



# EASTERN KENTUCKY UNIVERSITY

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January 30, 2017

Mr. Eric Eisiminger, Regional Office Supervisor  
KY Division for Air Quality  
Frankfort Regional Office  
300 Sower Blvd. 1<sup>st</sup> Floor  
Frankfort, KY 40601

U.S. EPA Region 4  
Air Enforcement Branch  
Atlanta Federal Center  
61 Forsyth St. SW  
Atlanta, GA 30303-8960

RE: Annual Compliance Certification - DEP 7007CC  
January 1, 2016 thru December 31, 2016  
Eastern Kentucky University, Source ID No. 21-151-00007  
Permit No. V-14-004

To Whom It May Concern,

As required by this facility's current air permit, we are submitting the attached annual Compliance Certification Form (DEP 7007CC).

Detailed data sheets related to process and production data are maintained at the facility and will be made available upon your request. We have prepared and sent under the semi-annual monitoring report our summary checklist of daily, weekly, and monthly air permit monitoring data. The actual daily log sheets are archived in either or both hardcopy at our heat plant and as softcopy on a shared drive maintained by EKU Information Technology, and can also be made available upon request.

Please contact me or Bill Rhodes, the Assistant Director of Environmental Compliance and Energy Management, if you have any questions.

Sincerely,

Paul Gannoe  
Associate Vice President, ECU Facilities Services & Capital Planning

cc: Ron Mink  
Barry Poynter  
Bill Rhodes  
Associate Director, Mechanical & Electrical  
Vice President of Financial Affairs & Administration  
Assistant Director of Environmental Resources & Energy Management  
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Enclosure: DEP 7007CC





## 8) IDENTIFICATION OF EMISSION UNITS

8a)(1) **Emission Units in Compliance.** The following emission units are in compliance with applicable requirements such as emission standards, emission control requirements,

Coal Fired Indirect Heat Exchangers: Page 2ff						
Emission Point ID#	Emission Unit ID#	Permit Condition or Applicable Regulation	Emission Unit Description	Permit Limit	Actual Emissions	Method used for Determining Compliance & whether continuous or intermittent <i>(such as test methods, monitoring procedures, recordkeeping and reporting)</i>
	EU 02 EU 04	Section B.1.a 40 CFR 63, Subpart JJJJJ	Coal Fired Boilers	9 Tons calculated HCl emissions in any 12 month period	Max 12 month rolling total was 2.36 tons in 2016	Compliance based on monthly log of pro-rated coal usage in each boiler by steam production and calculated HCl using Title V EF's for each of the three boilers.
	EU 02 EU 04	Section B.1.b 40 CFR 63.11201(d)	Coal Fired Boilers	Minimize Startup and Shutdown		By signature of this compliance certification report.
	EU 02 EU 04	Section B.1.c 40 CFR 63.11201(b)	Coal Fired Boilers	One-time energy assessment		Assessment dated 3/21/14 by Moore Ventures on file and available for review.
	EU 02 EU 04	Section B.1.d 40 CFR 63.11205(a)	Coal Fired Boilers	Operate and maintain to minimize emissions		Review of operation and maintenance records and inspection of boilers.
	EU 02 EU 04	Section B.1.e 40 CFR 63.11205(b)	Coal Fired Boilers	Applicable emissions limits		Facility keeps PM and maintenance records on file for all equipment, including control equipment records, in Heat Plant office and are available on request.
	EU 02 EU 04	Section B.1.f 40 CFR 63.11201(c)	Coal Fired Boilers	Maintain equal or less than 10% opacity daily block average	No visible emissions over 10% observed during 2016	Conducted VE daily on Heat Plant stack when coal fired boilers were operating. Conducted EPA Method 9 once a week or if VE > 0. Any excursions reported electronically to Kentucky Department of Air Quality. December excursions were documented but not reported due to retirement of previous foreman and lack of communication to new one, which has been corrected.
	EU 02 EU 04	Section B.1.g 40 CFR 63.11210(c)	Coal Fired Boilers	Demonstrate initial compliance by 3/21/14		Assessment dated 3/21/14 by Moore Ventures on file and available for review.
	EU 02 EU 04	Section B.2.a 401 KAR 61:015 Section 4 - PM	Coal Fired Boilers	0.35 lbs PM/MMBtu	Max of 0.031 lbs PM/MMBtu	Compliance based on stack test conducted on February 21 and 23, 2012 and on heat content of coal deliveries in 2016. Highest calculated value was 0.012 lbs PM/MMBtu.

