

3. GENERAL CONDITIONS

- a) This Plan Approval authorizes the construction of two waste coal-fired, circulating fluidized bed (CFB) boilers and a steam generator capable of producing 580 gross megawatts by Wellington Development – WVDT, LLC. The facility will be located in Cumberland Township, Greene County and will be known as the Greene Energy Resource Recovery Facility (Greene Energy). Other air emission sources at the facility include material handling operations for fuel, ash, urea, lime and limestone, as well as limestone dryers, a natural gas-fired auxiliary boiler, a cooling tower, and emergency diesel engines [Title 25 PA Code §127.12b].
- b) The Owner/Operator shall install the following air cleaning devices on the CFB boilers [Title 25 PA Code §127.12b]:
 - (i) Limestone injection into the CFB and a dry polishing scrubber for SO₂ emission control.
 - (ii) A fabric collector for particulate control.
 - (iii) Selective non-catalytic reduction (SNCR) for NO_x control.
- c) The Owner/Operator shall advise the Department of the specific make and model of equipment and design details within 10 business days of issuing the purchase order for all air contamination sources and all air cleaning devices by submitting appropriate pages of the Plan Approval Application [Title 25 PA Code §127.12b].
- d) This approval to construct shall become invalid if: (1) construction is not commenced (as defined in 40 CFR 52.21(b)(8)) within 18 months after the date of this approval; or, (2) if construction is discontinued for a period of 18 months or more; or, (3) construction is not completed within five years. The Owner/Operator shall submit to the Department a detailed construction schedule for the entire facility within 60 days of issuance of this Plan Approval.
- e) The provisions of 40 CFR 60 New Source Performance Standards for Fossil Fuel-Fired Steam Generators (Subpart Da), Industrial-Commercial-Institutional Steam Generating Units (Subpart Db), Coal Processing Plants (Subpart Y) and Nonmetallic Mineral Processing Plants (Subpart OOO) are applicable requirements.
 - i) Subpart Da emission limits for particulate matter, visible emissions and sulfur dioxide are subsumed by the emission limits established in conditions 4(a) and 4(b) below. The facility shall comply with the compliance provisions, emission monitoring, compliance determination procedures, and methods and reporting requirements in this Subpart.
 - ii) Subpart Db standards are applicable requirements for the natural gas-fired auxiliary boiler. The facility shall comply with the standards, compliance and performance test methods and procedures, emission monitoring and reporting and recordkeeping requirements in this Subpart.
 - iii) Subpart Y standards are applicable requirements for all coal processing and conveying equipment and all coal storage, transfer and loading systems. The facility shall comply with the standards for particulate matter, those provisions relating to monitoring of operations, and test methods and procedures in this Subpart.

- iv) Subpart OOO standards are applicable requirements for all limestone and lime grinding/rolling mills, screening/classifying operations, conveying equipment, and silos/storage bins. The facility shall comply with the standards for particulate matter, test methods and procedures, and reporting and record keeping in this Subpart.
- v) In accordance with 40 CFR 60.4 copies of all requests, reports, applications submittals and other communications shall be forwarded to both EPA and the Department at the addresses listed below unless otherwise noted.

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

Air Quality Program Manager
 Pa DEP
 Air Quality
 400 Waterfront Drive
 Pittsburgh, PA 15222

- f) This Plan Approval authorizes temporary operation of the source(s) covered by this Plan Approval provided the following conditions are met [Title 25 PA Code §127.12b]:
 - (i) The Owner/Operator shall submit written Notice of the Completion of Construction and the Operator's intent to commence operation at least 5 days prior to the completion of construction. The Notice shall state the date when construction will be completed and the date when the Operator expects to commence operation.
 - (ii) Operation of the source(s) covered by this Plan Approval is authorized only to facilitate the start-up and shakedown of sources and air cleaning devices, to permit operations pending the issuance of an Operating Permit, and to permit the evaluation of the source for compliance with all applicable regulations and requirements.
 - (iii) Upon receipt of the Notice of the Completion of Construction from the Owner/Operator the Department shall authorize a 180-day Period of Temporary Operation of the source(s) from the date of commencement of operation. The Notice submitted by the Owner/Operator, 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.
 - (iv) Upon determination by the Owner/Operator that the source(s) covered by this Plan Approval are in compliance with all conditions of the Plan Approval the Owner/Operator shall contact the Department's reviewing engineer and schedule the Initial Operating Permit Inspection.
 - (v) Upon completion of the Initial Operating Permit Inspection and determination by the Department that the source(s) covered by this Plan Approval are in compliance with all conditions of the Plan Approval the Owner/Operator shall submit a Title V Operating Permit (TVOP) application, at least 60 days prior to the expiration date of the Plan Approval.

