COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

PLAN APPROVAL

Permit No. 48-328-004
Owner Lower Mount Bethel Energy, LLC
Address 11350 Random Hills Road
          Suite 400
          Fairfax, VA 22030
Attention: Mr. David J. Shultz
           Director of Projects

Source & Combining Cycle Power Plant
Air
Cleaning
Device

Location Depue Ferry Road
Lower Mount Bethel Township
Northampton County

In accordance with provisions of the Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, and with Chapter 127 of the rules and regulations of the Department of Environmental Protection, the Department on October 23, 2004 approved plans for the construction of the above indicated air contamination source(s).

This PLAN APPROVAL expires October 31, 2006.

The Plan Approval is subject to the following conditions:

(1) The sources are to be constructed in accordance with the plans submitted with the application (as approved herein).

(SEE ATTACHED)

Notify the person noted below when the installation is completed so that the source(s) can be inspected for issuance of an OPERATING PERMIT.

NOTE: William E. Nuver
      Bureau of Air Quality
      4530 Bath Pike
      Bethlehem, PA 18017

Thomas A. DiLazaro
Program Manager
Air Quality Program

cc: Abatement and Compliance
    Wilkes-Barre Regional Office
    Bethlehem District Office
(2) This Plan Approval is issued for the construction of a combined cycle turbine electric generating plant including the following:

(a) Two natural gas-fired combustion turbines (Siemens-Westinghouse Model 501F) each rated at 185 MW (gross) and controlled by dry, low NOx, lean burn combustion, selective catalytic reduction (SCR) and oxidation catalyst.

(b) 10 cell cooling tower with drift eliminators.

(c) Two supplementary fired heat recovery steam generators with duct burners.

(3) This approval to construct shall become invalid if:

(a) Construction [as defined in 40 CFR 52.21 (b)(8)] has not commenced within 18 months of the issue date of this approval; or

(b) Construction is discontinued for a period of 18 months or more.

(4) The combustion turbines and duct burners shall be fired solely by natural gas.

(5) The permittee shall construct, operate and maintain both combustion turbines, duct burners, cooling tower and air pollution control equipment in accordance with manufacturers’ specifications as well as good air pollution control practices.

(6) The permittee shall limit the total amount of natural gas combusted in the duct burners to 899 million cubic feet, or less, in a 12-month rolling period.

(7) The duct burners are subject to Subpart Db of the Standards of Performance for New Stationary Sources and shall comply with all applicable requirements of this Subpart. 40 CFR §60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both EPA and the Department. The EPA copies shall be forwarded to:

Director
Air, Toxics and Radiation Division
US EPA, Region III
1650 Arch Street
Philadelphia, PA 19103-2029
(8) The combustion turbines are subject to Subpart GG of the Standards of Performance for New Stationary Sources and shall comply with all applicable requirements of this Subpart. 40 CFR §60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both EPA and the Department. The EPA copies shall be forwarded to:

Director
Air, Toxics and Radiation Division
US EPA, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

(9) The combustion turbines are subject to the Title IV Acid Rain Program of the Clean Air Act Amendments of 1990 and shall comply with all applicable provisions of that Title, to include the following:

40 CFR Part 72   Permits Regulation
40 CFR Part 73   Sulfur Dioxide Allowance System
40 CFR Part 75   Continuous Emission Monitoring
40 CFR Part 77   Excess Emissions

(10) The combustion turbines are subject to the NO\textsubscript{X} Budget Program established in 25 PA Code Sections 123.102 – 123.120 and shall comply with all applicable requirements.

§123.112. Source operating permit provisions requirements.

The permittee shall comply with the requirements 25 Pa. Code §§123.101 – 123.120 (relating to NO\textsubscript{X} allowance requirements).

§123.102. Source NO\textsubscript{X} allowance requirements and NO\textsubscript{X} allowance control period.

(a) For each NO\textsubscript{X} affected source identified in this permit, the permittee shall hold a quantity of NO\textsubscript{X} allowances meeting the requirements of §123.110(a) (relating to source compliance requirements) in the source's current year NATS account by December 31 of each calendar year. The NO\textsubscript{X} allowances shall be equal to or greater than the total NO\textsubscript{X} emitted from the source during that year's NO\textsubscript{X} allowance control period.