EU 02 EU 04	Section B.2.b and B.2.c Opacity < 40% Conduct Visual Emissions of bag house stack and EPA Method 9 if emissions are seen	Coal Fired Boilers	40% opacity unless blowing soot; then 60% opacity for not more than 6 minutes in any 60 consecutive minutes	No visible excursions in 2016	Conducted VE daily on Heat Plant stack when coal fired boilers were operating. Conducted EPA Method 9 once a week or if VE > 0. Report excursions to DAQ if VE > 40 or if VE > 60 when blowing soot. Any excursions reported electronically to Kentucky Department of Air Quality. Shut down in January for ID Fan Inlet Cone repair. Shut down in December due to high ambient temperatures and re-started with smaller Boiler #2.
EU 02 EU 04	Section B.2.d 401 KAR 61:015 Section 5(1) SO <sub>2</sub> limits	Coal Fired Boilers	5.98 lbs SO <sub>2</sub> per million BTU	0.85 - 1.06 lb/MMBtu	Compliance demonstrated through use of following formula; SO <sub>2</sub> emission rate = [38 X S (lb/ton)] / [ coal heating value (MMBtu/Ton)] where S = % sulfur from coal analyses
EU 02 EU 04	Section B.2.e 40 CFR 63.11210(b) Mercury emissions	Coal Fired Boilers	not to exceed 2.2E-05 lb/MMBtu of heat input	2.2E-06	Fuel analysis according to 3.d. Testing Requirement
EU 02 EU 04	Section B.2.f 40 CFR 63.11201(a) CO emissions	Coal Fired Boilers	420 ppm by volume on a dry basis corrected to 3% O <sub>2</sub>		Maintain the operating load of each unit such that it does not exceed 110 percent of the average operating load recorded during the February, 2012 performance stack test.
EU 02 EU 04	Section B.4.a 401 KAR 61:015 Section 6(6) - Sulfur Dioxide Monitoring Representative Sampling of Coal Delivered	Coal Fired Boilers	Conduct sampling and analysis of fuel per delivery & maintain records		Log of coal batch analyses including percent sulfur, heat content, mercury and calculation of SO <sub>2</sub> maintained and available for inspection.
EU 02 EU 04	Section B.4.b 401 KAR 61:015 Section 6(3) Record Fuel Combustion Monthly	Coal Fired Boilers	Record fuel consumption monthly & obtain ash and heat content per shipment		Heat Plant Steam Output log showing coal and gas combusted maintained and available for inspection. Log of coal batch analyses including percent ash and heat content maintained and available for inspection.
EU 02 EU 04	Section B.4.c 401 KAR 52:020 Section 10 Opacity Monitoring Daily & Method 9 if VE > 0	Coal Fired Boilers	Conduct Visual Emissions (VE) daily and Method 9 if VE>0. If Method 9 cannot be performed, record why	No visible emissions over 10% observed during 2016	Conducted VE daily on Heat Plant stack when coal fired boilers were operating. Conducted EPA Method 9 if VE > 0. Report excursions to DAQ if VE > 40 or if VE > 60 when blowing soot. No coal stack excursions outside building a new fire or bag house cleaning.