- (vi) The Owner/Operator may request an extension of the 180-day Period of Temporary Operation 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 the Period of Temporary Operation and shall provide a description of the compliance status of the source. The extension request shall include a detailed schedule for establishing compliance and the reasons compliance has not been established. This Period of Temporary Operation may be extended for additional periods, each not to exceed 120-days, by submitting an extension request as described above.
- (vii) If, at any time, the Department has cause to believe that air contaminant emissions from the sources listed in this plan approval may be in excess of the limitations specified in, or established pursuant to this plan approval or the permittee's operating permit, the permittee may be required to conduct test methods and procedures deemed necessary by the Department to determine the actual emissions rate. Such testing shall be conducted in accordance with Title 25 PA Code Chapter 139, where applicable, and in accordance with any restrictions or limitations established by the Department at such time as it notifies the company that testing is required.

4. STACK EMISSIONS LIMITATIONS

- a) Emissions from the CFB shall be limited as follows [Title 25 PA Code §127.12b]:

Pollutant	Emission Factor Lb/MM BTU ^(e)	Pounds per hour ^(a) ^(e)	Tons per year ^(b)
PM ^(c)	0.012	33.1	289.7
PM ₁₀ ^(d)	0.012	33.1	289.7
SO _x (as SO ₂)	0.156 ^(g)	645	3,767
NO _x (as NO ₂)	0.08 ^(g)	275.6	1931.4
	0.10 ^(f)		
VOC ^(h) (as propane)	0.005	13.8	121
CO	0.20 ^(g)	551	4,829
Pb ⁽ⁱ⁾	6.5 x 10 ⁻⁴	1.79	15.7
NH ₃	10 ppmv		
Hazardous Air Pollutants			
Beryllium	5.2 x 10 ⁻⁵	0.145	1.25
HF ^(j)	0.0014	3.77	33.0
HCl	0.0067	18.4	161.2
H ₂ SO ₄	0.0060	16.55	145
Mercury ^(k)	Emission rate based on monthly calculation per the NSPS, Subpart Da, for Electric Utility Steam Generating Units effective May 18, 2005.	Emission rate based on monthly calculation per the NSPS, Subpart Da, for Electric Utility Steam Generating Units effective May 18, 2005.	Emission rate based on monthly calculation per the NSPS, Subpart Da, for Electric Utility Steam Generating Units effective May 18, 2005.

(a) For a single boiler.

(b) Ton per year total based on a 12-month rolling average for two boilers.

(c) Total filterable particulate matter based on EPA Method 5 or 17.

- (d) Filterable PM₁₀ based on EPA Method 201 or 201A. Condensable PM₁₀ based on EPA Method 202 or other Department approved method for condensable PM₁₀.
- (e) 3-hour average unless otherwise noted.
- (f) 24-hour average.
- (g) 30-day rolling average.
- (h) Based in EPA Methods 25A and 18.
- (i) Based in EPA Method 29.
- (j) Based in EPA Method 13B.
- (k) Allowable emission rate for a fuel blend of 85% coal refuse & 15% ROM coal would be 4.34×10^{-6} lb/MWh and 0.0025 lb/hr. Compliance with these emission rates will be based on a 12 month rolling average. Emissions for any 12 month period would be 22.05 lb/yr based on a 12 month rolling total.