(b) The initial NO\textsubscript{X} allowance control period begins on May 1, 2000.
Monitoring Requirements

§123.108. Source emissions monitoring requirements.

(a) The NOx emissions from each NOx affected source at this facility shall be monitored as specified in 25 Pa.Code §123.108 and in accordance with the procedures contained in the document titled, "Guidance for Implementation of Emission Monitoring Requirements for the NOx Budget Program."

(b) As referenced in §123.108(2), the permittee shall submit to the Department and the NOx Budget Administrator a monitoring plan in accordance with the procedures outlined in the document titled, "Guidance for Implementation of Emission Monitoring Requirements for the NOx Budget Program."

(c) New and existing unit emission monitoring systems, as required and specified by 25 Pa.Code §123.108(4) and the NOx affected source’s monitoring plan approved by the Department, shall be installed and operational. The installed emissions monitoring systems shall have met all of the certification testing requirements in accordance with the procedures and deadlines specified in the document titled, "Guidance for Implementation of Emission Monitoring Requirements for the NOx Budget Program" in a manner consistent with Chapter 139 (relating to sampling and testing).

(d) Sources subject to 40 CFR Part 75 shall demonstrate compliance with §123.108 by using a certified Part 75 monitoring system.

(e) During a period when valid data is not being recorded by devices approved for use to demonstrate compliance with the NOx Allowance Requirement subchapter, the permittee shall replace missing or invalid data with representative default data in accordance with 40 CFR Part 75 (relating to continuous emission monitoring) and the document titled, “Guidance for Implementation of Emission Monitoring Requirements for the NOx Budget Program.” For non-Part 75 sources that have Department approved NOx CEMS reporting of NOx emissions in pounds of NOx per hour as required under 25 Pa.Code § 139.101, the data shall be reported to the NETS. The permittee shall continue to report submissions as required under 25 Pa.Code Chapter 139 to the Department.
Testing Requirements
§123.108. Source emissions monitoring requirements.

Monitoring systems for each NOx affected source shall comply with the initial performance testing and periodic calibration, accuracy testing and quality assurance/quality control testing as specified in the document titled "Guidance for Implementation of Emission Monitoring Requirements for the NOx Budget Program."

Notwithstanding this permit condition, Non-Part 75 Sources which have Department approved NOx CEMS reporting in units of pounds of NOx per hour as required under 25 Pa. Code §139.101 (relating to general requirements) shall complete the periodic self-audits listed in the quality assurance section of §139.102(3) (relating to references) at least annually and no sooner than 6 months following the previous periodic self-audit. If practicable, the audit shall be conducted between April 1 and May 31.

Reporting Requirements
§123.109. Source emissions reporting requirements.

(a) The authorized account representative shall submit to the NOx Budget Administrator, electronically, emissions and operations information for each calendar quarter of each year in accordance with the document titled. "Guidance for Implementation of Emission Monitoring Requirements for the NOx Budget Program." The emissions and operations information shall be submitted in a format which meets the requirements of EPA's Electronic Data Reporting convention.

Compliance Requirements
§123.110. Source compliance requirements.

(a) Each year from November 1 through December 31, inclusive, the authorized account representative shall request the NOx Budget Administrator to deduct, consistent with §123.107 (relating to NOx allowance transfer procedures) a designated amount of NOx allowances by serial number, from the NOx affected source's compliance account in an amount equivalent to the NOx emitted from the NOx affected source during that year's NOx allowance control period. The designated NOx allowances shall be used in accordance with the requirements specified in 25 Pa. Code §123.110.
(b) For each NOx allowance control period, the authorized account representative for the NOx affected source shall submit an annual compliance certification to the Department no later than the NOx allowance transfer deadline (December 31) of each year.

(c) At a minimum, the compliance certification shall contain the information and statements required under 25 Pa. Code §§ 123.110(e)(1)-(6).

**Recordkeeping Requirements**

§123.113. Source recordkeeping requirements.