	EU 02 EU 04	Section B.4.d 401 KAR 52:020 Section 10 Monitor fuel usage in tons/day	Coal Fired Boilers	Monitor coal usage in tons/day and determine HCl emissions per unit weekly		Truckload coal weight calibrated at the beginning of each heating season. Coal usage is logged by truckload when delivered to the coal silo. HCl limit monitored on a monthly basis per Section B.1.a and can be pro-rated weekly using steam production records on request.
	EU 02 EU 04	Section B.4.e 401 KAR 52:020 Section 10 Monitor and record bag house pressure drop continuously.	Coal Fired Boilers	Monitor bag house pressure drop		Three hour rolling average continuously monitored and recorded by boiler controls with alarm for excursions. Additionally monitored instantaneous bag house pressure drop and manually recorded nine times daily when operating. Pressure drop limit is 2.0 to 6.0 inches H <sub>2</sub> O per testing in February 2012 and manufacturer's recommendations.
	EU 02 EU 04	Section B.4.f 401 KAR 52:020 Section 10 Install audible bag house high low pressure alarm on 3 hour average limit	Coal Fired Boilers	Audible high / low bag house pressure alarms - 3 hour average		Boiler controls monitor 3 hour average and sound audible and visible alarm on high / low limits. Bag house limits set on instantaneous high / low bag house pressure drop.
	EU 02 EU 04	Section B.5.a 401 KAR 52:020 Section 10 Records Maintenance	Coal Fired Boilers	Records of weekly steam generated, fuel usage, sulfur content and heat content of each delivered shipment		Records of weekly steam generation, coal deliveries to the heat plant silo by shift truckloads and elemental analyses per delivery maintained and available for inspection.
	EU 02 EU 04	Section B.5.c 401 KAR 52:020 Section 10 Records Maintenance	Coal Fired Boilers	Records of daily VE and Method 9 if VE>0 kept in log book. If Method 9 cannot be performed, record why.		Visual Emissions measurements log maintained and available for inspection.
	EU 02 EU 04	Section B.6.a 401 KAR 52:020 Section 10 Reporting Requirement; Fuel, Sulfur, & Heat Content	Coal Fired Boilers	Reporting Requirement		Provided semi-annual and annual reporting of fuel usage, sulfur content, and heat content.
	EU 02 EU 04	Section B.6.b 401 KAR 52:020 Section 10 Reporting of Opacity Excursions	Coal Fired Boilers	Reporting Requirement		Electronic notification of excursions above the opacity standard and electronic notification of startups and shutdowns.

	EU 02 EU 04	Section B.6.c 40 CFR 63.11214(a) Tune-up of each boiler	Coal Fired Boilers	Reporting Requirement		By signature of this compliance certification report.
	EU 02 EU 04	Section B.6.d 40 CFR 63.11214(c) One-time energy assessment	Coal Fired Boilers	Reporting Requirement		By signature of this compliance certification report.
	EU 02 EU 04	Section B.6.d 40 CFR 63.11223(b) Conduct a tune-up of the boiler every five (5) years.	Coal Fired Boilers	Reporting Requirement		By signature of this compliance certification report.
	EU 02 EU 04	Section B.6.e 40 CFR 63.11222(b) Tables 1 and 3	Coal Fired Boilers	Report each instance emission limit not met		Electronic notification of excursions above emissions limits.
	EU 02 EU 04	Section B.7.a bag house operated when coal fired boilers are operated	Coal Fired Boilers	Operation Requirements		Bag house operated when coal fired boilers are operated. Bag house maintained and operated in accordance with manufacturer's specifications, and/or standard operating practices and DP limits alarmed and monitored 24/7.
	EU 02 EU 04	Section B.7.b Control Equipment Maintenance Records	Coal Fired Boilers	Control Equipment Maintenance		Facility keeps PM and maintenance records on file for all equipment, including control equipment records, in Heat Plant office and are available on request
<b>Natural Gas Fired Indirect Heat Exchangers - Subject to NSPS: Title V Permit Page 14ff</b>						
	EU 06 EU 56	Section B.2.a 401 KAR 59:015 Section 4 Particulate Emissions	Natural Gas Fired Boilers	EU 06 0.10 lb/mmBTU EU 56 0.30 lb/mmBTU		Unit assumed to be in compliance (per permit condition statement) when burning natural gas.
	EU 06 EU 56	Section B.2.b 401 KAR 52:020 Section 4(2) Opacity	Natural Gas Fired Boilers	20% opacity unless soot blowing which is 40% opacity in any 60 minutes		Unit assumed to be in compliance (per permit condition statement) when burning natural gas.
	EU 06 EU 56	Section B.2.c 401 KAR 59:015 Section 5(1) Sulfur Dioxide Emission	Natural Gas Fired Boilers	EU 06 0.8 lb/mmBTU EU 56 0.9 lb/mmBTU		Unit assumed to be in compliance (per permit condition statement) when burning natural gas.
	EU 06 EU 56	Section B.4 and B.5 40 CFR 60, Subprt Dc Monitor and Record Monthly Natural Gas Combusted	Natural Gas Fired Boilers	Monitor and Record Natural Gas Combusted		Heat Plant Steam Output log showing monthly gas combusted maintained and available for inspection. Source wide gas log showing monthly gas combusted maintained and available for inspection.
<b>Existing Natural Gas Fired Indirect Heat Exchangers: Page 16ff</b>						