Note: During CFB boiler startup and shutdown, the CFB boiler(s) must meet the above lb/hr limits in table in Section 4a), all other emission limitations are not applicable during CFB boiler startup and shutdown. For purposes of this condition, CFB boiler startup is defined as the period beginning with initial use of the burners firing natural gas and ending at the time when the load has reached minimum sustainable load. CFB boiler shutdown is defined as the period of time beginning with the load decreasing from minimum sustainable load and ending when the bed material fluidizing air has been discontinued. Emissions occurring during startup and shutdown shall be monitored, recorded, reported and included in the calculation of thirty day rolling average and annual emission rates.

b) Emissions from the facility in any consecutive 12 month period shall be limited as follows [Title 25 PA Code §127.12b]:

Pollutant	Total (tpy)
SO ₂	3,767.1
PM	407.7
PM ₁₀	384.7
NO _x	1,949.4
CO	4,865
VOC	125
Lead	15.7
Beryllium	1.25
HF	33
HCl	161
H ₂ SO ₄	145
Mercury	22.05 lb/yr
Ammonia	157

- c) The Owner/Operator shall not permit the emission to the outdoor atmosphere of visible emissions from the CFB boilers, in such a manner that the opacity of the emission is equal to or greater than 10% for a period, or periods aggregating more than 3 minutes in any one hour, or equal to or greater than 30% at any time. The presence of uncombined water is not considered a failure to meet the limitations. [Title 25 PA Code §127.1 & §127.12b].
- d) The ammonia slip from the CFB boilers shall not exceed 10 ppmvd @ 7% oxygen. Ammonia feed rates shall be optimized to minimize ammonia slip. Compliance with this condition shall be established by stack testing in accordance with Condition 5a below. Continuing compliance with this condition shall be determined by adhering to good operating practices. [Title 25 PA Code §127.1 & §127.12b].
- e) Particulate matter emissions from any fuel or limestone handling & processing stack may not exceed 0.005 gr/dscf based on EPA Method 5 [Title 25 PA Code §127.12b].
- f) Particulate matter emissions from the limestone dryer baghouse stack may not exceed 0.005 gr/dscf based on EPA Method 5 [Title 25 PA Code §127.12b].
- g) Particulate matter emissions from ash handling stacks may not exceed 0.01 gr/dscf based on EPA Method 5 [Title 25 PA Code §127.12b].
- h) NO_x emissions from the natural gas-fired auxiliary boiler shall not exceed 0.10 lb/MMBtu on a 30 day rolling average basis [40 CFR Part 60 Subpart Db].
- i) The sulfur content of any fuel oil used to fire the emergency diesel engines shall not exceed 0.05 % by weight. A supplier sulfur content certification shall accompany each delivery based on a minimum of one test per every 10,000 gallons delivered. [Title 25 PA Code §127.12b].
- j) The total dissolved solids content of the cooling tower water shall not exceed 7,000 ppmw [Title 25 PA Code §127.12b].
- k) The Owner/Operator shall secure 1,950 tons of NO_x ERCs and 144 tons of VOC ERCs. ERCs shall be properly generated, certified by the Department and processed through the registry in accordance with PA Code Title 25 § 127.206(d)(1). Upon transfer, owner/operator shall provide the Department with documentation clearly specifying the details of the ERC transaction. This facility may not commence operation until the Department certifies the required emissions reductions [Title 25 PA Code §127.205].
- l) Condensable PM₁₀ emissions from fluidized bed boilers have not been widely quantified. If the owner/operator can demonstrate to the Department that the actual condensable portion of PM₁₀ causes the emission rate listed in Condition 4a to be exceeded the Department will revise the PM₁₀ allowable emission rate to a level not to exceed 0.05 lb/MMBtu, which is the level at which the modeling was performed. Such a revision shall be by a Minor Plan Approval Modification. In the interim, emissions of PM₁₀ from the CFB boilers will not be considered to be in violation so long as the filterable PM₁₀ emissions, as determined by EPA Methods 5, 17, 201, or 201A, does not exceed .012 #/MMBTU/ and the total PM₁₀ including the condensable PM₁₀ emissions, as determined by EPA Method 202 or other Department approved method, does not exceed .050 #/MMBTU. If the emission rate of PM₁₀ in condition