The owner or operator shall maintain for each NOx affected source at this facility, the measurements, data, reports and other information required by 25 Pa. Code §§123.101—123.120. The records shall be maintained for 5 years or any other period consistent with the terms of the NOx affected source's operating permit.

(11)§ 123.121 NOx Allowance Program Transition.

The emission limitations and monitoring requirements established in §§ 123.101-123.120 (relating to NOx allowance requirements) are replaced by the requirements in Chapter 145 beginning with the May 1, 2003, control period. If a source has failed to demonstrate compliance with § 123.111 (relating to failure to meet source compliance requirements), the provisions in § 145.54(d) (relating to compliance) shall be used to withhold NOx allowances in calendar year 2003 and beyond. If no NOx allowances are provided to the source under § 145.52 (relating to NOx allowance allocations), the source will be obligated to acquire and retire a number of NOx allowances as specified in § 145.54.

§§ 145.1-145.90 NOx Budget Trading Program Incorporation.

The emission limitations, monitoring and all other requirements of the NOx Budget Trading Program established in 25 Pa. Code §§ 145.1-145.90 are hereby incorporated by reference.
§ 145.10 Authorization and responsibilities of the NOx authorized account representative.

(a) [§ 145.10(a)] Except as provided under § 145.11 (relating to alternate NOx authorized account representative), each NOx budget source, including all NOx budget units at the source, shall have one, and only one, NOx authorized account representative, with regard to all matters under the NOx Budget Trading Program concerning the source or any NOx budget unit at the source.

(b) [§ 145.10(c)] Each submission under the NOx Budget Trading Program shall be submitted, signed and certified by the NOx authorized account representative for each NOx budget source on behalf of which the submission is made.

§ 145.6(a) Standard requirements – Monitoring requirements.

(a) The owners and operators and the NOx authorized account representative of each NOx budget source and each NOx budget unit at the source shall comply with the monitoring requirements of §§ 145.70-145.76 (relating to recordkeeping and recording requirements) by May 1, 2002.

(b) The emissions measurements recorded and reported in accordance with §§ 145.70-145.76 shall be used to determine compliance by the unit with the NOx budget emissions limitation under Subsection 145.6(c).

§ 145.6(b) Standard requirements – NOx Requirements.

(a) The owners and operators of each NOx budget source and each NOx budget unit at the source shall hold NOx allowances available for compliance deductions under § 145.54 (relating to compliance), as of the NOx allowance transfer deadline, in the unit’s compliance account and the source’s overdraft account in an amount not less than the total NOx emissions for the control period from the unit, as determined in accordance with §§ 145.70-145.76 (relating to recordkeeping and reporting requirements) plus any amount necessary to account for actual heat input under § 145.42(e) (relating to NOx allowance allocation) for the control period or to account for excess emissions for a prior control period under § 145.54(d) or to account for withdrawal from the NOx budget trading program, or a change in regulatory status, of a NOx budget opt-in unit under §§ 145.86 and 145.87 (relating to withdrawal from NOx Budget Trading Program; and opt-in source change in regulatory status).
(b) An NOx budget unit shall be subject to the requirements under Paragraph (a) starting on May 1, 2003, or the date on which the unit commences operation, whichever is later.

§ 145.6(c) Standard requirements – Excess Emissions.

The owners and operators of a NOx budget unit that has excess emissions in any control period shall do the following:
   Surrender the NOx allowances required for deduction under § 145.54(d)(1) (relating to compliance).

§ 145.6(d) Standard requirements – Recordkeeping and reporting requirements.

Unless otherwise provided, the owners and operators of the NOx budget source and each NOx budget unit at the source shall maintain at a central location and provided upon request by the Department or the NOx budget administrator all documents required under § 145.6(d) for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of the 5 years, in writing by the Department or the Administrator.

§ 145.74(b) Standard requirements – Monitoring plans.

(a) The owner or operator of a unit subject to an acid rain emissions limitation shall comply with requirements of 40 CFR 75.62 (relating to monitoring plan), except that the monitoring plan shall also include all of the information required by 40 CFR Part 75, Subpart H.

