OF CONNECTICUT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF AIR MANAGEMENT**

**NEW SOURCE REVIEW PERMIT  
TO CONSTRUCT AND OPERATE  
A STATIONARY SOURCE**

Issued pursuant to Title 22a of the Connecticut General Statutes (CGS) and Section 22a-174-3a of the Regulations of Connecticut State Agencies (RCSA).

Owner/Operator:	Milford Power Company LLC
Address:	55 Shelland Street, Milford, CT 06460
Equipment Location:	55 Shelland Street, Milford, CT 06460
Equipment Description:	Marley Cooling Tower

Town-Permit Numbers:	105-0087
Premises Numbers:	0251
Original Permit Issue Date:	July 1, 2004
Modification Issue Date:	March 10, 2010
Expiration Date:	None

/s/ Anne Gobin for  
Amey Marrella  
Commissioner

March 10, 2010  
Date

## PERMIT FOR PROCESS EQUIPMENT

### STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF AIR MANAGEMENT

This permit specifies necessary terms and conditions for the operation of this equipment to comply with state and federal air quality standards. The Permittee shall at all times comply with the terms and conditions stated herein.

#### PART I. DESIGN SPECIFICATIONS

##### A. General Description

Marley cooling tower used to reduce the temperature of Milford Power Project cooling water by intimate air-water contact. The cooling tower is made up of ten (10) cells. Mist eliminators are used to prevent drift.

##### B. Equipment Design Specifications

Maximum Averaged TDS in a 24-hour period: 44,000 ppmw  
Water Circulating Flow Rates:

# Pumps Operating	Flow rate (gpm)
1	32,500
2	90,000
3	115,000
4	132,200

##### C. Control Equipment Design Specifications

Type: Mist Eliminator  
Pollutant Controlled: PM  
% Drift: 0.0005 vol %  
Collection Efficiency: 100%

##### D. Stack Parameters

Maximum Gas Flow Rate:  $1 \times 10^7$  acfm  
Minimum Distance to Property Line: 78 ft  
Minimum Stack Height: 50

#### PART II. OPERATING REQUIREMENTS

##### A. Operating Parameter Limitations

Type of Water Used: Housatonic River  
Typical Total Dissolved Solids (TDS) range: 18,760 - 44,000 ppmw  
Maximum Circulating Flow Rate: 132,200 gpm

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**PART II. OPERATING REQUIREMENTS, continued**

**B. O & M Requirements**

1. The Permittee shall inspect the suction screen, distribution system and nozzles weekly for clogging.
2. The Permittee shall inspect the drift eliminators and the fill monthly for clogging.
3. The Permittee shall clean the drift eliminators, fill, suction screen, distribution system and nozzles as required by the manufacturer.
4. The Permittee shall operate and maintain the cooling tower and all associated equipment as recommended by the manufacturer and in accordance with the facility's Operations and Maintenance plan.

**PART III. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS**

**A. Monitoring**

1. The Permittee shall monitor the TDS concentration continuously using a conductivity meter that converts conductivity to TDS concentration in parts per million (ppm).
2. The conductivity meter shall be calibrated once annually or as recommended by the manufacturer.

**B. Record Keeping**

1. The Permittee shall keep daily records of the number of pumps in use. From the number of pumps in use the flow rate will be determined.
2. For the purposes of calculating emissions, TDS shall be calculated using the daily average TDS concentration. The Permittee shall keep this record of daily average TDS concentration.
3. The Permittee shall keep daily, monthly, and annual records of PM and PM-10 emissions. Annual emissions for each pollutant shall be determined by adding the current month's emissions to that of the previous eleven months. These calculations shall be made on a monthly basis.
4. The Permittee shall keep maintenance records as detailed in the facility's Operations and Maintenance Plan.

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**PART III. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS, cont.**

- 5. The Permittee shall keep records on premises indicating continual compliance with all above conditions at all times and shall make them available upon request by the Commissioner for the duration of this permit, or for the previous five (5) years, whichever is less.

**PART IV. OPERATION AND MAINTENANCE REQUIREMENTS**

- A. The Permittee shall operate and maintain this equipment in accordance with the manufacturer's specifications and written recommendations.
- B. The Permittee shall properly operate the control equipment at all times that this equipment is in operation and emitting air pollutants.