4a is exceeded during the initial stack test a follow-up test shall be performed within 60 days of completion of the initial test [Title 25 PA Code §127.12b].

m) If the Owner/Operator can demonstrate to the Department, after optimization of ammonia feed and slip rates, that the CFB boilers are not capable of meeting the 0.08 lb/MMBtu 30-day rolling average allowable emission rate, the Department will revise the allowable NO_x emission rate to a level not to exceed 0.10 lb/MMBtu based on a 24-hour average, which is the level at which modeling was performed. Such a revision shall be by a Minor Plan Approval Modification. In the interim, NO_x as NO₂ emissions from the fluidized bed boilers will not be considered in violation so long as the NO_x as NO₂ emissions on a 24-hour average basis do not exceed 0.10 #/MMBTU. [Title 25 PA Code §127.12b].

n) The facility is subject to the Title IV Acid Rain Program of the 1990 Clean Air Act Amendments, and shall comply with all applicable provisions of that Title, including the following:

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

o) The facility is subject to the NO_x Budget Trading Program found in Title 25 PA Code §145.

5. TESTING REQUIREMENTS

a) Within 180 days of initial start-up but no later than 60 days of achieving maximum production, a stack test(s) shall be performed on each CFB boiler in accordance with the provisions of Chapter 139 to determine the following pollutant emission rates [Title 25 PA Code §139.2]:

- PM₁₀ (by EPA Method 201 or 201A)
- PM₁₀ (by EPA Method 202 or other Department approved method for condensable PM₁₀)
- TSP (by EPA Method 5)
- HCl
- HF (by EPA Method 13B)
- H₂SO₄
- Arsenic
- Beryllium
- Nickel
- NMVOC (by EPA Methods 25A & 18)
- Lead (by EPA Method 29)
- Cadmium
- Chromium Compounds
- Ammonia

These tests shall be repeated on a yearly basis. The frequency may be reduced in subsequent permits if determined appropriate by the Department [Title 25 PA Code §139.2].

b) Within 180 days of initial start-up but no later than 60 days of achieving maximum production, a fuel analysis and stack test(s) shall be performed simultaneously on the inlet and outlet of each CFB boiler fabric collector in accordance with the provisions of Chapter 139 to determine the mercury emission reduction [Title 25 PA Code §139.2]

- c) Within 180 days of initial start-up but no later than 60 days of achieving maximum production the Owner/Operator shall perform NO_x stack testing on the natural gas-fired auxiliary boiler per the requirements of 40 CFR Part 60 Subpart Db.
- d) The Owner/Operator shall submit a pre-test protocol for review at least 60 days prior to performance of any stack test [Title 25 PA Code §139.2].
- e) The Owner/Operator shall notify the Department at least two weeks prior to any stack test so that an observer may be present at the time of the test [Title 25 PA Code §139.2].
- f) The Owner/Operator shall submit three copies of the stack test report to the Department within 60 days of the completed testing [Title 25 PA Code §139.2].
- g) On a quarterly basis, the Owner/Operator shall collect a representative composite sample, and conduct a certified analysis, of the as-fired coal/coal refuse for the contaminants listed in Condition 5a (with the exception of PM₁₀, TSP, and NMVOC). The analysis shall also include mercury, sulfur, ash, Btu, and moisture contents. The results shall be kept on site [Title 25 PA Code §127.12b].