EU 07 EU 08 EU 09 EU 10	Section B.2.a 401 KAR 61:015 Section 4 Particulate Emissions	Natural Gas Fired Boilers	0.95 lb/mmBTU 0.69 lb/mmBTU 0.66 lb/mmBTU 0.60 lb/mmBTU		Units are considered in compliance (per permit condition statement) when burning natural gas.
EU 07 EU 08 EU 09 EU 10	Section B.2.b 401 KAR 61:015 Section 4(3) Opacity	Natural Gas Fired Boilers	40% opacity		Units are considered in compliance (per permit condition statement) when burning natural gas.
EU 07 EU 08 EU 09 EU 10	Section B.2.c 401 KAR 61:015 Section 5(1) Sulfur Dioxide Emissions	Natural Gas Fired Boilers	5.81 lb/mmBTU 4.25 lb/mmBTU 4.04 lb/mmBTU 3.69 lb/mmBTU		Units are considered in compliance (per permit condition statement) when burning natural gas.
EU 07 EU 08 EU 09 EU 10	Section B.4 and B.5 401 KAR 61:015 Section 6 Source Wide Natural Gas Combusted	Natural Gas Fired Boilers	Monitor and Record Natural Gas Combusted		Source wide gas log showing monthly gas combusted maintained and available for inspection.
<b>New Natural Gas Fired Indirect Heat Exchangers: Page 18ff</b>					
EU 11-42 and EU 44-55	Section B.2.a 401 KAR 59:015 Section 4(1)(b) Particulate Emissions	Natural Gas Fired Boilers	EU 11-24 0.4 lb/mmBTU EU 25-55 0.3 lb/mmBTU		Units are considered in compliance (per permit condition statement) when burning natural gas.
EU 11-42 and EU 44-55	Section B.2.b 401 KAR 59:015 Section 4(2) Opacity	Natural Gas Fired Boilers	40% opacity		Units are considered in compliance (per permit condition statement) when burning natural gas.
EU 11-42 and EU 44-55	Section B.2.c 401 KAR 59:015 Section 5(1)(b) Sulfur Dioxide Emission	Natural Gas Fired Boilers	See Table; Permit Page 19		Units are considered in compliance (per permit condition statement) when burning natural gas.
EU 11-42 and EU 44-55	Section B.4 and B.5 401 KAR 52:020 Section 10 Source Wide Natural Gas Combusted	Natural Gas Fired Boilers	Monitor and Record Natural Gas Combusted		Source wide gas log showing monthly gas combusted maintained and available for inspection.
<b>Paint Spray Booth: Page 21</b>					

