Missouri Department of Natural Resources
Air Pollution Control Program

PART 70
PERMIT TO OPERATE

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to operate the air contaminant source(s) described below, in accordance with the laws, rules, and conditions set forth here in.

Operating Permit Number: OP2010-060
Expiration Date: JUN 17 2015
Installation ID: 161-0006
Project Number: 2004-11-060

Installation Name and Address
Missouri University of Science and Technology
101 General Services Building
Rolla, MO 65409-0270
Phelps County

Parent Company's Name and Address
University of Missouri Curators
225 University Hall
Columbia, MO 65211

Installation Description:
The primary purpose of the installation is higher education and research. The supporting processes include power generation, heating of buildings, and petroleum storage. The power plant operates three coal fired boilers to generate energy and steam and is major for sulfur oxides (SOx). Emissions from this facility also consist of combustion emissions from the numerous natural gas-fired boilers located on campus.

JUN 18 2010
Effective Date

Director or Designee
Department of Natural Resources

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I. Installation Description and Equipment Listing

INSTALLATION DESCRIPTION

The primary purpose of the installation is higher education and research. The supporting processes include power generation, heating of buildings, and petroleum storage. The power plant operates three boilers to generate energy and steam. Boilers #3 and #4 are coal fired overfeed stoker boilers. Boiler #5 is a coal and wood chip fired spreader stoker boiler

Reported Air Pollutant Emissions, tons per year							
Year	Particulate Matter ≤ Ten Microns (PM-10)	Sulfur Oxides (SO_x)	Nitrogen Oxides (NO_x)	Volatile Organic Compounds (VOC)	Carbon Monoxide (CO)	Lead (Pb)	Hazardous Air Pollutants (HAPs)
2008	7.88	460.67	43.78	0.29	23.78	0.0002	1.21
2007	8.50	418.75	43.25	0.29	21.23	0.0002	1.65
2006	8.95	442.27	49.94	0.42	26.83	---	0.34
2005	10.58	445.04	46.52	0.41	26.01	0.02	1.21
2004	9.41	578.05	47.61	0.38	27.01	--	1.17
2003	12.37	558.97	57.53	1.41	86.10	--	6.02

EMISSION UNITS WITH LIMITATIONS

The following list provides a description of the equipment at this installation which emits air pollutants and which is identified as having unit-specific emission limitations.

Emission Unit #	Description of Emission Unit	Emission Point #
EU0010	Boiler #3	EP-01
EU0020	Boiler #4	EP-02
EU0030	Boiler #5	EP-03
EU0040	Boilers – Thomas Jefferson Hall	EP-13
EU0050	Boilers – Residential Hall One	EP-22
EU0060	Boilers - Havener Center	EP-23
EU0070	Boilers – Residential Hall Two	EP-24

EMISSION UNITS WITHOUT LIMITATIONS

The following list provides a description of the equipment which does not have unit specific limitations at the time of permit issuance.

Description of Emission Source

Natural Gas Fired Boiler at Rock Mechanics Building; 1.92 MMBtu/hr; Installed in 1986 (EP-16)
Natural Gas Fired Boiler at General Services Building; 1.469 MMBtu/hr; installed in 1996 (EP-17)
Natural Gas Fired Boilers at Bureau of Mines #1, 6.4 MMBtu/hr (EP-18)
Natural Gas Fired Boiler at Bureau of Mines #7; 1.457 MMBtu/hr;
Space Heating at Bureau of Mines #3, #4, #5, and #8, 1.13 MMBtu/hr, Natural Gas
Space Heating at Miner Golf Course - 0.115 MMBtu/hr, Natural Gas
Space Heating/Hot Water at Football Field House–1.942 MMBtu/hr, Natural Gas
Space Heating at Compressible Flow Lab - 0.25 MMBtu/hr, Natural Gas
Space Heating at Temporary Research Building - 0.3 MMBtu/hr, Natural Gas
Space Heating at Hazardous Materials Storage Building - 0.166 MMBtu/hr, Natural Gas
Space Heating at Nagogomi Building – 1.44 MMBtu/hr, Natural Gas
Space Heating Building D - 0.1 MMBtu/hr, Natural Gas
705 W. 14th (Eck House) - 0.168 MMBtu/hr, Fuel Oil
709 W. 14th (Murphy House) - 0.1 MMBtu/hr, Natural Gas
611 W. 11th (Mace House) - 0.084 MMBtu/hr, Fuel Oil
1606 Rolla St. (Lovett House) 1.1515 MMBtu/hr, Fuel Oil
Multicultural Center - 0.565 MMBtu/hr, Natural Gas
1304 N. Pine - 0.36 MMBtu/hr, Natural Gas
Round House (Fraternity Circle Dr.) – 1.0 MMBtu/hr, Natural Gas
808 W. 10th (Denny House) - 0.084 MMBtu/hr, Fuel Oil
Propane Spray Dryer at Ceramic Lab
Parts Washer
1,000 Gallon Propane Storage Tank, Chemistry Building, Installed 1972
500 Gallon Propane Storage Tank, Fulton Hall, Installed 1974
350 Gallon Diesel Storage Tank, General Services, Installed in 1962
3,000 Gallon Diesel Fuel Storage Tank, Power Plant, Installed in 1989
1,000 Gallon Propane Storage Tank, Physics Building, Installed in 1961
500 Gallon Propane Storage Tank, Materials Research, Installed Before 1979
250 Gallon Propane Storage Tank, Research, Installed in 1984
500 Gallon Propane Storage Tank, T.J. Hall, Installed in 1970
500 Gallon Propane Storage Tank, Golf Shop, Installed Before 1979
1,000 Gallon Propane Storage Tank, in storage General Services, Installed in 1968
350 Gallon Diesel Fuel Storage Tank, Compressor Flow Lab, Installed in 1968
275 Gallon Waste Oil Storage Tank, General Services, Installed Before 1979
250 Gallon Diesel Storage Tank, Physical Facilities, Installed Before 1979
250 Gallon Gasoline Storage Tank, Golf Course, Installed Before 1979
2,000 Gallon Fuel Oil Storage Tank, Rock Mechanics, Installed in 1997
Emergency Generator; 11.76 MMBtu/hr, Diesel (EP-04)
Coal/Wood Chip Receiving (EP-07, EP-10)
Coal Storage (EP-08)
Coal/Wood Chip Conveying (EP-09, EP-11)
Ash Handling System (EP-05)

