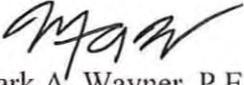


COMMONWEALTH OF PENNSYLVANIA  
Department of Environmental Protection  
Southwest Regional Office

**TO** AQ Case File TVOP-32-00055

**FROM** Noor Nahar   
Air Quality Engineering Specialist  
Air Quality

**THROUGH** Barbara Hatch, P.E.   
Environmental Engineer/Manager  
Air Quality

Mark A. Wayner, P.E.   
Program Manager  
Air Quality

**DATE** May 24, 2012

**RE** Review of Title V Operating Permit Renewal Application  
EME Homer City Generation, LP  
Homer City Generating Station  
Black Lick/Center Township, Indiana County

APS 653245 AUTH 736707 PF 262713

**Background:**

The Homer City Station includes three coal fired Units with a total of 1,884 megawatt (MW) net generation capacity. Electricity is generated at this facility from the burning of bituminous coal in three primary boilers rated at 6,792, 6792, and 7,260 MMBtu/hr. All three Units are equipped with ESPs for particulate control as well as selective catalytic reduction (SCR) & Low-NOx Burner Separated Over-Fire Air (LNBSOFA) for NO<sub>x</sub> control. Boiler No. 3 is also controlled by a limestone scrubber unit. Auxiliary boiler (currently under PA-32-00055F) is only used to provide steam while the primary coal-fired boilers start up.

The facility is located in a rural area slightly less than 1 mile northwest of the town of Coral off of Route 119 and approximately 2 miles southwest of Homer City. This is a Title V facility because potential emissions, for every criteria pollutant excluding lead, as well as some individual HAPs, exceed major source thresholds.

The initial Title V Operating Permit (TVOP) was issued on January 30, 2004 with an expiration date of January 30, 2009. The Title V Renewal Application was received by the Department on July 31, 2008 and this application was determined administratively complete on August 5, 2008. On April 27, 2012, Homer City submitted a supplement to its Permit renewal application to address regulatory and other changes since the renewal application was submitted.

### Plan Approvals, RFDs & ERCs:

Plan Approval PA-32-00055F was issued on January 7, 2010 to EME Homer City Generation, LP (HCG) to construct and operate an oil-fired auxiliary boiler rated at 313 MMBtu/hr. Two existing oil-fired auxiliary boilers (A and B) with a combined rating of 239 MMBtu/hr at the facility were replaced by this single boiler unit. In addition to this change, a new auxiliary boiler stack with a height of 145 feet was installed in place of the existing 120 foot tall stack. This unit is in temporary operation under Plan Approval extension. Some minor construction work is still needed. This source has not been included in the TVOP.

Plan Approval PA-32-00055G was issued on October 1, 2010 to EME Homer City Generation, LP (HCG) 2010 for activated carbon injection (ACI) installation on Unit 1 & 2 to control mercury. EME says this is constructed and in place but has not been used and no AC has been delivered to the facility. Since compliance with the Plan Approval has not been demonstrated, this control device is still under Plan Approval and has not been included in the TVOP.

Plan Approval PA-32-00055H was issued on April 2, 2012 for dry FGD installation on Unit 1 & 2 to control SO<sub>2</sub> and other pollutants. This project has a lengthy construction schedule, and has not been included in the TVOP.

Company will submit requests for administrative amendments of the Title V permit to include all the above referenced Plan Approvals in the permit, once construction, testing, etc. is completed.

The following Requests for Determinations were approved by the Department since the issuance of the initial Title V operating permit:

- Extension of the Unit 3 FGD stack liner (May 11, 2005);
- Change in coal blending process (March 1, 2006);
- Short-term sorbent injection trial on Unit 1 (September 8, 2006);
- Changes to coal conveying speed to allow increase from 850 TPH rate to 1100 TPH rate (February 27, 2007);
- Process change to allow train delivered coal for Unit 3 to be moved directly to the coal silos by belt without additional handling and trucking activities (August 23, 2007);
- Replacement of Unit 2 Electrostatic Precipitator Electrode Wire Vibrators with Rappers (March 2011);
- Installation of Additional Plate Rappers on Unit 2 (January 2011) (Homer City subsequently advised the Department that it no longer intended to install the additional plate rappers on Unit 2);
- Ash Disposal Site Expansion (December 2010);
- Units 1 and 2 Trona Injection Testing (June 2010);
- Unit 3 Boiler Cleaning Waste Incineration (April 2010);
- Replacement of Unit 3 Flue Gas Desulfurization System Nozzles and Demister (February 2010);

- Installation of High Frequency Transformer Rectifier Sets on the Units 1 and 2 Electrostatic Precipitators (October 2009); and
- Trona Testing (July 2009).