(b) The owner or operator of a unit that is not subject to an acid rain emissions limitation shall comply with requirements of 40 CFR 75.62, except that the monitoring plan is only required to include the information required by 40 CFR Part 75, Subpart H.

§ 145.74(c) Certification applications.

The NOx authorized account representative shall submit an application to the Department within 45 days after completing all initial certification or recertification tests required under § 145.71 (relating to initial certification and recertification procedures) including the information required under 40 CFR Part 75, Subpart H.
§ 145.74 Source emissions reporting requirements.

(a) The authorized account representative shall submit to the Department and to the NOx Budget Administrator a quarterly emissions report in accordance with the requirements of § 145.74(d).

(b) The NOx authorized account representative shall submit to the Department and the NOx Budget Administrator a compliance certification in support of each quarterly report required under § 145.74(d) based on reasonable inquiry of those persons with primary responsibility for ensuring that all of the units' emissions are correctly and fully monitored.

§ 145.30 Compliance certification report.

For each control period in which one or more NOx budget units at a source are subject to the NOx budget emissions limitation, the NOx authorized account representative of the source shall submit to the Department and the NOx Budget Administrator by November 30 of that year, a compliance certification report for the source covering all of the units.

§ 145.90 Emission reduction credit provisions.

NOx budget units may create, transfer and use emission reduction credits ("ERCs") in accordance with Chapter 127 and § 145.90. ERCs may not be used to satisfy NOx allowance requirements.

(12) Under the provisions of 25 PA Code Chapter 127, Subchapter E, New Source Review, the permittee shall secure Department-approved nitrogen oxides (NOx) Emission Reduction Credits (ERCs) in the amount of 262 tons per year and volatile organic compounds (VOCs) ERCs in the amount of 64 tons per year prior to the commencement of operation of the combustion turbines and duct burners.

(13) The permittee shall limit facility emissions of NOx to 227.8 tons during any consecutive 12-month period including emissions during start-up and shutdown of all sources.

(14) The permittee shall limit facility emissions of carbon monoxide (CO) to 525.6 tons during any consecutive 12-month period including emissions during start-up and shutdown of all sources.
(15) The permittee shall limit facility emissions of VOCs to 55.5 tons during any consecutive 12-month period including emissions during start-up and shutdown of all sources.

(16) Pursuant to the Lowest Achievable Emission Rate (LAER) provisions of 25 PA Code Section 127.205, the permittee shall limit the emissions from each combustion turbine with duct burner to the following (measured 1-hour average on a dry volume basis corrected to 15% oxygen):

(a) NO_x – 3.5 ppmvd (0.0131 pounds per million BTU)

(b) VOCs (as methane) – 3.0 ppmvd (0.0046 pounds per million BTU)

(17) Pursuant to the Best Available Control Technology (BACT) provisions of 25 PA Code Section 127.83, the permittee shall limit the emissions from each combustion turbine with duct burner to the following:

(a) Carbon monoxide (at more than 70% load) – 6 ppmvd (0.0131 pounds per million BTU), measured 1-hour average on a dry volume basis corrected to 15% oxygen.

(b) Carbon monoxide (at less than 70% load) – 19 ppmvd (0.0439 pounds per million BTU), measured 1-hour average on a dry volume basis corrected to 15% oxygen.

(c) Sulfur dioxide – 0.0027 pounds per million BTU

(d) Particulate matter (TSP/PM_{10}) – 0.0135 pounds per million BTU

(e) Sulfuric acid mist (H_2 SO_4) – 0.0008 pounds per million BTU

(18) Pursuant to the Best Available Technology (BAT) provisions of 25 PA Code Section 127.1, the permittee shall limit the emission of ammonia for each selective catalytic reduction (SCR) system exhaust to 10 ppmvd, measured dry volume corrected to 15% oxygen, under normal operation.
(19) The emissions in Conditions 16, 17 and 18 apply at all times except during periods of start-up and shutdown as defined as follows:

(a) Cold start-up: Refers to restarts made more than 48 hours after shutdown; cold start-up periods shall not exceed 4 hours per occurrence.