Thomas Jefferson Hall Emergency diesel generator (IS-EM-01)
Butler Civil Emergency diesel generator (IS-EM-02)
Havener Center Emergency diesel generator (IS-EM-03)
Comp Science Emergency diesel generator (IS-EM-04)
Parker Hall Emergency diesel generator (IS-EM-05)
Emerson Hall Emergency diesel generator (IS-EM-06)
Mechanical Engineering Annex Emergency diesel generator (IS-EM-07)

DOCUMENTS INCORPORATED BY REFERENCE

These documents have been incorporated by reference into this permit.

1) APCP Construction Permit #0379-009
2) APCP Construction Permit #092000-006

II. Plant Wide Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

PERMIT CONDITION PW-01

10 CSR 10-6.065 *Operating Permits*
Voluntary Permit Limitation, 10 CSR 10-6.065(6)(C)2.A

Emission Limitation:

1.) The permittee shall emit less than 10 tons of any single hazardous air pollutant (HAP) in any consecutive 12-month period.
2.) The permittee shall emit less than 25 tons of combined HAPs in any consecutive 12-month period.

Monitoring:

1.) The permittee shall calculate the emissions of individual HAP each month and show that the total emissions of HAP from any consecutive 12-month period are below the 10 ton limit.
2.) The permittee shall calculate the emissions of combined HAP each month and show that the total emissions of HAP from any consecutive 12-month period are below the 25 ton limit.

Record Keeping:

1.) The permittee shall record the monthly total of individual and combined HAP emissions from this installation and the sum of the most recent consecutive 12-month totals in tons.
2.) These records shall be made immediately available for inspection to the Missouri Department of Natural Resources personnel upon request.
3.) These records shall be kept on-site for five years.

Reporting:

1.) The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the end of the month during which the records indicate that the source exceeded the emission limitation.
2.) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

III. Emission Unit Specific Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

Coal Fired Boilers #3, #4 and #5			
Emission Unit	Description	Manufacturer/ Model #	2006 EIQ Reference #
EU0010	Boiler #3 - 48.7 MMBtu/hr coal fired underfeed stoker boiler; Installed in 1957; MHDR = 2.2 tons/hour of coal; Particulate matter emission controlled by multiple cyclones.	Union O Type	EP-01
EU0020	Boiler #4 - 67.2 MMBtu/hr coal fired underfeed stoker boiler; Installed in 1962; MHDR = 3.1 tons/hour of coal; Particulate matter emissions are controlled with multiple cyclones. Modified in 2000 to allow for combustion of natural gas or coal.	Erie City Iron Works/96337	EP-02
EU0030	Boiler #5 - 67.1 MMBtu/hr coal fired spreader stoker boiler; Installed in 1983; MHDR = 3.1 tons/hour of coal and 7.5 tons/hour of woodchips; Particulate matter emissions are controlled with a baghouse.	Vogt/17152	EP-03

PERMIT CONDITIONS (EU0010 & EU0020) - 01

10 CSR 10-3.060 *Maximum Allowable Emissions of Particulate Matter from Fuel Burning Equipment Used for Indirect Heating*

Operational Limitation/Equipment Specifications:

1.) The permittee shall not emit particulate matter in excess of 17.05 lbs/hr for EP-01 (Boiler #3).
2.) The permittee shall not emit particulate matter in excess of 23.52 lbs/hr for EP-02 (Boiler #4).
3.) The cyclone shall be maintained such that the pressure drop remains in the normal operating range according to manufacturers specifications, whenever the emission unit is in operation.
4.) All instruments and control equipment shall be calibrated, maintained and operated according to the manufacture specifications and recommendations.

Monitoring:

Cyclone operation and maintenance:

1.) Read and record the air flow rate and the total static pressure drop across the cyclone at least weekly when the process is in operation. If the pressure drop falls out of the normal operating range, corrective action shall be taken as soon as practicable but within eight hours to return the pressure drop to normal.
2.) Weekly inspect the solids discharge valve for proper operation.
3.) Quarterly inspect the structural components including the cyclone ductwork and hoods for leaks and component failure.
4.) Annually:
    a) Check for leaks in the system to ensure the airflow from the dirty side doesn't infiltrate the clean side. Verify that the inlet and outlet ductwork is in good operating condition.
    b) Check the barrel and collecting tube for deposits and/or excess wear and clean/repair as needed.

c) Clean cyclone inlet vanes (ramps or spinners) and ensure they operate according to the manufacture specifications.
d) Maintain a written record of the observations, deficiencies, and any action resulting from the inspection.