6. CONTINUOUS MONITORING

- a) The Owner/Operator shall install, certify, maintain, and operate a CEM system for monitoring sulfur oxides (as SO₂), NO_x (as NO₂), visible emissions (opacity), carbon monoxide (CO), and stack gas flow from each CFB boiler. Oxygen (O₂) or carbon dioxide (CO₂) shall be monitored at each location where SO_x, NO_x, or CO are monitored in accordance with the requirements of Title 25 PA Code Chapter 139.
- b) The Owner/Operator shall install, certify, maintain, and operate a CEM system, or other system meeting the monitoring requirements of the New Source Performance Standard, Subpart Da, for Electric Utility Steam Generating Units for monitoring mercury (Hg). Oxygen (O₂) or carbon dioxide (CO₂) shall be monitored at each location where Hg is monitored in accordance with the requirements of Title 25 PA Code Chapter 139.
- c) The Owner/Operator shall install, certify, maintain and operate a monitoring system for sampling and analysis of as-fired coal/coal refuse in accordance with the requirements of 25 PA Code Chapter 139 and 40 CFR 60 Appendix A, Method 19, or an alternate method approved by the Department. Sulfur analysis of the as-fired fuel shall be determined on a daily basis with the results used to calculate monthly averages. This sulfur-in-fuel analysis and the output from the SO₂ CEM shall provide the basis to calculate SO₂ control efficiency as required in 40 CFR 60 Subpart Da and shall be reported on a 30 day rolling average basis.
- d) The Owner/Operator shall install, certify, maintain and operate a system for monitoring the coal/coal refuse blend ratio. This coal/coal refuse blend ratio shall be used to calculate the unit specific mercury emission limitation in accordance with New Source Performance Standard, Subpart Da, Section 60.45a(5) for Electric Utility Steam Generating Units effective May 18, 2005.

- e) The Owner/Operator shall maintain a daily log of:
- (i) Hours of operation for each air pollution source.
 - (ii) Coal feed rate.
 - (iii) Coal refuse feed rate.
 - (iv) Natural gas consumption.
 - (v) Fuel oil consumption.
 - (vi) Ammonia injection rate.
 - (vii) Limestone consumption.
 - (viii) Lime consumption.
 - (ix) Urea consumption.
 - (x) Cooling tower water circulation and makeup rates.
 - (xi) MW/hr produced (gross MW/hr).
 - (xii) Facility-wide inspection (Condition 8k).

This log shall be maintained on site for a minimum of five years and shall be made available to the Department upon request [Title 25 PA Code 127.12b].

f) The Owner/Operator shall maintain a log of hours of operation for all emergency diesel engines. Hours of operation for each emergency diesel engine shall not exceed 52 hours in any consecutive 12-month period [Title 25 PA Code §127.12b].

g) The Owner/Operator shall, at a minimum of once per month sample and analyze the cooling tower water for total dissolved solids at a point which is representative of the water being evaporated to the atmosphere. [Title 25 PA Code §127.12b].

h) The Owner/Operator shall comply with the monitoring requirements for NO_x on the natural gas-fired auxiliary boiler per the requirements of 40 CFR Part 60 Subpart Db.

7. NOTIFICATION/REPORTING

a) At least 90 days prior to start-up, the Owner or Operator shall submit information required by Phase I of the Department's "Continuous Source Monitoring Manual", Revision 6, January 1996 to the following address.

Chief, Division of Technical Services & Monitoring
 PA Department of Environmental Protection
 Rachel Carson State Office Building
 400 Market Street (12th Floor)
 P.O. Box 8468
 Harrisburg, PA 17105-8468

- b) The Owner/Operator shall report each malfunction that poses an imminent and substantial danger to the public health and safety or the environment or which it should reasonably believe may result in citizen complaints to the Department that occurs at this Title V facility. For purposes of this condition a malfunction is defined as any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment or a process to operate in a normal or usual manner that may result in an increase in the emissions of air contaminants [Title 25 PA Code §127.441].
- c) The Title V Operating Permit application shall include a CAM submittal prepared in accordance with 40 CFR § 64.4 for applicable units.