(b) Warm Start-up: Refers to restarts made more than 8 hours but less than 48 hours after shutdown; warm start-up periods shall not exceed 3 hours per occurrence.

(c) Hot Start-up: Refers to restarts made 8 hours or less after shutdown; hot start-up periods shall not exceed 2 hours per occurrence.

(d) Shutdown: Commences with the termination of fuel (natural gas) fired into the combustion chambers.

(20) The Department reserves the right to revise the emission limits included in Conditions 16, 17 and 18 and impose more stringent emissions limits based on actual emissions data.

(21) Pursuant to the provisions of 25 PA Code Section 123.31, there shall be no malodorous emissions from any operation related to any source covered under this Plan Approval.

(22) Pursuant to the provisions of 25 PA Code Section 123.41, the visible air contaminants from each combustion turbine exhaust stack shall not be emitted in such a manner that the opacity of the emissions is equal to or greater than 20% for a period or periods aggregating more than 3 minutes in any one hour; or equal to or greater than 60% at any time.

(23) Within 60 days after achieving the maximum firing rate, but not later than 180 days after start-up, the permittee shall demonstrate compliance with each emission limit established in Conditions 16, 17, and 18 and opacity as per Section 60.8 and 40 CFR Part 60 Subparts Db and Gg and Chapter 139 of the Rules and Regulations of the Department of Environmental Protection.

(24) At least 60 days prior to the test, the permittee shall submit to the Department for approval the procedures for the test and a sketch with dimensions indicating the location of sampling ports and other data to ensure the collection of representative samples.
(25) At least 30 days prior to the test, the Regional Air Quality Program Manager shall be informed of the date and time of the test.

(26) Within 30 days after the source test(s), two copies of the complete test report, including all operating conditions, shall be submitted to the Regional Air Quality Program Manager for approval.

(27) Continuous emission monitoring system for nitrogen oxides (as NO\textsubscript{2}) carbon monoxide (CO) and diluent gas (O\textsubscript{2} or CO\textsubscript{2}) must be approved by the Department and installed, operated and maintained in accordance with the requirements of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection. Proposals containing information as listed in the Phase I section of the Department’s Continuous Source Monitoring Manual for the CEMs must be submitted at least 3 months prior to the start-up of the combustion turbines.

(28) Phase I Department approval must be obtained for the monitors described in Condition 27 prior to initial start-up of the combustion turbines. Phase III Department approval must be obtained within 60 days of achieving the maximum production rate at which the turbines will be operated, but not later than 180 days after initial start-up of the turbines. Department review time for the Phase III report (time between postmark of the permittee’s Phase III report and the postmark of the Department’s response letter) will not be charged against the turbines in determining compliance with this condition. Information in obtaining Department approval is included in the Department’s Continuous Source Monitoring Manual.

(29) The permittee shall install and maintain fuel flow monitors that meet the requirements of 40 CFR Part 75.

(30) The permittee shall monitor the sulfur and nitrogen content of the fuel being fired in the combustion turbines as per 40 CFR 60.334(b), unless the permittee receives approval from the US EPA to use an alternative method as per 40 CFR 60.13.

(31) The permittee shall monitor and record the following parameters for each SCR system:

   (a) Catalyst bed inlet gas temperature
   (b) Ammonia solution injection rate
   (c) Ammonia solution concentration
   (d) Ammonia slip
(32) The permittee shall record each start-up and shutdown, including the date and times of each event, for the combustion turbines with duct burners.

(33) The permittee shall, at the minimum, record the following:

(a) Monthly fuel consumption for each combustion turbine with duct burners
(b) 12-month rolling total fuel consumption of the sources identified in Condition (33)(a)
(c) Monthly emissions of TSP/PM_{10}, SO_{2}, NO_{x}, CO and VOC
(d) 12-month rolling total of the emissions identified in Condition (33)(c)
(e) Results of fuel sampling
(f) SCR monitoring results

(34) All emissions shall be determined by the methods found in 40 CFR Part 60 Subparts Db and GG, the Plan Approval Application and supplemental materials and Continuous Emission Monitoring Manual.