5.) If leaks or abnormal conditions are detected the appropriate measures for remediation shall be initiated as soon as practicable within eight hours and completed as soon as practicable.

Record Keeping:

1.) The permittee shall document all pressure drop readings. (see Attachment A)
2.) The permittee shall maintain a written or electronic record of all inspections and any action resulting from the inspection (observations, deficiencies, calibration, etc.). (see Attachment C)
3.) Attachments A and C contain logs including these record keeping requirements. These logs, or an equivalent created by the permittee, must be used to certify compliance with this requirement.
4.) These records shall be kept for at least five years and shall be made available to either the Director upon written request or Department inspection personnel upon verbal request.

Reporting:

1.) The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined that the emission unit(s) exceeded the emission limitation(s) and/or pressure drop range listed above.
2.) Reports of any deviations from monitoring other than the pressure drop range, record keeping and reporting requirements of this permit condition shall be submitted semiannually, in the semi-annual monitoring report and annual compliance certification, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

PERMIT CONDITIONS (EU0010 & EU0020) - 02

10 CSR 10-6.220 *Restriction of Emissions of Visible Air Contaminants*

Emission Limitation:

1.) No owner or other person shall cause or permit emissions to be discharged into the atmosphere from any new source any visible emissions with opacity greater than 40%.
2.) Exception: A person may discharge into the atmosphere from any source of emissions for a period(s) aggregating not more than six (6) minutes in any 60 minutes air contaminants with opacity up to 60%.

Monitoring:

1.) The permittee shall conduct a visual emission observation on this emission unit once a month using the procedures contained in U.S. EPA Test Method 22. At a minimum, the observer should be trained and knowledgeable about the effects on visibility of emissions caused by background contrast, ambient lighting, observer position relative to lighting, wind and the presence of uncombined water. Readings are only required when the emission unit is operating and when the weather conditions allow. If no visible or other significant emissions were observed using these procedures, then no further observations would be required. For emission units with visible emissions perceived or believed to exceed the applicable opacity standard, the source representative would then conduct a Method 9 observation.
2.) Should a violation be observed, monitoring frequency will progress in the following manner:
   a.) Weekly observations shall be conducted for a minimum of eight (8) consecutive weeks after the date of the initial violation. Should no violation of this regulation be observed during this period, then,

b.) Observations must be made once every two weeks for a period of eight (8) weeks. If a violation is noted, monitoring reverts to weekly. Should no violation of this regulation be observed during this period, then,
c.) Observations must be made once per month.

3.) If the source reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner from the initial monitoring frequency.

Record Keeping:

1.) The permittee shall maintain records of all observation results (see Attachment E1 or E3), noting:
   a) Whether any air emissions (except for water vapor) were visible from the emission units,
   b) All emission units from which visible emissions occurred, and
   c) Whether the visible emissions were normal for the process.
2.) The permittee shall maintain records of any equipment malfunctions. (see Attachment F)
3.) The permittee shall maintain records of any Method 9 test performed in accordance with this permit condition. (see Attachment G)
4.) Attachments E1 or E2, F and G contain example logs to assist in compliance with these recordkeeping requirements. These logs, or an equivalent created by the permittee, must be used to certify compliance with this requirement.
5.) These records shall be made available immediately for inspection to Department of Natural Resources personnel upon request.
6.) All records shall be maintained for five years.

Reporting:

1.) The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined using the Method 9 test that the emission unit(s) exceeded the opacity limit.
2.) The permittee shall report any deviations of this permit condition to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than the semi-annual monitoring report and annual compliance certification, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

PERMIT CONDITIONS (EU0010 & EU0020) - 03

10 CSR 10-6.060 *Construction Permits Required*
APCP Construction Permit #0379-009, Issued March 1, 1979

Emission Limitations:

1.) The permittee shall not combust coal in these emission units with more than 4% weight sulfur and 11.3 % weight ash.
2.) The permittee shall install and maintain multicyclones providing at least 92.5% collection efficiency on boilers #3 and #4.
3.) The permittee shall not emit more than 447 lbs/hr of aggregate SO_2 from boilers #3, #4, and #5.
4.) The permittee shall not burn more than 5,000 tons per twelve (12)-month rolling periods of coal in boilers #3 and #4 combined.

Monitoring:

1.) The permittee shall analyze the coal being combusted in these emission units monthly. The following characteristics of the coal shall determined in accordance with A.S.T.M. procedures for Laboratory Sampling and Analysis of Coal:
   a) Percent Ash, by weight

b) Percent Moisture, by weight
c) Percent Sulfur, by weight
d) Heat value, in Btu/lb

2.) The permittee shall monitor the daily average fuel firing rate in tons coal/hr.
3.) The permittee shall monitor and record the amount of coal combusted in boilers #3 and #4.

Record keeping:

1.) The permittee shall keep records of all coal analysis reports, the daily average fuel firing rate in tons coal/hr, and total amounts of coal used each month.
2.) These records shall be made available immediately for inspection to the Department of Natural Resources' personnel upon request.
3.) Attachment B contains a log including these record keeping requirements. This log (written or electronic), or an equivalent created by the permittee, must be used to certify compliance with this requirement.
4.) All records to be maintained for five (5) years.

