



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WESTERN REGIONAL OFFICE

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December 31, 2007

John S. Murray
Station Manager
Mt. Tom Generating Company, LLC
P.O. Box 2010
West Springfield, MA 01090-2010

RE: **CONDITIONAL APPROVAL**
Application for: BWP AQ 02
Non-Major Comprehensive Plan Application
310 CMR 7.02 Plan Approval and Emission Limitations
Transmittal No.: W152455
Application No.: 1-P-07-049

AT: Mt. Tom Station
Smith's Ferry
Holyoke, MA 01090

Dear Mr. Murray:

The Department of Environmental Protection, Bureau of Waste Prevention (the "Department"), has reviewed the referenced Non-Major Comprehensive Plan Application, submitted by Mt. Tom Generating Company, LLC ("Mt. Tom"), for proposed modifications to the Mt. Tom Station ("Facility") located at Smith's Ferry, Holyoke, Massachusetts. Proposed modifications to the Facility include the addition of a Turbosorp emissions control system ("Turbosorp") to the existing 1480 MMBtu/hr coal fired electric utility generating unit. The application bears the seal and signature of Mark Hultman, P.E. No. 36576.

The Department on June 7, 2002 issued to Mt. Tom an Emission Control Plan (ECP) Final Approval defining how the Facility would comply with Regulation 310 CMR 7.29 Emission Standards for Power Plants. The ECP Final Approval and Regulation 310 CMR 7.29 required Mt. Tom to comply with emission limits for several pollutants, including sulfur dioxide (SO₂) and mercury. The installation of the Turbosorp system is proposed to enable the facility to comply with the upcoming emission rates for SO₂ and Hg.

The Department is of the opinion that the Application for the Turbosorp system is in conformance with the Massachusetts Air Pollution Control Regulations and hereby issues this Conditional Approval for the proposed alterations of the Facility, subject to the conditions and provisions stated herein.

The application was submitted in accordance with Regulation 310 CMR 7.02 as contained in 310 CMR 7.00 Air Pollution Control Regulations, adopted by the Department pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A- O and Chapter 21C, Sections 4 and 6. The Department's review has been limited to compliance with applicable Air Pollution Control Regulations and does not relieve you of the obligation to comply with all other permitting requirements contained in other regulations or statutes.

This Conditional Approval will allow for commencement of proposed alterations of the Facility, including installation of all equipment and tie-ins for the Turbosorp system, and provides information on the project description, emission control systems, facility limits, continuous emission monitors, record keeping, reporting and testing requirements. Should you have any questions concerning this matter, please feel free to contact me at (413) 755-2115.

Sincerely,

*This final document copy is being provided to you electronically by the
Department of Environmental Protection. A signed copy of this document
is on file at the DEP office listed on the letterhead.*

Marc Simpson
Acting Permit Chief
Bureau of Waste Prevention
Western Region

Enclosures

Electronic cc's

Yi Tian - DEP Boston
Roberta Baker, Peter Czapienski - DEP Western Region
James Belsky, DEP/BWP-NERO
Ed Braczyk, DEP/BWP-NERO
John Winkler, DEP/BWP-SERO
Thomas Cusson, DEP/BWP-CERO

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I. FACILITY DESCRIPTION

A. Site Description

The Facility consists of a pulverized coal-fired unit (the “boiler”) with a design heat input capacity of 1,480 MMBtu/hr and a maximum electric generating capacity of 147 megawatts (MW) net. The site is bordered by Route 5 to the west and the Connecticut River to the east.

B. Project Description

The Facility is subject to Regulation 310 CMR 7.29 Emission Standards for Power Plants promulgated on May 11, 2001. The regulation imposes, among other things, facility-wide annual and calendar month emission limits for SO₂ in units of pounds per megawatt hour (lb/MWh) and removal standards for mercury. On November 2, 2007, MassDEP received an application from Mt. Tom for the proposed installation/operation of a Turbosorp system.

Mt. Tom proposes to install a Babcock Power Environmental (or equivalent) Turbosorp dry scrubber system utilizing hydrated lime, powdered activated carbon (PAC), brominated powdered activated carbon (B-PAC), and/or sodium tetrasulfide to control emissions of SO₂ and mercury from the boiler. The boiler is a 16-burner, dry bottom, wall-fired, pulverized coal Riley Stoker unit that combusts coal as its primary fuel and No. 2 distillate oil for ignition. It is equipped with modified low-NOx burners. The low-NOx burners work in conjunction with the Selective Catalytic Reduction system (SCR) to meet the NOx emissions requirements contained in Regulation 310 CMR 7.29.