(35) The permittee shall limit the total dissolved/suspended solids in the cooling tower blowdown water to 1250 ppmw, or less.

(36) The permittee shall, on a weekly basis, test the cooling tower water for total dissolved and suspended solids. A schedule of less frequent testing may be approved by the Department upon demonstration that the results of the required testing are below the limitation contained in Condition (35).

(37) Records required under this Plan Approval, 40 CFR Part 60 Subparts Db and GG and 40 CFR Parts 72, 73, 75 and 77 shall be kept for a period of 5 years and shall be made available to the Department upon request.

(a) The permittee shall maintain records on all air pollution control system performance evaluations and records of calibration checks, adjustments and maintenance performed on all equipment which is subject to this Plan Approval.

(b) The permittee shall maintain a copy of the manufacturer’s specifications for the two combustion turbines, two duct burners, cooling tower and air pollution control equipment on-site.

(c) The permittee shall maintain a copy of the manufacturer’s specifications for all CEMs that are required by this Plan Approval.
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(d) The permittee shall keep a record of the date of malfunction, the time of the malfunction, the cause of the malfunction and the action taken to correct the malfunction.

(e) The permittee shall keep a record of the results of the testing for cooling tower blowdown water total dissolved and suspended solids.

(38) The Department reserves the right to use the CEMs data, stack test results, and the operating parameters determined during optimization of the turbines and their associated air cleaning devices to verify emission rates, to establish emission factors, and to develop compliance assurance measures in the Operating Permit.

(39) The permittee shall submit an application for plan approval to convert four existing combustion turbines at the Martins Creek Steam Electric Station from oil-fired to natural gas-fired. The PM$_{10}$ emissions from each combustion turbine shall not exceed 2.62 tons per year based on a 12-month rolling total when fired by natural gas. The application shall be submitted and approved by the Department prior to commencement of the operation of the combustion turbines covered by this Plan Approval.

(40) Hazardous Air Pollutants (HAPs) for the entire facility shall not exceed 10 tons per year for a single HAPs and 25 tons per year for all the HAPs.

(41) Prior to the commencement and operation of the combustion turbines covered by this Plan Approval, the permittee shall submit the appropriate information to modify the Title V Operating Permit No. 48-00011 concerning the Martins Creek Steam Electric Station which indicates that a daily PM$_{10}$ emission limit of 918 pounds per day shall not be exceeded for the auxiliary boiler 4B. Appropriate monitoring and record-keeping shall also be modified for the said Title V operating permit.

(42) Nothing in this permit shall be construed to supersede, amend or authorize violation of the provisions of any valid and applicable local law, ordinance or regulation, provided that said local law, ordinance or regulation is not preempted by the Pennsylvania Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, 35 P.S. §§4001-4015, et seq.

(43) The permittee shall comply with the Pennsylvania Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, 35 P.S. §§4001-4015, et seq. and Title 25, Rules and Regulations, Article III, Air Resources promulgated thereunder.
(44) This Plan Approval comprises temporary operation of source(s) covered by this Plan Approval provided the following conditions are met.

(a) The Department must receive written notice from the Owner/Operator of the completion of construction and the Operator’s intent to commence operation at least five (5) working days prior to the completion of construction. The notice should state when construction will be completed and when Operator expects to commence operation.

(b) Operation is authorized only to facilitate the startup and shakedown of sources and air cleaning devices, to permit operations pending the issuance of an Operating Permit or to permit the evaluation of the source(s) for compliance with all applicable regulations and requirements.

(c) This condition authorizes temporary operation of the source(s) for a period of 180 days from the date of commencement of operation, provided the Department receives notice from the Owner/Operator pursuant to subpart (a), above.

(d) The Owner/Operator may request an extension if compliance with all applicable regulations and Plan Approval requirements has not been established. The extension request shall be submitted in writing at least 15 days prior to the end of this period of temporary operation and shall provide a description of the compliance status of the source and the reasons compliance has not been established.

(e) The notice submitted by the Owner/Operator pursuant to subpart (a), above, prior to the expiration of this Plan Approval, shall modify the plan approval expiration date. The new plan approval expiration date shall be 180 days from the date of commencement of operation.