No changes have been made to the TVOP as a result of these RFDs.

### **Regulatory Analysis:**

The applicability of changes in Regulatory Requirements since the previous Title V issuance has been evaluated.

### **40 CFR Part 63 Subpart UUUUU-National Emission Standards for Hazardous Air Pollutants (NESHAP) for Coal and Oil-Fired Electric Utility Steam Generating Units**

On February 16, 2012 (77FR9304), EPA promulgated the final National Emission Standards for Hazardous Air Pollutants (NESHAP) for electric utilities.

The three coal-fired boilers at Homer City station meet the definition of fossil-fired electric utility steam generating units (EGUs) as defined in § 63.10042: *Fossil fuel-fired* means an electric utility steam generating unit (EGU) that is capable of combusting more than 25 MW of fossil fuels. To be “capable of combusting” fossil fuels, an EGU would need to have these fuels allowed in its operating permit and have the appropriate fuel handling facilities on-site or otherwise available (e.g., coal handling equipment, including coal storage area, belts and conveyers, pulverizers, etc.; oil storage facilities). In addition, fossil fuel-fired means any EGU that fired fossil fuels for more than 10.0 percent of the average annual heat input during any 3 consecutive calendar years or for more than 15.0 percent of the annual heat input during any one calendar year after the applicable compliance date. Therefore, the Homer City facility is subject to 40 CFR Part 63 Subpart UUUUU and shall comply with all applicable requirements codified in §§ 63.9980 through 63.10042, including Tables and Appendices, by April 16, 2015.

### **40 CFR Part 98 Subparts A, C- Mandatory Greenhouse Gas Reporting**

This part was promulgated on October 30, 2009. Per 40 CFR Section 98.2(a), the Greenhouse Gas (GHG) reporting requirements and related monitoring, recordkeeping, and reporting requirements of this part apply to the owners and operators of any facility that is located in the United States and that meets the requirements of either paragraph (a)(1), (a)(2), or (a)(3) of this section. Electricity generation units that are subject to the Acid Rain Program are also subject to this part under (a)(1) of this section. Units at the Homer City are subject to the Acid Rain Program and the facility is therefore subject to this part. Therefore, the station is subject to 40 CFR Part 98 Subpart C for the calendar year 2010 and later years. This makes the station subject to the specific requirements of Subpart D-Electricity Generation of Part 98. However, public comments to the Greenhouse Gas Mandatory Reporting Rule (GHG MRR) questioned the requirements of this rule to meet current definitions of “applicable requirement” at 40 CFR 70.2 and 71.2. The commentators requested that USEPA confirm their interpretation of the regulations. The EPA provided the following response: “As currently written, the definition of

“applicable requirement” in 40 CFR 70.2 and 71.2 does not include a monitoring rule such as today’s action, which is promulgated under CAA sections 114(a)(1) and 208.” The preamble of the final version of the GHG MRR, located at 74 Fed Reg 209, pp. 56287-56288, states that the GHG MRR is not considered an “applicable requirement” under the Title V Operating Permit program. Therefore, this Subpart, while an obligation for the Homer City, is not considered an applicable condition for this Title V Operating Permit.

### **The Greenhouse Gas Tailoring Rule**

This rule was issued in May 2010. This rule establishes a process for conducting Prevention of Significant Deterioration (PSD) reviews, including Best Available Control Technology (BACT) determinations for control of greenhouse gases (GHG) when a new source or a modification to an existing source results in emissions of GHGs in excess of certain thresholds. The projects approved for the Homer City facility have not triggered the applicability of GHG Tailoring Rule.

### **40 CFR 63, Subpart DDDDD – National Emission Standards for Industrial, Commercial, Institutional (ICI) Boilers and Process Heaters**

This Subpart was finalized on March 21, 2011. This rule applies to ICI boilers and process heaters located at facilities that are major for hazardous air pollutants (HAPs).

There are 15 subcategories included in DDDDD. The final rule includes specific requirements for each subcategory. Applicable requirements are based on the age, size, and fuel used in each source. It applies to new, reconstructed and existing coal, oil, biomass (i.e., wood products), natural gas, refinery gas boilers and process heaters. For all new and existing natural gas- and refinery gas-fired units, the final rule establishes a work practice standard, instead of numeric emission limits. The operator will be required to perform an annual tune-up for each unit. Units combusting other gases can qualify for work practice standards by demonstrating that they burn “clean fuel,” with contaminant levels similar to natural gas. For all new and existing units with a heat input capacity less than 10 million British thermal units per hour (MMBtu/hr), the final rule establishes a work practice standard instead of numeric emission limits. The operator will be required to perform a tune-up for each unit once every 2 years. The final rule establishes a work practice standard instead of numeric emission limits for all new and existing “limited use” boilers. The operator will be required to perform a tune-up for each unit once every 2 years. These units are operated less than 10 percent of the year as emergency and backup boilers to supplement process power needs.