	EU 135	Section B.2.a 401 KAR 59:010 Section 3(2) Particulate Emissions	Paint Spray Booth	PM Limit 2.34 lb/hour based on 3 hour average	0 gal	Deemed to be in compliance if 0.5 gal/hr not exceeded and booth is operated according to manufacturer's procedure. Paint Shop spray booth log maintained for product, amount and duration of spray time to demonstrate compliance.
	EU 135	Section B.2.b 401 KAR 59:010 Section 3(1) Visible Emissions	Paint Spray Booth	20% opacity	0 gal	Deemed to be in compliance if 0.5 gal/hr not exceeded and booth is operated according to manufacturer's procedure. Paint Shop spray booth log maintained for product, amount and duration of spray time to demonstrate compliance.
	EU 135	Section B.4 and B.5 401 KAR 52:020 Section 10 Monitor Coating Amts Used Monthly	Paint Spray Booth	Monthly Record of coating use and hours	2016 zero gallons sprayed	Paint Shop spray booth log maintained for product, amount and duration of spray time per use.
<b>Existing Diesel Fired Emergency Generators: Page 22ff</b>						
	EG 20-45	Sections B.4.a, B.4.b, B.5.a and B.5.b 401 KAR 52:020 Section 10 Diesel Fuel Con- sumed by each generator; Hours of operation of each generator	Diesel Fired Generators	Monitor and Record Diesel Fuel Consumed by each genera- tor; hours of Operation of each generator		Records of monthly diesel fuel consumed and total hours of operation maintained and available for inspection.
<b>New Diesel Fired Emergency Generators: Page 24ff</b>						
	EG 46 EG 47	Section B.1.a 40 CFR 60.4207(b) Diesel Fuel	Diesel Fired Generators	Meets require- ments of 40 CFR 60.4211(a)		Supplier provided copy of MSDS for Marathon No. 2 Ultra Low Sulfur Diesel Dyed 15 ppm Sulfur Max with 2-5% Biodiesel fuel.
	EG 46 EG 47	Section B.1.c.iii 40 CFR 60.4211(f) Non-Emergency Run Time	Diesel Fired Generators	Maximum of 50 hours	5.4 hours max	Records of monthly total hours of operation maintained and available for inspection.
	EG 46 EG 47	Section B.2.a 40 CFR 60.4205(b) 40 CFR 60.4202(a)(2) 40 CFR 89.112 Emissions	Diesel Fired Generators	See Table; Permit Page 26		Units are considered in compliance (per permit condition statement) by purchasing an engine certified to the emission standards and installed and configured to the manufacturer's specifications. (Performing Arts and New Science)
	EG 46 EG 47	Section B.5 40 CFR 60.4214(b) Emergency and Non- Emergency Run Time	Diesel Fired Generators	Time of Operation and Reason for Operation		Records of monthly total hours of operation maintained and available for inspection.



Natural Gas Fired Emergency Generators: Page 28ff						
	EG 1 - EG 19	Section B.4 and B.5 401 KAR 52:020 Section 10 Source Wide Natural Gas Combusted	Natural Gas Fired Generators	Monitor and Record Natural Gas Combusted		Source wide gas log showing monthly gas combusted maintained and available for inspection.
<b>Other: Page 30ff</b>						
	Section C Insignificant Activities	401 KAR 63:010 Record Coal delivered and Ash disposed	Coal and Ash Handling	Record coal deliveries and ash disposed		Records of coal deliveries and ash removal maintained and available for inspection.
	Section C Insignificant Activities	401 KAR 61:020 Visible Emissions	Woodworking Shop	Monthly inspections and corrective action taken as needed		Monthly inspection log maintained and available for inspection.
	Section D Source Emission Limitations and Testing Requirements	Sections D.3 and D.4 Calculate source wide HAP and HAPs for compliance with 40 CFR 63 Subpart DDDDD	Coal Boilers, Natural Gas Boilers, Diesel Generators, Natural Gas Generators, Paint Booth, Misc. Source Wide HAPS	Single HAP 9 tpy, including HCl; Total HAPs 22.5 tpy	Less than 9 tpy and 22.5 tpy, respectively	Calculated HCl and HAPs based on formulas in Section D paragraphs 3 & 4. 12 month rolling HCl peak was 3.99 tons and 12 month rolling Total HAPs peak was 6.76 tons. Detail in Jul-Dec 2016 Semi-annual Report. Previous 3 year average used for July-December diesel generators to verify complete compliance.
	Section D Source Emission Limitations and Testing Requirements	Sections D.5 401 KAR 51:017 40 CFR 63 Subpart DDDDD Change in Supplier	Coal Fired Boilers	Notify Division 60 days prior to		No changes in supplier
All	All	Section F.1, 2, 5, 6, 7, 8 and 9 401 KAR 52:020 401 KAR 50:055 Title V Semi-Annual and DEP 7007CC Annual Reports	All	Compliance Reporting		Submitted summary monitoring reports by July 30 and January 30 to Regional Office and Annual Compliance Certification by January 30 to Regional Office and US EPA Region 4 Office (Atlanta)
All	All	Section F.10 Submit 401 KAR 52:020 KYEIS within 30 days of receipt of KYEIS by ECU	All	Compliance Reporting		Submitted KYEIS within 30 days of receipt at ECU (but not the KY DAQ mailing date or the date of the letter).