Reporting:

1.) The permittee shall report to the Air Pollution Control Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after any exceedance of these limitations.
2.) The APCP shall be notified of any shutdown or start-up of boilers #3 and/or #4.
3.) The permittee shall report any deviations of this permit condition to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than the semi-annual monitoring report and annual compliance certification, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

PERMIT CONDITION EU0020 - 04

10 CSR 10-6.060 *Construction Permits Required*
APCP Construction Permit #092000-006, Issued August 24, 2000

Emission Limitations:

Particulate Matter Less Than Ten (10) Micron in Diameter (PM_{10}) Increment Consumption and Corrective Action Plan:

1.) This installation is being located in a Prevention of Significant Deterioration (PSD) baseline area for PM_{10} where increment has already been consumed. A subsequent increment evaluation for this area could reveal an exceedance(s) of the increment requirements in the immediate area of this new source. If a subsequent increment evaluation should reveal a problem with increment consumption, Missouri University of Science and Technology shall take steps, if necessary, to remain in or to come into compliance with the increment requirements for this PSD baseline area.
2.) If it is demonstrated that the emissions from the new source are either the cause or is contributing to exceedance(s), the Director may require Missouri University of Science and Technology to submit a corrective action plan to address the increment exceedance(s) or the portion of the increment exceedance(s) that is determined to be caused by the new source. This corrective action plan, if requested, shall be submitted within 30 days or alternative time schedule if approved by the Director and shall be adequate to timely and significantly mitigate the emission of PM_{10} to address the situation causing the increment exceedance(s). Missouri University of Science and Technology shall implement any such corrective action plan immediately upon its approval by the Director.

Monitoring/Record keeping/Reporting:

Submission of Quarterly Production Information

Missouri University of Science and Technology shall maintain an accurate record of the amount of bituminous coal burned (in tons), the amount of natural gas burned in million cubic feet (MMCF), and the number of days operated during each calendar quarter. This information shall be submitted to the Air Pollution Control Program (APCP) Technical Support Section within 30 days after the end of every calendar quarter. Missouri University of Science and Technology may request (confidential status) for these quarterly consumption records following the procedures allowed by DNR for the confidential status of annual EIQ reports.

PERMIT CONDITION EU0030- 01

10 CSR 10-3.060 *Maximum Allowable Emissions of Particulate Matter from Fuel Burning Equipment Used For Indirect Heating*
40 CFR Part 64, Compliance Assurance Monitoring (CAM)

Emission Limitation:

1.) The permittee shall not emit particulate matter in excess of 16.91 lbs/hr for EP-03 (Boiler #5).
2.) Emissions in excess of the level of 16.91 lbs/hr during periods of start-up, shutdown, and malfunction may be excused under 10 CSR 10-6.050, *Start-up, Shutdown and Malfunction Conditions*, provided the permittee has made this assertion to the Missouri Department of Natural Resources Air Pollution Control Program in accordance with that rule and these agencies agree with that assertion.

Monitoring:

1.) The performance requirements for the baghouse and an excursion with its associated averaging time for each emission unit shall be as specified in the following table:

Missouri University of Science and Technology CAM Monitoring Approach for Particulate Matter Emissions from the Boiler #5 Baghouse			
Indicator	**Visible Emissions**	**Pressure Drop**	**Bag Condition**
Measurement Approach	Visible emissions from the baghouse exhaust shall be monitored at the North Stack when Boiler #5 is in operation using EPA Method 22-like procedures (Boiler #4 may also be operating simultaneously).	Pressure drop across the baghouse is monitored with a differential pressure gauge. Pressure taps are located within 10 feet of the baghouse on both inlet and outlet.	Bag age and condition (e.g., deterioration level) will be monitored through an inspection and maintenance program.
Indicator Range	The indicator range is defined as no visible emissions. An excursion is defined as the presence of visible emissions.	An excursion is defined as a pressure drop less than 1 inches of water column (in. H_2O) or greater than 10 in. H_2O.	An excursion is defined as a failure to perform any scheduled inspection.
Excursion	An excursion of any single indicator constitutes an excursion. Any and all excursions trigger an emission unit/control device inspection, corrective action, and a reporting requirement.		
Quality Improvement Plan (QIP)	The QIP threshold for baghouse visible emissions is nine (9) excursions in a 6-month reporting period. The Permittee shall submit a QIP that satisfies 40 CFR §64.8, *Quality Improvement Plan (QIP) requirements*, to the attention of the MDNR APCP Compliance Enforcement Section Chief, within thirty (30) days of triggering the QIP threshold.		
QA/QC Practices and Criteria	The Method 22-like observations shall be performed by an observer familiar with Method 22.	The differential pressure gauge shall be calibrated at least semiannually.	Qualified, experienced personnel shall perform inspection and maintenance.
Monitoring Frequency	A method 22-like visible emission observation shall be conducted	Pressure drop shall be monitored continuously.	Inspection and maintenance shall be performed at least

	daily.		annually, such as during scheduled maintenance.
Data Collection Procedure	Daily visible emission observations shall be documented by the observer(s).	Pressure drop shall be recorded continuously on a circular chart recorder.	All inspection and maintenance is to be documented by the personnel responsible for this activity.
Averaging Period	6 minutes	NA	NA
Reporting	The Permittee shall submit a CAM report detailing the number, duration, and cause for any and all excursions and monitor downtime on a semiannual basis along with the installation's required Semiannual Monitoring Report and Annual Compliance Certification that is submitted pursuant to 10 CSR 10-6.065, *Operating Permits*.		