The final rule establishes numeric emission limits for all other existing and new boilers and process heaters located at major sources (including those that burn coal and biomass). The final rule establishes emission limits for mercury, dioxin, particulate matter (PM) (as a surrogate for non-mercury metals), hydrogen chloride (HCl) (as a surrogate for acid gases), and carbon monoxide (CO) (as a surrogate for non-dioxin organic air toxics). The final rule requires monitoring to assure compliance with emission limits. The largest major source boilers must continuously monitor their particulate emissions as a surrogate for metals such as lead and chromium. All units larger than 10 MMBtu/hr must monitor oxygen as a measure of good combustion. The final rule also requires monitoring to assure the boiler and pollution controls are

operating within appropriate parameters. Existing major source facilities are required to conduct a one-time energy assessment to identify cost-effective energy conservation measures.

Electric utility steam generating units and other sources listed in this proposed Title V permit for Homer City Station are not subject to this Subpart.

#### **40 CFR Part 64- Compliance Assurance Monitoring (CAM)**

This part was promulgated on October 22, 1997 and the purpose applies to each pollutant-specific emissions unit located at a major source that is required to obtain a Title V operating permit if the unit satisfies the following criteria (per 40 CFR 64.2):

- (1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof);
- (2) The unit uses an add-on control device to achieve compliance with any such emission limitation or standard; and
- (3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.

Homer City is defined as a major source. Homer City developed a CAM plan and incorporated into the Title V Operating Permit renewal application, for the three boilers (Source 031, 032, 033) emissions of particulate matter. Each boiler utilizes an electro-static precipitator (ESP) to achieve compliance with particulate emission limitation.

#### **Compliance Assurance Monitoring (CAM) Protocol for Units 1 and 2:**

The purpose of this protocol is to outline procedures for the development, verification, operation, and ongoing maintenance of a continuous monitoring approach sufficient to demonstrate a reasonable assurance that ESP units C01 and C02, used to control the PM emissions respectively from sources 031 and 032 operate in compliance with the PM emission limit of 0.1 lb/MMBtu in 25 Pa. Code 123.11.

As part of the CAM Plan, during the scheduled periodic stack tests for the Units, both Method 5 PM and opacity measurements will be collected in order to confirm the predicted PM/Opacity relationship or to refine the relationship for ongoing CAM monitoring. The predicted PM for Units shall be determined from the CAM indicators, including the opacity to particulate mass equation developed by Robertson, R. et. al. as shown below; or as may be modified with Departmental approval upon collection of additional data.

$$PM = 0.462 * VE^2 - 4.60 * VE + 13.5$$

Where, PM = mass concentration, in mg/m<sup>3</sup>  
VE = visible emission opacity, in %

CAM Plan Performance Indicator No. 1: 3-hr Opacity Correlation

(a) Performance Indicators and measurement approaches:

Continuous Opacity Monitor (COM). Opacity data is measured and recorded by a certified opacity monitoring system. The three- hour block average opacity will be maintained below a maximum opacity level to demonstrate continuous compliance with the applicable three- hour PM emission limit.

(b) Indicator Range. Three-hour block average opacity will be maintained at less than 20%. Any opacity average less than this value will be considered a reasonable surrogate indicator of PM standard compliance.

(c) Performance Criteria: The COM meets the performance criteria for installation and operation as specified in 40 CFR Part 75, Appendix B.

Data Representativeness: COM data will be collected and validated in accordance with 40 CFR Part 75.

Verification of Operational Status: COM data availability requirements are continuous data availability excluding audit and check periods and malfunctions that are corrected within two hours each day.

QA/QC Practices/ Criteria: COM QA/QC procedures are consistent with the requirements of the applicable 40 CFR Part 75, Appendix B.

Monitoring Frequency: Opacity is measured on a continuous basis with the exception of malfunction or periods when the fans are off and there is no flame in the boilers or during periods of start-up and shutdown. Data from the ESP power management system will be used to indicate normal ESP performance during QA/QC periods or monitor malfunction periods.

Data Collection Procedures: Opacity data is collected on a certified DAS and archived for at least five years.

Averaging Period: One-minute average data is collected and scored. Three-hour block average are calculated and stored based on the minute by minute data for use as a compliance surrogate for Method 5 based PM mass emission limits.