The Turbosorp system will be installed downstream from the electrostatic precipitator and upstream from the existing facility stack. Gases that exit the precipitator first enter the “Turbosorp” tower. Within the tower, the flue gas is cooled with water, then a fluidized bed of hydrated lime, PAC, B-PAC and/or sodium tetrasulfide will react with the flue gas. The sorbent is captured along with the particulate matter in the baghouse portion of the system. The majority of the material in the baghouse is collected at the bottom and re-injected into the tower to ensure a high utilization of the sorbent material. The particulate matter that is not re-injected into the tower is piped into a storage vessel for later disposal.

The sorbent utilized will depend on the characteristics of the coal and the system performance. The most likely sorbents used will be the hydrated lime (for acid gas and SO₂ control) and PAC (for mercury control). The B-PAC is a mercury sorbent designed for the removal of vapor phase mercury from low temperature (<500°F) flue gases. B-PAC reacts with the vapor phase mercury and permanently binds with the mercury. Sodium tetrasulfide will be used only if additional mercury removal is required. Sodium tetrasulfide removes both the elemental and ionic forms of gaseous mercury to form mercury sulfide (HgS), which is a stable solid captured in the baghouse. The selection of sorbents and injection rates will be determined during the startup and shakedown period for the equipment and will be included in the final approval for the equipment.

C. Equipment Description

The Turbosorp Circulating Dry Scrubber design and construction shall be as follows:

- Manufacturer: Babcock Power Environmental, Inc
- Total process flow: 730,000 acfm
- Operating temperature of tower: 160 to 300 °F
- Possible sorbents used: hydrated lime, PAC, B-PAC, sodium tetrasulfide
- Design removal efficiency: 95% for mercury, 95% for SO₂
- Sorbent feed rate: 420 lbs/hr PAC, 8,200 lbs/hr lime (these rates will be adjusted and final sorbent feed rates will be determined during equipment startup and testing)
- Pressure drop across tower: 6 to 8 in H₂O

The Turbosorp System baghouse design and construction shall be as follows:

- Manufacturer: Babcock Power Environmental, Inc.
- Model No.: Dustex (12) 6134-17-29
- Total rated flow: 730,000 acfm
- Pressure drop across baghouse: 6 to 8 in H₂O
- Maximum inlet temperature: 400 °F
- Bag material: Ryton (or equivalent)
- Air/cloth ratio: 3.2:1
- Cleaning method: pulse jet (timer integrated with DP transmitters)

II. EMISSIONS

A. Background

Emissions to the ambient air from the boiler include the following criteria air contaminants: Particulate Matter (PM), Particulate Matter 10 microns and smaller (PM₁₀), SO₂, carbon monoxide (CO), nitrogen oxides (NO_x), Lead (Pb), mercury and volatile organic compounds (VOC). With the addition of the Turbosorp system, the mercury and SO₂ emission rates to the ambient air will decrease with no expected increase in any other pollutants.

B. Emission Limits

This approval establishes emission limits for Mercury and SO₂ based on this equipment installation and compliance with the regulation at 310 CMR 7.29 and the ECP issued to the facility on June 7, 2002. The boiler shall not exceed the emission limitations as specified in Table 1:

Table 1		
Emission	lb/GWh¹	lbs/MWh²
Mercury	0.0025	
SO ₂		3.00

Note:

- 1 – Pounds of mercury per gigawatt-hour net electrical output, rolling 12-month average. Based on a generating capacity of 147 MW, this would result in 3.22 lbs/yr of mercury emissions.
- 2 – Pounds of SO₂ per megawatt-hour net electrical output, rolling 12-month period, recalculated monthly. Based on a generating capacity of 147 MW, this would result in 1932 tons/yr of SO₂ emissions.

III. NEW SOURCE PERFORMANCE STANDARDS

The boiler is considered a “fossil-fuel fired steam generating unit” and an “electric utility steam generating unit” since it burns fossil fuels at a rate greater than 250 MMBtu/hr and more than one third of the facility’s net electrical output is sold to a utility. The New Source Performance Standards (NSPS) for fossil-fuel fired steam generators and electric utility steam generating units, Title 40 Part 60 Subpart D and Subpart Da, respectively, of the Code of Federal Regulations, are not applicable to the boiler since the boiler installation occurred in 1960.

Construction and operation of the Turbosorp system will not constitute a “modification” since the system’s primary function is the reduction of air pollutants. Emission reductions of SO₂ and mercury will be realized with the Turbosorp system in operation. In addition, construction of the Turbosorp system is not, by definition, “reconstruction”, since the fixed capital cost of the Turbosorp system does not exceed 50% of the fixed capital cost that would be required to construct a comparable new facility.