8. WORK PRACTICE STANDARDS

- a) The Department reserves the authority to require additional control of fugitive emissions (e.g. road paving, process equipment enclosures, conveyor covers, etc.) based on evaluation of the operation after start-up and a determination that the existing controls are inadequate to control fugitive emissions [Title 25 PA Code §127.12b].
- b) The truck loading and unloading areas and the plant delivery roads shall be paved with asphalt, concrete, or an equivalent surface approved by the Department [Title 25 PA Code §127.12b].
- c) Road dust shall be controlled by a road sweeper and/or the use of water sprays, oils, or other dust surfactants [Title 25 PA Code §127.12b].
- d) A pressurized water truck shall be on site and available at all times for use when the facility is operating [Title 25 PA Code §127.12b].
- e) The Owner/Operator shall post a sign stating the requirement that “All loaded trucks entering or exiting plant property shall be properly tarpaulin covered.” [Title 25 PA Code §127.12b].
- f) All conveyor belts shall be partially enclosed, and all screens and crushers shall be fully enclosed, so as to prevent fugitive emissions from becoming airborne [Title 25 PA Code §127.12b].
- g) Ash silos shall discharge through an ash conditioner which shall moisten the ash before it is loaded into trucks for disposal or dry ash shall be loaded into pneumatic tankers using a dustless loading system [Title 25 PA Code §127.12b].
- h) Fuel and limestone shall only be stockpiled in areas that are either enclosed or are capable of being watered on an as-needed basis by the pressurized water truck and/or sprinkler system or stockpile emissions may be controlled by applying chemical agents [Title 25 PA Code §127.12b].
- i) The baghouse outlet temperature shall not exceed 250°F. A thermocouple shall be provided to monitor this temperature, which shall be continuously recorded, and a high temperature alarm will sound in the CFBs’ control room if the baghouse outlet temperature exceeds 250° F [Title 25 PA Code §127.12b].

j) The baghouse shall be designed with an effective air-to-cloth ratio of not more than 4:1 at actual conditions [Title 25 PA Code § 127.12b].

k) The Owner/Operator shall perform a daily inspection of the Facility for the presence of visible stack emissions, fugitive emissions, and malodorous emissions. Records of the inspections shall be maintained in a log and include any corrective actions taken [Title 25 PA Code §127.12b].

9. Class I Mitigation [40 CFR Part 52]

The owner/operator shall secure Mitigation Offsets of SO_x (as SO₂) in accordance with the following:

- a. The Greene Energy sources herein authorized to be constructed, shall not operate unless and until Mitigation Offsets of 2088 tons of SO₂ ERCs from the facilities specified in the mitigation plan presented on June 9, 2005 are secured or other SO₂ Mitigation Offsets are secured from other facilities not specified in the June 9, 2005 mitigation plan that result in equivalent or greater decreases in the sulfur deposition loadings at the Class 1 areas as the 2088 tons of SO₂ ERCs specified in the June 9, 2005 mitigation plan based on appropriate Calpuff modeling.
- b. The Greene Energy sources herein authorized to be constructed, shall not operate unless and until Mitigation Offsets of 411 tons of SO₂ ERCs, in addition to the ERC's required by Condition 9a, are secured from facilities included in the Pennsylvania ERC Registry.
- c. The actual emission reductions that the Mitigation Offsets represent must have occurred and must be established in a Federally enforceable operating permit condition for the generating source(s) prior to operation of the Greene Energy sources.
- d. For the purposes of this approval the Mitigation Offsets shall be surplus, permanent, quantified and Federally enforceable in accordance with 25 PA Code Section 127.207 (1).
- e. For the purposes of this approval the Mitigation Offsets shall be calculated by establishing the baseline in accordance with 25 PA Code 127.207 (4).
- f. For the purposes of this approval the Mitigation Offsets shall be generated by the techniques listed under 25 PA Code 127.207 (5).
- g. Once the Mitigation Offsets are secured in accordance with this Plan Approval special condition they are no longer available for other uses (internal netting, sale, transfer or exchange for other purposes, ERC's, etc).
- h. The Mitigation Offsets shall be certified by the Department. Upon certification by the Department and notice that all offsets have been secured, no further mitigation shall be necessary.
- i. The Department shall provide the Department of the Interior a copy of the draft Title V Operating Permit (TVOP); operating data sufficient to determine the 24-hour, 30-day rolling, and annual average sulfur dioxide emissions and control efficiencies; and any PA DEP staff analysis; a minimum of 30-days prior to publishing Notice of Intent to Issue the TVOP in the Pennsylvania Bulletin.