CAM Plan Performance Indicator No. 2: ESP Power Management System Alarm

(a) Performance Indicators and Monitoring approach:

Audible and visible alarm integrated with the power management system for the ESP. Operator will oversee Unit's operation and react as appropriate to control system alarms.

(b) Indicator Range:

The activation of the alarm indicates possible operation of the ESP outside its normal operating conditions.

(c) Performance Criteria:

The operation of the power management system is continuously monitored.

Data Representativeness: The alarm points are set to provide the operators with an early warning of potential ESP malfunction.

Verification of Operational Status: Continuous monitoring will detect deviations from normal operating condition of the power management system.

QA/QC Practices/ Criteria: Calibration, maintenance and operation of the power management system in accordance with established specifications.

Monitoring Frequency: The power management system parameters will be monitored and recorded at least four times within each operating hour.

Data Collection Procedures: The power management parameters are recorded using the power management system DAS, and are archived for at least 90 days electronically. Hard copy of event data will be stored for five years.

Averaging Period: The power management system alarm settings are set to the power management system OEM guidelines. So long as the ESP is being operated normally, the primary indicator (opacity) will be relied upon to indicate continuous compliance with the PM standard.

**Compliance Assurance Monitoring (CAM) Protocol for Unit 3:**

The purpose of this protocol is to outline procedures for the development, verification, operation, and ongoing maintenance of a continuous monitoring approach sufficient to demonstrate a reasonable assurance that ESP unit C03, used to control the PM emissions respectively from source 033 operate in compliance with the PM emission limit of 0.1 lb/MMBtu in 25 Pa. Code 123.11.

CAM Plan Performance Indicator No. 1: ESP Power Management System Alarm

(a) Performance Indicators and Monitoring approach:

Audible and visible alarm integrated with the power management system for the ESP. Operator will oversee Unit's operation and react as appropriate to control system alarms.

(b) Indicator Range:

The activation of the alarm indicates possible operation of the ESP outside its normal operating conditions.

(c) Performance Criteria:

The operation of the power management system is continuously monitored.

Data Representativeness: The alarm points are set to provide the operators with an early warning of potential ESP malfunction.

Verification of Operational Status: Continuous monitoring will detect deviations from normal operating condition of the power management system.

QA/QC Practices/ Criteria: Calibration, maintenance and operation of the power management system in accordance with established specifications.

Monitoring Frequency: The power management system parameters will be monitored and recorded at least four times within each operating hour.

Data Collection Procedures: The power management parameters are recorded using the power management system DAS, and are archived for at least 90 days electronically. Hard copy of event data will be stored for five years.

Averaging Period: The power management system alarm settings are set to the power management system OEM guidelines.

**25 Pa Code Sections §§145.201-145.233, Subchapter D**

These sections were adopted by PA DEP on April 11, 2008 and became effective on April 12, 2008. These requirements addressed the requirements of EPA's Clean Air Interstate Rule (CAIR) with some requirements specific to emission sources in Pennsylvania. These conditions superseded the requirements in both the PA Code and also the Federal Code of Regulations which comprised the default CAIR program for Pennsylvania. The requirements in this subchapter, as well as the remaining applicable federal requirements, are known as "PA CAIR." EPA announced final acceptance of these requirements as a revision to the State Implementation Plan (SIP) for the Commonwealth of Pennsylvania on December 10, 2009.

On December 23, 2008, the US Court of Appeals for the DC Circuit decided that EPA had exceeded its authority under the Clean Air Act in adopting CAIR. The court decision remanded the CAIR rule, and required EPA to develop a rule within a reasonable time, under court guidelines to replace it. However, the CAIR rule was not vacated by this decision. Until the CAIR was replaced, its implementation, including review of modifications of the federal requirements allowed by states, would continue. This allowed EPA to review and approve the requirements for PA CAIR after the date that the CAIR Rule was remanded.

On July 6, 2011, EPA finalized the Cross-State Air Pollution Rule (“CSAPR” or “Transport Rule”) which was intended to replace CAIR and achieve greater reasonable progress towards the goal of achieving natural visibility conditions in Class I areas than the source-specific BART, in those states covered by the Transport Rule. Within this proposed rule, EPA stated that it anticipates the Transport Rule will result in greater emission reductions overall than CAIR. This rule had an effective date of January 1, 2012 and would have replaced the requirements of PA specific CAIR. However, the United States Court of Appeals for the D.C. Circuit issued an order granting a motion to stay CSAPR on December 30, 2011. Per this order, “Respondent [EPA] is expected to continue administering the Clean Air Interstate Rule pending the court’s resolution of these petitions for review.” Final action has not yet been taken on these proposals. Therefore, at this time the Pennsylvania specific rule for CAIR remains in effect and CAIR NO<sub>x</sub> and SO<sub>2</sub> Trading Programs of 25 Pa Code Subchapter D, Sections §§145.201-145.223 and 40 CFR Part 97 Federal NO<sub>x</sub> Budget Trading Program and CAIR NO<sub>x</sub> and SO<sub>2</sub> Trading Program have been incorporated into the Title V Operating Permit.