IV. SPECIAL CONDITIONS

1. Mt. Tom shall submit Standard Operating and Maintenance Procedures (SOMP) for the new equipment to the Department no later than 60 days after commencement of operation of the proposed facility. Thereafter, Mt. Tom shall submit updated versions of the SOMP to the Department no later than 30 days prior to the occurrence of a significant change. The Department must approve in writing any significant changes to the SOMP prior to the SOMP becoming effective.
2. Mt. Tom shall, within 60 days after the submittal to the Department of the compliance test report, propose a methodology or direct/parametric monitoring for determining the proper sorbent injection rate and proper system operation.

V. MONITORING REQUIREMENTS

1. A record keeping system for the proposed facility shall be established and maintained on site by the Applicant. All such records shall be maintained up-to-date such that year-to-date information is readily available for Department examination upon request. The record keeping log/system, including any other “credible evidence”, shall be kept on-site for a minimum of five (5) years. Record keeping shall, at a minimum, include:
 - a) Compliance records sufficient to demonstrate that emissions from the facility have not exceeded emission limits contained in this **CONDITIONAL APPROVAL**. Such records shall include, but are not limited to, fuel usage rate, sorbent usage rates, emissions test results, emission control equipment parameters (baghouse temp, differential pressure), monitoring equipment data and reports.
 - b) Maintenance: A record of routine maintenance activities performed on the proposed control equipment and monitoring equipment including, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.

- c) Malfunctions: A record of all malfunctions on the proposed emission control and monitoring equipment including, at a minimum: the date and time the malfunction occurred; a description of the malfunction and the corrective action taken; the date and time corrective actions were initiated; and the date and time corrective actions were completed and the equipment was returned to compliance.
2. All current monitoring and recording requirements remain in effect and are not altered herein.

VI. RECORD KEEPING REQUIREMENTS

1. Mt. Tom shall maintain on-site for five (5) years all records of output from all continuous monitors for flue gas emissions and fuel consumption, and shall make these records available to the Department upon request.
2. Mt. Tom shall maintain a log to record problems, upsets or failures associated with the proposed emission control systems.

VII. REPORTING REQUIREMENTS

1. All notifications and reporting required by this Conditional Approval shall be made to the attention of:

Department of Environmental Protection
Bureau of Waste Prevention
436 Dwight Street
Springfield, Massachusetts 01103
ATTN: Chief, Compliance and Enforcement Section
Telephone: (413) 755-2131
Fax: (413) 784-1149
2. Mt. Tom shall notify the Department by telephone or fax as soon as possible but no later than three (3) business days after the occurrence of any upsets or malfunctions to the proposed facility equipment, air pollution control equipment, or monitoring equipment which results in an excess emission to the ambient air and/or a condition of air pollution.
3. Mt. Tom shall notify the Department in writing within the quarterly status reports when each activity listed below occurs or will be scheduled to occur:
 - a) Major construction milestones for the installation of the Turbosorp System;
 - b) The date the boiler attains the maximum production rate after the Turbosorp System installation; and
 - c) The date the boiler is available for commercial operation (as defined by ISO New England, Inc.) with the Turbosorp System in continuous operation.

VIII. TESTING REQUIREMENTS

1. Mt. Tom shall ensure that the proposed facility is constructed to accommodate the emissions (compliance) testing requirements contained herein. All emissions testing shall be conducted in accordance with the Department's "Guidelines for Source Emissions Testing" and in accordance with the Environmental Protection Agency reference test methods as specified in 40 CFR Part 60, Appendix A.
2. Mt. Tom shall conduct initial emission compliance tests no later than 180 days after the date specified in Section VII.3.d. The emission compliance test program shall comply with the Department of Environmental Protection Guidelines for Source Emission Testing.
4. Mt. Tom must obtain written Department approval of an emissions test protocol. The protocol shall include a detailed description of sampling port locations, sampling equipment, sampling and analytical procedures, and operating conditions for any such emissions testing. It must be submitted to the Department at least 30 days prior to commencement of testing of the facility.
5. Mt. Tom shall ensure that a final emissions test results report is submitted to the Department within 60 days of completion of the emissions testing program.
6. Mt. Tom shall conduct initial compliance tests to demonstrate that the boiler is in compliance with the emission limits for SO₂ and mercury and to demonstrate the control efficiency of the Turbosorp system. Testing shall be conducted at approximately 100% of rated base load and will include as-fired coal analysis to determine sulfur and mercury content of the fuel. Mt. Tom shall also conduct testing for total particulate and compare it to historic test results to demonstrate that there will be no increase in particulate emissions from this project.
7. In accordance with 310 CMR 7.04(4)(a), Mt. Tom shall have the boiler inspected and maintained in accordance with the manufacturer's recommendations and tested for efficient operation at least once in each calendar year. The results of said inspection, maintenance and testing and the date upon which it was performed shall be recorded and posted conspicuously on or near the proposed equipment.
8. In accordance with 310 CMR 7.13 the Department may require additional emissions testing of the proposed facility at any time to ascertain compliance with the Department's Regulations or any proviso(s) contained in this Conditional Approval.