2.) Proper maintenance. At all times, the owner or operator shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment. [§64.7(b)]

3.) Continued operation. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall collect data at all required intervals at all times that the pollutant-specific emissions units are operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. [§64.7(c)]

4.) Response to excursions or exceedances: [§64.7(d)]
   a) Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable. [§64.7(d)(1)]
   b) Determination of whether the owner or operator has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process. [§64.7(d)(2)]

5.) Documentation of need for improved monitoring. After approval of monitoring under this part, if the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly

notify the permitting authority and, if necessary, submit a proposed modification to the part 70 permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. [§64.7(e)]

Quality improvement plan (QIP):

1.) The permittee shall develop and implement a QIP if either boiler has accumulated excursions exceeding 5 percent duration of the operating time during the reporting period.
2.) Elements of a QIP: [§64.8(b)]
   a) The owner or operator shall maintain a written QIP, if required, and have it available for inspection. [§64.8(b)(1)]
   b) The plan initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the owner or operator shall modify the plan to include procedures for conducting one or more of the following actions, as appropriate: [§64.8(b)(2)]
      i) Improved preventive maintenance practices. [§64.8(b)(2)(i)]
      ii) Process operation changes. [§64.8(b)(2)(ii)]
      iii) Appropriate improvements to control methods. [§64.8(b)(2)(iii)]
      iv) Other steps appropriate to correct control performance. [§64.8(b)(2)(iv)]
      v) More frequent or improved monitoring (only in conjunction with one or more steps under paragraphs (b)(2)(i) through (iv) of this section). [§64.8(b)(2)(v)]
3.) If a QIP is required, the owner or operator shall develop and implement a QIP as expeditiously as practicable and shall notify the permitting authority if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined. [§64.8(c)]
4.) Following implementation of a QIP, upon any subsequent determination pursuant to §64.7(d)(2) the Administrator or the permitting authority may require that an owner or operator make reasonable changes to the QIP if the QIP is found to have: [§64.8(d)]
   a) Failed to address the cause of the control device performance problems; or [§64.8(d)(1)]
   b) Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. [§64.8(d)(2)]
5.) Implementation of a QIP shall not excuse the owner or operator of a source from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act. [§64.8(e)]

Recordkeeping:

1.) The owner or operator shall submit monitoring reports to the permitting authority in accordance with §70.6(a)(3)(iii) of this chapter. [§64.9(a)(1)]
2.) A report for monitoring under this part shall include, at a minimum, the information required under §70.6(a)(3)(iii) of this chapter and the following information, as applicable: [§64.9(a)(2)]
   a) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken; [§64.9(a)(2)(i)]

b) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and [§64.9(a)(2)(ii)]
c) A description of the actions taken to implement a QIP during the reporting period as specified in §64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring. [§64.9(a)(2)(iii)]

3.) Instead of paper records, the owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements. [§64.9(b)(2)]
4.) All records shall be kept on-site for no less than five years and be made available immediately to any Missouri Department of Natural Resources' personnel upon request.

Reporting:

1.) The owner or operator shall comply with the recordkeeping requirements specified in §70.6(a)(3)(ii) of this chapter. The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to §64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions). [§64.9(b)(1)]
2.) The permittee shall report to the Air Pollution Control Enforcement Section, P.O. Box 176, Jefferson City, MO 65101, no later than fifteen (15) days after any exceedance of any of the terms imposed by this regulation, or any malfunction which could possibly cause an exceedance of this regulation.
3.) The permittee shall report any deviations from the emission limitation, monitoring, quality improvement plan, recordkeeping, and reporting requirements of this permit condition in the semi-annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION EU0030 - 02

10 CSR 10-6.060 *Construction Permits Required*
APCP Construction Permit #0379-009, Special Conditions 1, 2, 8, & 9

Emission Limitation:

1.) The permittee shall not exceed the aggregate sulfur content of the fuel for boiler #5 of two (2) percent sulfur.
2.) The permittee shall maintain a baghouse of at least 99.5% collection efficiency on boiler #5.
3.) The permittee shall not emit more than 447 lbs/hr of aggregate SO_2 from boilers #3, #4, and #5.
4.) The permittee shall not emit more than 201 lbs/hr of aggregate SO_2 from boiler #5.

Monitoring:

1.) The permittee shall analyze the coal being combusted in these emission units monthly. The below characteristics of the coal shall done in accordance with A.S.T.M. procedures for Laboratory Sampling and Analysis of Coal:
a) Percent Ash, by weight
b) Percent Moisture, by weight
c) Percent Sulfur, by weight
d) Heat value, in Btu/lb

2.) The permittee shall analyze the wood being combusted in these emission units monthly. The following characteristics of the coal shall done in accordance with A.S.T.M. procedures for Laboratory Sampling and Analysis of Coal:
   a) Percent Moisture, by weight
   b) Heat value, in Btu/lb
3.) The permittee shall monitor the daily average steam production rate in pounds of steam/hr, maximum daily production in pounds of steam/hr, average hourly feed rate of coal for each day, and total amounts of coal and wood used each month.