Due to the applicability of 25 Pa Code Sections §§145.201-145.233, Subchapter D, the NO<sub>x</sub> allowance requirements in 25 Pa Code Sections §§123.101-123.121 and the NO<sub>x</sub> Budget Trading Program in 25 Pa Code Sections §§ 145.1- 145.100 Subchapter A have been removed from the Title V operating permit.

#### **40 CFR Part 51 Subpart P- Requirements for Preparation, Adoption, and Submittal, of Implementation Plans - Protection of Visibility**

The Regional Haze regulation in 40 CFR 51.308(e) requires state implementation plans (SIPs) to contain emission limits representing Best Available Retrofit Technology (BART) for certain facilities that may reasonably be anticipated to cause or contribute to visibility impairment at a Class I area. A BART-eligible EGU is one that has the potential to emit 250 tons or more of a visibility-impairing air pollutant (SO<sub>x</sub>, NO<sub>x</sub> or PM) and was put in place between August 7, 1962 and August 7, 1977.

This subpart was amended on July 6, 2005, and October 13, 2006. Per 40 CFR 51.308(e) (4), “A State that chooses to meet the emission reduction requirements of the Clean Air Interstate Rule (CAIR) by participating in one or more of the EPA-administered CAIR trading programs for SO<sub>2</sub> and NO<sub>x</sub> need not require BART—eligible EGUs subject to such trading programs in the State to install, operate, and maintain BART for the pollutants covered by such trading programs in the State.” EPA has previously defined the relationship between BART and CAIR within its final rule for regional haze regulations and guidelines for BART determinations published on July 6, 2005. Within this final rule EPA confirmed its “final determination that CAIR achieves greater progress than BART and may be used by States as a BART substitute.” The analysis for this determination was presented on March 10, 2005, with the promulgation of the final CAIR. Pennsylvania has incorporated CAIR trading programs for annual NO<sub>x</sub>, ozone season NO<sub>x</sub>, and SO<sub>2</sub> by reference under 25 Pa. Code §145.204 as stated above. Therefore, the present permit condition of 0.1 lb/MMBtu along with the implementation of EGU CAIR requirements satisfies BART requirements for this facility.

#### **40 CFR Part 60 Subpart D – Standards of Performance for Fossil-Fuel-Fired Steam Generators**

This subpart applies to any fossil-fuel-fired steam generating unit that has a maximum heat input capacity of more than 250 MMBtu per hour and commenced construction or modification after August 17, 1971 and prior to September 18, 1978. Unit 1 commenced construction on August 4, 1969, and Unit 2 commenced construction on April 25, 1970. These two boilers have not been modified, under the NSPS definition in 40 CFR §60.2, since installation. Unit 3 commenced construction in 1977, which is prior to the date specified in 40 CFR 60, Subpart D. Therefore, Unit 3 at the Homer City Station is subject to the requirements of 40 CFR Part 60, Subpart D. Conditions derived from 40 CFR 60, Subpart D are included in the TVOP.

#### **40 CFR Part 60 Subpart Da – Standards of Performance for Electric Utility Steam Generating Units**

Per 40 CFR 60.40Da(a), this subpart applies to each electric utility steam generating unit capable of combusting more than 250 MMBtu/hr heat input of fossil fuel and for which construction, modification, or reconstruction is commenced after September 18, 1978. Unit 1 commenced construction on August 4, 1969, Unit 2 commenced construction on April 25, 1970 and Unit 3 commenced construction in 1977. Therefore, none of the Units at the Homer City are subject to the applicable requirements of this subpart.

#### **40 CFR Part 60 Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units**

This subpart applies to any fossil-fuel-fired steam generating unit that has a maximum heat input capacity of more than 100 MMBtu per hour, less than 250 MMBtu per hour, and last commenced construction or modification after June 19, 1984, or oil fired oil-fired units with a heat input capacity greater than 250 MMBtu per hour and subject to Subpart D. Homer City has no boilers with a maximum heat input capacity of more than 100 MMBtu per hour and less than 250 MMBtu per hour. Therefore, no boiler at the Homer City is subject to the requirements of 40 CFR Part 60, Subpart Db.