**PART V. ALLOWABLE EMISSION LIMITS**

The Permittee shall not cause or allow this equipment to exceed the emission limits stated herein at any time.

**A. Criteria Pollutants**

<u>Pollutant</u>	<u>lb/hr</u>	<u>tpy</u>
PM	10.9	22.34
PM <sub>10</sub>	5.8	14.89

Demonstration of compliance with the above emission limits shall be met with the following

The overall particulate emission rate ( $E_{\text{particulate}}$ ) shall be calculated using the following generalized AP-42 equation.

$$E_{\text{particulate}}(\text{lb/hr}) = \text{Water Circulation Flow Rate}(\text{gpm}) \times 0.0005(\% \text{Drift}) / 100 \times \text{TDS}(\text{ppmw}) / 1,000,000 \times 8.34(\text{lb/gal, water density}) \times 60(\text{min/hr}) \quad [1]$$

The pollutant specific emission rate shall be calculated by multiplying the overall particulate rate by 75% for TSP and 40% for PM<sub>10</sub>. These percentages were calculated from *Calculating Realistic PM<sub>10</sub> Emissions from Cooling Towers*, Reisman and Frisbie, 2001, and are the percentage of emissions emitted as TSP and PM<sub>10</sub> based on a drift rate of 0.0005% and Marley drift eliminator the droplet size distribution data.

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**PART V. ALLOWABLE EMISSION LIMITS, continued**

PM=  $E_{\text{particulate}} \times 75\%$  [2]

PM<sub>10</sub>=  $E_{\text{particulate}} \times 40\%$  [3]

The commissioner may require other means (e.g. stack testing) to demonstrate compliance with the above emission limits, as allowed by state or federal statute, law or regulation.

**B. Hazardous Air Pollutants (HAPs) - (State Only Requirement)**

The Permittee shall not exceed the emission limits stated herein at any time.

<u>Pollutant</u>	<u>MASC (<math>\mu\text{g}/\text{m}^3</math>)</u>
Chlorine	64.6

**PART VI. STACK EMISSION TEST REQUIREMENTS** (Applicable if -X- Checked)

Stack emissions testing shall not be required at this time.

**PART VII. SPECIAL REQUIREMENTS**

**A. STATE ONLY REQUIREMENT:** The Permittee shall not cause or permit the emission of any substance or combination of substances which creates or contributes to an odor beyond the property boundary of the premises that constitutes a nuisance as set forth in RCSA Section 22a-174-23.

**B. STATE ONLY REQUIREMENT:** The Permittee shall operate this source and all accompanying equipment at all times in a manner so as not to violate or significantly contribute to the violation of any applicable state noise control regulations, as set forth in RCSA Sections 22a-69-1 through 22a-69-7.4.

**PART VIII. ADDITIONAL TERMS AND CONDITIONS**

**A.** This permit does not relieve the Permittee of the responsibility to conduct, maintain and operate the regulated activity in compliance with all applicable requirements of any federal, municipal or other state agency. Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.

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**PART VIII. ADDITIONAL TERMS AND CONDITIONS, continued**

- B.** Any representative of the DEP may enter the Permittee's site in accordance with constitutional limitations at all reasonable times without prior notice, for the purposes of inspecting, monitoring and enforcing the terms and conditions of this permit and applicable state law.
- C.** This permit may be revoked, suspended, modified or transferred in accordance with applicable law.
- D.** This permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material, nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby. This permit shall neither create nor affect any rights of persons of municipalities who are not parties to this permit.
- E.** Any document, including any notice, which is required to be submitted to the commissioner under this permit shall be signed by a duly authorized representative of the Permittee and by the person who is responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under Section 22a-175 of the Connecticut General Statutes, under Section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute."
- F.** Nothing in this permit shall affect the commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the Permittee by the commissioner.

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**PART VIII. ADDITIONAL TERMS AND CONDITIONS, continued**

- G.** Within 15 days of the date the Permittee becomes aware of a change in any information submitted to the commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the commissioner.
- H.** The date of submission to the commissioner of any document required by this permit shall be the date such document is received by the commissioner. The date of any notice by the commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.
- I.** Any document required to be submitted to the commissioner under this permit shall, unless otherwise specified in writing by the commissioner, be directed to: Office of Director; Engineering & Enforcement Division; Bureau of Air Management; Department of Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.

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