Record keeping:

1.) The permittee shall keep records of all coal analysis reports (ash content, moisture content, sulfur content, and BTU content), the daily average steam production rate in pound of steam/hr, maximum daily production in pound of steam/hr, average hourly feed rate of coal for each day, and total amounts of coal and wood used each month.
2.) These records shall be made available immediately for inspection to the Department of Natural Resources' personnel upon request.
3.) Attachment B contains a log including some of these record keeping requirements. This log (written or electronic), or an equivalent created by the permittee, must be used to certify compliance with this requirement. The remaining logs sheets must be created by the permittee in order to met the reporting requirements.
4.) All records to be maintained for five (5) years.

Reporting:

1.) The permittee shall report to the Air Pollution Control Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after any exceedance of these limitations.
2.) The APCP shall be notified of any shutdown or start-up of boiler #5.
3.) The permittee shall report any deviations of this permit condition to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than the semi-annual monitoring report and annual compliance certification, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

EU0040 through EU0070 - Other Small Boilers			
Emission Unit	Description	Manufacturer/Model #	2008 EIQ Reference #
EU0040	2 - 8.7 MMBtu/hr dual fired (Natural Gas & Fuel Oil No.2) boilers located in Thomas Jefferson Hall;(2008)	Burnham	EP-13
EU0050	Three 2.89 MMBtu Dual Fired (Natural Gas and Fuel Oil #2) Boilers (2004) located in Residential Hall One.	Burnham	EP-22
EU0060	Two 1.699 MMBtu Dual Fired (Natural Gas and Fuel Oil #2) Boilers (2004), located in the Havener Center.	Burnham	EP-23
EU0070	Two 2.12 MMBtu Dual Fired (Natural Gas and Fuel Oil #2) Boilers (2007), located in Residential Hall Two	Burnham	EP-24

PERMIT CONDITIONS (EU0040 through EU0070)- 01

10 CSR 10-3.060 *Maximum Allowable Emissions of Particulate Matter from Fuel Burning Equipment Used for Indirect Heating*

Emission Limitation:

The §3.060 derived emission rate limits for the individual units are:
EU0040 – The permittee shall not emit particulate matter in excess of 6.09 lbs/hr (0.35 lb/MMBtu)
EU0050 – The permittee shall not emit particulate matter in excess of 1.56 lbs/hr (0.18 lb/MMBtu)
EU0060 – The permittee shall not emit particulate matter in excess of 1.04 lbs/hr (0.18 lb/MMBtu)
EU0070 – The permittee shall not emit particulate matter in excess of 0.76 lbs/hr (0.18 lb/MMBtu)

Operation Limitation/Equipment Specifications:

These emission units shall be limited to burning pipeline grade natural gas and fuel oil no. 2.

Monitoring/Record Keeping:

1.) The permittee shall maintain on the premises of the installation calculations demonstrating compliance with this rule (See Attachment H).
2.) The calculation shall be made available immediately for inspection to the Department of Natural Resources' personnel upon request.

Reporting:

The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

PERMIT CONDITIONS (EU0040 through EU0070)- 2

10 CSR 10-6.220 *Restriction of Emissions of Visible Air Contaminants*

Emission Limitation:

No owner or other person shall cause or permit emissions to be discharged into the atmosphere from any new source any visible emissions with opacity greater than 20%.
Exception: A person may discharge into the atmosphere from any source of emissions for a period(s) aggregating not more than six (6) minutes in any 60 minutes air contaminants with an opacity up to 60%.

Monitoring:

1.) The permittee shall conduct a visual emission observation on this emission unit once a month using the procedures contained in U.S. EPA Test Method 22. At a minimum, the observer should be trained and knowledgeable about the effects on visibility of emissions caused by background contrast, ambient lighting, observer position relative to lighting, wind and the presence of uncombined water. Readings are only required when the emission unit is operating and when the weather conditions allow. If no visible or other significant emissions were observed using these procedures, then no further observations would be required. For emission units with visible emissions perceived or believed to exceed the applicable opacity standard, the source representative would then conduct a Method 9 observation.
2.) Should a violation be observed, monitoring frequency will progress in the following manner:
    a) Weekly observations shall be conducted for a minimum of eight (8) consecutive weeks after the date of the initial violation. Should no violation of this regulation be observed during this period, then,

b) Observations must be made once every two weeks for a period of eight (8) weeks. If a violation is noted, monitoring reverts to weekly. Should no violation of this regulation be observed during this period, then,
c) Observations must be made once per month.

3.) If the source reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner from the initial monitoring frequency.

Record Keeping:

1.) The permittee shall maintain records of all observation results (see Attachment F or F1), noting:
a) Whether any air emissions (except for water vapor) were visible from the emission units,
b) All emission units from which visible emissions occurred, and
c) Whether the visible emissions were normal for the process.
2.) The permittee shall maintain records of any equipment malfunctions. (see Attachment F)
3.) The permittee shall maintain records of any Method 9 test performed in accordance with this permit condition. (see Attachment G)
4.) Attachments E1 or E2, F and G contain example logs to assist in compliance with these recordkeeping requirements. These logs, or an equivalent created by the permittee, must be used to certify compliance with this requirement..
5.) These records shall be made available immediately for inspection to Department of Natural Resources personnel upon request.
6.) All records shall be maintained for five years.