#### **40 CFR Part 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units**

Subpart Dc is applicable to facilities with steam generating units constructed after June 9, 1989 with a minimum heat input capacity of 10 MMBTU/hour, and a maximum heat input capacity of 100 MMBTU/hour. However, this TVOP renewal does not include any auxiliary boilers that were installed after June 9, 1989. Accordingly, no boiler at the Homer City is subject to the requirements of 40 CFR Part 60, Subpart Db.

#### **40 CFR Part 60 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984**

The fuel oil storage tanks at Homer City were constructed prior to July 23, 1984. Therefore, no storage vessel at Homer City is subject to the requirements of 40 CFR Part 60, Subpart Kb.

**40 CFR Part 60 Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines**

The emergency generators are powered by 855-bhp and 800-bhp diesel engines which are stationary compression ignition internal combustion engine. Also, the emergency firewater pump is powered by a 330-bhp diesel engine. For engines with cylinder displacements of less than 30 liters per cylinder, Subpart III applies to engines that have a model year of 2007 or later. These engines both have cylinder displacements of less than 30 liters per cylinder and are older than 2007. Therefore, the engines at Homer City are not subject to the requirements of 40 CFR Part 60, Subpart III.

**40 CFR Part 63 Subpart Q – National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers**

This Subpart is applicable to Major Sources of HAPs with cooling towers that use chromium based water treatment chemicals. The cooling towers at Homer City do not use chromium based water treatment chemicals. Therefore, this Subpart does not apply to the facility.

**40 CFR Part 63, Subpart ZZZZ- National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines**

The applicability of 40 CFR 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions has been evaluated. Finalized on June 15, 2004, this subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations. This facility is major for HAPs and operates 7 RICE.

There are numerous subcategories included in Subpart ZZZZ. The final rule includes specific requirements for each subcategory. Applicability requirements are based on age (new, existing, or reconstructed), size (numerous classifications), type (compression ignition, 2 stroke lean burn, 4 stroke lean burn, 4 stroke rich burn), and use (emergency, non-emergency, black start). Subpart ZZZZ establishes emission limitations and/or work practice standards for each of these source categories. Requirements include reducing formaldehyde emissions, reducing CO emissions, maintaining catalyst at prescribed pressure drop and temperatures for those units equipped with NSCR, and performing engine maintenance such as oil changes, inspection of air cleaners, belts, hoses, and spark plugs. In general, new and reconstructed, large, non-emergency engines (>500 bhp) at major HAP emitting facilities have more stringent requirements than existing, emergency, or smaller engines. Subpart ZZZZ also establishes testing, monitoring, recordkeeping, and reporting requirements.

The fire pump included under Source ID: 112 is subject to the requirements of RICE MACT codified at 40 CFR Part 63 Subpart ZZZZ. The facility shall demonstrate compliance with the requirements of this rule on or before May 3, 2013.

#### **40 CFR Part 75- Continuous Emissions Monitoring (CEM)**

The purpose of this part is to establish requirements for the monitoring, recordkeeping, and reporting of sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), and carbon dioxide (CO<sub>2</sub>) emissions, volumetric flow, and opacity data from affected units under the Acid Rain Program. In addition, this part sets forth provisions for the monitoring, recordkeeping, and reporting of NO<sub>x</sub> mass emissions with which EPA, individual States, or groups of States may require sources to comply in order to demonstrate compliance with a NO<sub>x</sub> mass emission reduction program, to the extent these provisions are adopted as requirements under such a program. Homer City is subject to 40 CFR 75 and maintains a CEM for each boiler.

#### **40 CFR Part 72, Subpart A- Acid Rain Program Provisions**

The purpose of this part is to establish certain general provisions and the operating permit program requirements for affected sources and affected units under the Acid Rain Program, pursuant to Title IV of the Clean Air Act. Per § 72.6 Applicability “(a) Each of the following units shall be an affected unit, and any source that includes such a unit shall be an affected source, subject to the requirements of the Acid Rain Program: (1) A unit listed in Table 1 of §73.10(a) of this chapter. §73.10(a) Phase I allowances states that The Administrator will allocate allowances to the compliance account for each source that includes a unit listed in Table 1 of this section in the amount listed in column A to be held for the years 1995 through 1999.” Units 1, 2, and 3 at Homer City are listed in Table 1 and thus Subpart A does apply to the EGUs at Homer City.