IX. GENERAL REQUIREMENTS

1. Mt. Tom shall properly train all personnel to operate the proposed facility and control equipment in accordance with vendor specifications.
2. All requirements of this Conditional Approval that apply to Mt. Tom shall apply to all subsequent owners and/or operators of the facility.

3. Mt. Tom shall maintain the standard operating and maintenance procedures for all air pollution control equipment in a convenient location (e.g., control room/technical library) and make them readily available to all employees.
4. Mt. Tom shall comply with all provisions of 310 CMR 6.00-8.00 that are applicable to this facility.
5. This Conditional Approval may be suspended, modified, or revoked by the Department if, at any time, the Department determines that the facility is violating any condition or part of the Approval.
6. This Conditional Approval does not negate the responsibility of Mt. Tom to comply with this or any other applicable federal, state, or local regulations now or in the future.
7. The facility shall be operated in a manner to prevent the occurrence of sound, dust or odor conditions which cause or contribute to a condition of air pollution as defined in Regulations 310 CMR 7.01 and 7.09.
8. Should asbestos remediation/removal be required as a result of this Conditional Approval, such asbestos remediation/removal shall be done in accordance with Regulation 310 CMR 7.15 and 310 CMR 4.00.
9. Any proposed increase in emissions above the limits contained in this Conditional Approval must first be approved in writing by the Department pursuant to 310 CMR 7.02. In addition, any emissions increase may subject the facility to additional regulatory requirements.
10. No person shall cause, suffer, allow, or permit the removal, alteration or shall otherwise render inoperative any air pollution control equipment or equipment used to monitor emissions which has been installed as a requirement of 310 CMR 7.00, other than for reasonable maintenance periods or unexpected and unavoidable failure of the equipment, provided that the Department has been notified of such failure, or in accordance with specific written approval of the Department.
11. The proposed facility shall be constructed and operated in strict accordance with this Conditional Approval. Should there be any inconsistencies between Mt. Tom's Non-Major Comprehensive Plan Application (Transmittal No. W152455) and this Conditional Approval, this Conditional Approval shall govern.
12. All provisions contained in existing plan approvals concerning the subject facility issued by the Department to Mt. Tom and/or previous owners, remain in effect other than those specifically altered herein.
13. Mt. Tom shall ensure that sufficient spare bags are maintained onsite for the Turbosorp system at all times such that bags are able to be immediately replaced any worn or damaged bags due to deterioration resulting from the routine operation of the fabric collector.

X. CONSTRUCTION REQUIREMENTS

During the construction phase of the proposed modifications at the facility, Mt. Tom shall ensure that facility personnel take all reasonable precautions (noted below) to minimize air pollution episodes (dust, odor, noise):

1. Facility personnel shall exercise care in operating any noise generating equipment (including mobile power equipment, power tools, etc.) at all times to minimize noise.
2. Construction vehicles transporting loose aggregate to or from the facility shall be covered and shall use leak tight containers.
3. The construction open storage areas, piles of soil, loose aggregate, etc. shall be covered or watered down as necessary to minimize dust emissions.
4. Any spillage of loose aggregate and dirt deposits on any public roadway, leading to or from the proposed facility shall be removed by the next business day or sooner, if necessary.
5. On site unpaved roadways/excavation areas subject to vehicular traffic shall be watered down as necessary or treated with the application of a dust suppressant to minimize the generation of dust.

XI. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

The Department has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Environmental Affairs, for air quality control purposes, was not required prior to this action by the Department. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and Regulation 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions" which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report at a later time.

XII. APPEAL PROCESS

This approval is an action of the Department. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts which are the grounds for the request, and the relief sought. Additionally, the request must state why the plan approval is not consistent with the applicable laws and regulations. The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, Massachusetts 02211

The request will be dismissed if the filing fee is not paid unless the appellant is exempt or granted a waiver as described below.

The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

The Department may waive the adjudicatory hearing filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Please be advised that this approval does not negate the responsibility of the Mt. Tom Generating Company to comply with this or any other applicable federal, state, or local regulations now or in the future. Nor does this approval imply compliance with any other applicable federal, state, or local regulation now or in the future.