Reporting:

1.) The permittee shall report to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the permittee determined using the Method 9 test that the emission unit(s) exceeded the opacity limit.
2.) The permittee shall report any deviations of this permit condition to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than the semi-annual monitoring report and annual compliance certification, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

PERMIT CONDITIONS (EU0040 through EU0070)- 03

10 CSR 10 CSR 10-6.260 *Restriction of Emission of Sulfur Compounds*

Emission Limitation:

1.) No person shall cause or allow emissions of sulfur dioxide into the atmosphere from any indirect heating source in excess of eight (8) pounds of sulfur dioxide per million BTUs actual heat input averaged on any consecutive three (3)-hour time period.
2.) No person shall cause or permit the emission of sulfur compounds from any source which causes or contributes to concentrations exceeding those specified in 10 CSR 10-6.010 Ambient Air Quality Standards.
3.) The emission units shall be limited to fuel with a sulfur content of no more than 0.5% sulfur by weight.

Monitoring/Record keeping:

The permittee shall maintain an accurate record of the sulfur content of fuel used. Fuel purchase receipts, analyzed samples or certifications that verify the fuel type and sulfur content will be acceptable.

Reporting:

The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

IV. Core Permit Requirements

The installation shall comply with each of the following regulations or codes. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued. The following is only an excerpt from the regulation or code, and is provided for summary purposes only.

10 CSR 10-6.045 Open Burning Requirements

(1) General Provisions. The open burning of tires, petroleum-based products, asbestos containing materials, and trade waste is prohibited, except as allowed below. Nothing in this rule may be construed as to allow open burning which causes or constitutes a public health hazard, nuisance, a hazard to vehicular or air traffic, nor which violates any other rule or statute.

(2) Refer to the regulation for a complete list of allowances. The following is a listing of exceptions to the allowances:

(A) Burning of household or domestic refuse. Burning of household or domestic refuse is limited to open burning on a residential premises having not more than four dwelling units, provided that the refuse originates on the same premises, with the following exceptions:

1. Kansas City metropolitan area. The open burning of household refuse must take place in an area zoned for agricultural purposes and outside that portion of the metropolitan area surrounded by the corporate limits of Kansas City and every contiguous municipality;
2. Springfield-Greene County area. The open burning of household refuse must take place outside the corporate limits of Springfield and only within areas zoned A-1, Agricultural District;
3. St. Joseph area. The open burning of household refuse must take place within an area zoned for agricultural purposes and outside that portion of the metropolitan area surrounded by the corporate limits of St. Joseph; and
4. St. Louis metropolitan area. The open burning of household refuse is prohibited;

(B) Yard waste, with the following exceptions:

1. Kansas City metropolitan area. The open burning of trees, tree leaves, brush or any other type of vegetation shall require an open burning permit;
2. Springfield-Greene County area. The City of Springfield requires an open burning permit for the open burning of trees, brush or any other type of vegetation. The City of Springfield prohibits the open burning of tree leaves;
3. St. Joseph area. Within the corporate limits of St. Joseph, the open burning of trees, tree leaves, brush or any other type of vegetation grown on a residential property is allowed during the following calendar periods and time-of-day restrictions:
   A. A three (3)-week period within the period commencing the first day of March through April 30 and continuing for twenty-one (21) consecutive calendar days;
   B. A three (3)-week period within the period commencing the first day of October through November 30 and continuing for twenty-one (21) consecutive calendar days;
   C. The burning shall take place only between the daytime hours of 10:00 a.m. and 3:30 p.m.; and
   D. In each instance, the twenty-one (21)-day burning period shall be determined by the director of Public Health and Welfare of the City of St. Joseph for the region in which the City of St. Joseph is located provided, however, the burning period first shall receive the approval of the department director; and

4. St. Louis metropolitan area. The open burning of trees, tree leaves, brush or any other type of vegetation is limited to the period beginning September 16 and ending April 14 of each calendar year and limited to a total base area not to exceed sixteen (16) square feet. Any open burning shall be conducted only between the hours of 10:00 a.m. and 4:00 p.m. and is limited to areas outside of incorporated municipalities;

(3) Certain types of materials may be open burned provided an open burning permit is obtained from the director. The permit will specify the conditions and provisions of all open burning. The permit may be revoked if the owner or operator fails to comply with the conditions or any provisions of the permit.

(4) Missouri University of Science and Technology may be issued an annually renewable open burning permit for open burning provided that an air curtain destructor or incinerator is utilized and only tree trunks, tree limbs, vegetation or untreated wood waste are burned. Open burning shall occur at least two hundred (200) yards from the nearest occupied structure unless the owner or operator of the occupied structure provides a written waiver of this requirement. Any waiver shall accompany the open burning permit application. The permit may be revoked if Missouri University of Science and Technology fails to comply with the provisions or any condition of the open burning permit.

(A) In a nonattainment area, as defined in 10 CSR 10-6.020, paragraph (2)(N)5., the director shall not issue a permit under this section unless the owner or operator can demonstrate to the satisfaction of the director that the emissions from the open burning of the specified material would be less than the emissions from any other waste management or disposal method.