#### **Testing Requirements**

For the initial Title V permit issuance (circa, 1996) periodic monitoring for compliance with the particulate emission standards established at Pa Code Title 25 § 123.11(a)(2) was typically accomplished through stack testing at least once during the term of permit (every five years). In accordance with the final report issued by DEP on December 22, 2010 entitled “Evaluation of Total Particulate Matter Emissions From Coal-Fired Electric Generation Units,” the Department now requires stack testing to demonstrate compliance with the allowable particulate rate from coal-fired EGU boilers to be conducted at least every two years. This requirement has been added to the proposed Operating Permit, along with standardized EGU testing language.

With the promulgation of a PM<sub>2.5</sub> standard, and the development of a refined test method (OTM-028) for fine particulate, the Department wanted information regarding PM<sub>2.5</sub> emissions from the largest sources of PM<sub>2.5</sub>; coal-fired and waste coal-fired electric generating units (EGUs). On January 30, 2009, the owners/operators of 34 coal-fired electric generating units (EGU) and waste coal-fired power plants were notified in writing requesting that source testing for condensable and filterable particulates should be completed by June 30, 2009. Homer City Station (32-00055) was included. Results of data collected as indicate that: CFB EGUs are averaging total particulate at 0.024 lbs/MMBTU with the filterable portion at 0.016 lb/MMBtu (68% of total) and the condensable portion at .008 lb/MMBtu (32% of total), pulverized coal fired EGUs without scrubber controls are averaging 0.114 lb/MMBtu for total particulate with 0.041 lb/MMBtu for the filterable portion (36% of total) and 0.073 lb/MMBtu for the

condensable portion (64%), and pulverized coal-fired EGUs with scrubber controls are averaging 0.037 lb/MMBtu for total particulate with 0.025 lb/MMBtu for the filterable portion (67% of total) and 0.012 lb/MMBtu for the condensable portion (33%).

As demonstrated by the stack testing initiative of 2009, emissions of filterable plus condensable particulate matter from most FGD controlled units were a fraction of the NSPS (0.03) and a small percentage of the SIP standard (0.1). To provide additional quantification of filterable plus condensable particulate emissions, I recommend that testing for filterable PM10, filterable PM2.5 and condensable particulate also be performed every two years. This additional particulate testing requirement also has been added to the proposed Operating Permit. This condition requires testing for filterable PM10, filterable PM2.5, and condensable particulate emissions, also at intervals of every two years, using EPA Test Methods 201A and 202, or Department approved equivalent.

#### **40 CFR 68 Subpart B Risk Management Plans**

This rule outlines requirements for risk management plans pursuant to Section 112(r) of the Clean Air Act. Applicability of the subpart is determined based on the type and quantity of chemicals stored at a facility. Permittee uses anhydrous ammonia in the SCR Systems installed on Units #1, #2 and #3. In accordance with 40 CFR § 68.130, Table 1, the storage onsite of more than 10,000 pounds of anhydrous ammonia makes this facility subject to the Chemical Accident Prevention Provisions found at 40 CFR Part 68. Therefore, in accordance with 40 CFR § 68.10(a)(3), the owner/operator shall comply with all applicable requirements of 40 CFR Part 68. At this time, DEP has not received delegation from EPA of this program. Owner/operator is required to submit a Risk Management Plan developed in accordance with 40 CFR 68, Subpart G to both DEP and EPA.

#### **Miscellaneous Requirements**

Additional conditions included in this TVOP are from PA Code Title 25, Sections 121 through 145 as well as appropriate testing, emission reduction, work practice standards, monitoring, recordkeeping and reporting requirements.

#### **Active Enforcement**

The Department, the United States, and other states are currently engaged in litigation in federal court against EME Homer City Generation, L.P. et al, in Commonwealth of Pennsylvania, Department of Environmental Protection, et al., v. EME Homer City Generation, L.P. et al., Docket Nos. 11-4406, 11-4407 and 11-4408, United States Third Circuit Court of Appeals ("Litigation") concerning, among other topics, the applicability of PSD and New Source Review requirements to the Homer City Power Plant based on changes that were made on the units at that station. In light of this pending litigation, the Department reserves its right to establish additional requirements for the Homer City Power Plant based on the application of PSD and/or New Source Review requirements as necessary to reflect the outcome of the Litigation.

This Title V Operating Permit shall not be construed as barring, diminishing, adjudicating or in any way affecting any pending or future legal, administrative or equitable rights or claims,

actions, suits, causes of action, or demands that the Department may have against EME Homer City Generation, L.P. et al., including but not limited to any enforcement action authorized by applicable State or federal law. The approval and provisions of this Title V Operating Permit shall not be construed to resolve, adjudicate, limit, waive, or affect in any way any other litigation involving the applicability of Best Available Technology, PSD, New Source Review, or New Source Performance Standards to the Homer City Power Plant.