**8) IDENTIFICATION OF EMISSION UNITS (continued)**

**8a)(2) Emission Units in Compliance but Subject to Future Compliance Dates.** The following emission units, which are currently in compliance with all applicable requirements, will achieve compliance on a timely basis and maintain compliance with future compliance dates as they become applicable during the permit term.  
*If additional space is needed, attach and label as exhibit DEP7007CC 8a)(2)*

Emission Point ID#	Emission Unit ID#	Future Compliance Schedule	Emission Unit Description	Reason for Future Compliance Date

**8) IDENTIFICATION OF EMISSION UNITS (continued)**

**8b)(1) Emission Units Not in Compliance.** The following emission units were not in compliance with applicable requirements such as emission standards, emission control requirements, emission testing, court requirements, work practices, or enhanced monitoring, based on the compliance methods specified below.

*If additional space is needed, attach and label as exhibit DEP7007CC 8b)(1)*

Emission Point ID#	Emission Unit ID#	Permit Condition or Applicable Regulation	Emission Unit Description	Permit Limit	Actual Emissions	Method used for Determining Compliance <i>(such as test methods, monitoring procedures, recordkeeping and reporting)</i>
	EG 20-45	Sections B.4.a, B.4.b, B.5.a and B.5.b 401 KAR 52:020 Section 10 Diesel Fuel Consumed by each generator; Hours of operation of each generator	Diesel Fired Generators	N/A	N/A	record of monthly inspections
	EG 46 EG 47	Section B.1.c.iii 40 CFR 60.4211(f) Non-Emergency Run Time	Diesel Fired Generators	N/A	N/A	record of monthly inspections
	EG 46 EG 47	Section B.5 40 CFR 60.4214(b) Emergency and Non-Emergency Run Time	Diesel Fired Generators	N/A	N/A	record of monthly inspections
	EG 1 - EG 19	Section B.4 and B.5 401 KAR 52:020 Section 10 Source Wide Natural Gas Combusted	Natural Gas Fired Generators	N/A	N/A	record of monthly inspections

8) IDENTIFICATION OF EMISSION UNITS (continued)

8b)(2) Emission Units Not in Compliance. For the above listed emission units that were not in continuous compliance since the last reporting period, state the reasons for noncompliance. If additional space is needed, attach and label as exhibit DEP7007CC 8b)(2)

Emission Point ID#	Emission Unit ID#	Reason(s) for NonCompliance
	EG 20-45	Lapse in monthly inspections; inspector on medical leave and change in responsible personnel.
	EG 46 EG 47	Lapse in monthly inspections; inspector on medical leave and change in responsible personnel.
	EG 1 - EG 19	Lapse in monthly inspections; inspector on medical leave and change in responsible personnel.

9) SIGNATURE BLOCK

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

BY: Paul Gannoe  
AUTHORIZED SIGNATURE

30-Jan-17  
DATE

Paul Gannoe  
TYPED OR PRINTED NAME OF SIGNATORY

Director Facilities Services  
TITLE OF SIGNATORY