### **Special Regulations**

In addition to state SIP and plan approval/operating permit requirements, the Homer City facility is subject to the following federal regulations:

- 40 CFR Part 73 Sulfur Dioxide Allowance System
- 40 CFR Part 76 Acid Rain Program; Nitrogen Oxides Emission Reduction Program

These requirements have been incorporated into the proposed Title V Operating Permit by reference.

### **Operation and Flexibility**

The Title V permit may include provisions to allow a permitted facility to make certain changes without requiring a permit revision. Homer City has requested the flexibility of increasing emissions by the de minimis levels specified in 25 Pa. Code §127.449(d) and the installation of the minor sources listed in 25 Pa. Code §127.449(e). These provisions are specified in the Title V permit. No alternate operating scenarios were proposed by Homer City.

### **Emissions and Control Equipment:**

Electricity is generated at this facility from the combustion of pulverized bituminous coal in three dry bottom, tangentially-fired, boilers. Two Foster Wheeler boilers (Unit 1 & 2) were installed in 1969 and 1970 and are rated at 6,792 MMBtu/hr each. One Babcock and Wilcox boiler (Unit 3) was installed in 1977 and is rated at 7,260 MMBtu/hr. Each boiler utilizes low NO<sub>x</sub> burners with over fire air and is controlled by anhydrous ammonia injection with selective catalytic reduction (“SCR”) and an electro-static precipitator (“ESP”). Unit 3 alone is currently also controlled by a wet FGD scrubber. Net electrical generating capacity of this power plant is 1,884 MW. Other air contamination sources at this facility include auxiliary boiler fired by No. 2 fuel oil, emergency diesel generators, fire pump diesel engines, plant space heaters fired by No. 2 fuel oil, gasoline and diesel storage tanks, a coal preparation plant, limestone and gypsum handling, and on-site ash disposal.

Facility-wide actual emissions reported for the 2011 calendar year include approximately 183,595.9 tons of SO<sub>x</sub>, 9,026.1 tons of NO<sub>x</sub>, 1,881.1 tons of PM<sub>10</sub>, 910.6 tons of CO, 1182.8 tons of PM<sub>2.5</sub>, 745.0 tons of hydrochloric acid, 67.0 tons of hydrofluoric acid, 16.8 tons of VOC, 88.7 tons of ammonia, 0.40 tons of lead, and 0.0994 tons of mercury.

Emission rates of NO<sub>x</sub>, SO<sub>x</sub>, and CO<sub>2</sub> from Units 1, 2, and 3 are monitored through continuous emission monitoring systems (“CEMS”). Opacity from Units 1 and 2 is monitored through continuous opacity monitoring systems (“COMS”). PM emissions will be demonstrated by testing every two years per Homer City Generating Station’s current Title V operating permit. Post control emission rates of PM, PM<sub>10</sub>, PM<sub>2.5</sub>, HCl, VOC, H<sub>2</sub>SO<sub>4</sub>, fluorides, lead, and mercury will also be demonstrated by stack testing.

Table 1 below shows the facility wide potential to emit for Homer City.

**Table 1: Potential to Emit (PTE) Summary for Homer City**

Pollutant	Emission Rate (tpy)	Basis
SO <sub>2</sub>	232,868	CEMs for Units 1,2, &3; AP-42 for other sources
NO <sub>x</sub>	40,790	TV limits for Units 1,2, &3; AP-42 for other sources
CO	1,838	AP-42 for all sources
VOCs	154	TV limits for Units 1,2, &3; AP-42 for other sources
PM	10,014	TV limits for Units 1,2, &3; AP-42 for other sources
Ammonia	389	TV limits for Units 1,2, &3
HCL	3,181	Stack test plus 20% for conserve.; EPRI emission factors for units 1 & 2
HF	298	Stack test plus 20% for conserve.; EPRI emission factors for units 1 & 2
Pb	0.8	EPRI emission factors for Units 1,2, &3; AP-42 for other sources
Hg	0.5	Stack test plus 20% for conserve. for Units 1,2, &3
HAPs (does not include HCL, HF & Hg)	25	EPRI factors for metal HAPs from Units 1,2, &3; AP-42 metal HAPs for other sources
CO <sub>2</sub> e	18,914,637	CO <sub>2</sub> from Units 1,2, &3- CEMs;N <sub>2</sub> O & CH <sub>4</sub> from Units 1,2, &3 – GHG mandatory reporting rule; AP-42 for other sources

**Conclusions and Recommendations:**

Homer City has met the regulatory requirements associated with this application submittal. The attached permit reflects the applicable regulatory requirements associated with this facility. I recommend that the proposed Title V Renewal Operating Permit be issued for this site.