(5) Reporting and Record Keeping. New Source Performance Standard (NSPS) 40 CFR Part 60 Subpart CCCC establishes certain requirements for air curtain destructors or incinerators that burn wood trade waste. These requirements are established in 40 CFR 60.2245-60.2260. The provisions of 40 CFR part 60 Subpart CCCC promulgated as of September 22, 2005 shall apply and are hereby incorporated by reference in this rule, as published by the U.S. Government Printing Office, 732 N Capitol Street NW, Washington, DC 20401. To comply with NSPS 40 CFR 60.2245-60.2260, sources must conduct an annual Method 9 test. A copy of the annual Method 9 test results shall be submitted to the director.

(6) Test Methods. The visible emissions from air pollution sources shall be evaluated as specified by 40 CFR part 60, Appendix A–Test Methods, Method 9–Visual Determination of the Opacity of Emissions from Stationary Sources. The provisions of 40 CFR part 60, Appendix A, Method 9 promulgated as of December 23, 1971 is incorporated by reference in this rule, as published by the U.S. Government Printing Office, 732 N Capitol Street NW, Washington, DC 20401.

10 CSR 10-6.050 Start-up, Shutdown and Malfunction Conditions

1) In the event of a malfunction, which results in excess emissions that exceed one hour, the permittee shall submit to the director within two business days, in writing, the following information:
   a) Name and location of installation;
   b) Name and telephone number of person responsible for the installation;
   c) Name of the person who first discovered the malfunction and precise time and date that the malfunction was discovered.
   d) Identity of the equipment causing the excess emissions;
   e) Time and duration of the period of excess emissions;
   f) Cause of the excess emissions;
   g) Air pollutants involved;
   h) Best estimate of the magnitude of the excess emissions expressed in the units of the applicable requirement and the operating data and calculations used in estimating the magnitude;

i) Measures taken to mitigate the extent and duration of the excess emissions; and
j) Measures taken to remedy the situation that caused the excess emissions and the measures taken or planned to prevent the recurrence of these situations.

2) The permittee shall submit the paragraph 1 information list to the director in writing at least ten days prior to any maintenance, start-up or shutdown, which is expected to cause an excessive release of emissions that exceed one hour. If notice of the event cannot be given ten days prior to the planned occurrence, it shall be given as soon as practicable prior to the release. If an unplanned excess release of emissions exceeding one hour occurs during maintenance, start-up or shutdown, the director shall be notified verbally as soon as practical during normal working hours and no later than the close of business of the following working day. A written notice shall follow within ten working days.
3) Upon receipt of a notice of excess emissions issued by an agency holding a certificate of authority under section 643.140, RSMo, the permittee may provide information showing that the excess emissions were the consequence of a malfunction, start-up or shutdown. The information, at a minimum, should be the paragraph 1 list and shall be submitted not later than 15 days after receipt of the notice of excess emissions. Based upon information submitted by the permittee or any other pertinent information available, the director or the commission shall make a determination whether the excess emissions constitute a malfunction, start-up or shutdown and whether the nature, extent and duration of the excess emissions warrant enforcement action under section 643.080 or 643.151, RSMo.
4) Nothing in this rule shall be construed to limit the authority of the director or commission to take appropriate action, under sections 643.080, 643.090 and 643.151, RSMo to enforce the provisions of the Air Conservation Law and the corresponding rule.
5) Compliance with this rule does not automatically absolve the permittee of liability for the excess emissions reported.

10 CSR 10-6.060 Construction Permits Required

The permittee shall not commence construction, modification, or major modification of any installation subject to this rule, begin operation after that construction, modification, or major modification, or begin operation of any installation which has been shut down longer than five years without first obtaining a permit from the permitting authority.

10 CSR 10-6.065 Operating Permits

The permittee shall file a complete application for renewal of this operating permit at least six months before the date of permit expiration. In no event shall this time be greater than eighteen months. [10 CSR 10-6.065(6)(B)1.A(V)] The permittee shall retain the most current operating permit issued to this installation on-site. [10 CSR 10-6.065(6)(C)1.C(II)] The permittee shall immediately make such permit available to any Missouri Department of Natural Resources personnel upon request. [10 CSR 10-6.065(6)(C)3.B]

10 CSR 10-6.080 Emission Standards for Hazardous Air Pollutants and 40 CFR Part 61 Subpart M National Emission Standard for Asbestos

1) The permittee shall follow the procedures and requirements of 40 CFR Part 61, Subpart M for any activities occurring at this installation which would be subject to provisions for 40 CFR Part 61, Subpart M, National Emission Standard for Asbestos.

2) The permittee shall conduct monitoring to demonstrate compliance with registration, certification, notification, and Abatement Procedures and Practices standards as specified in 40 CFR Part 61, Subpart M.

10 CSR 10-6.110 Submission of Emission Data, Emission Fees and Process Information

1) The permittee shall complete and submit an Emission Inventory Questionnaire (EIQ) annually.
2) The permittee may be required by the director to file additional reports.
3) Public Availability of Emission Data and Process Information. Any information obtained pursuant to the rule(s) of the Missouri Air Conservation Commission that would not be entitled to confidential treatment under 10 CSR 10-6.210 shall be made available to any member of the public upon request.
4) The permittee shall pay an annual emission fee per ton of regulated air pollutant emitted according to the schedule in the rule. This fee is an emission fee assessed under authority of RSMo. 643.079 to satisfy the requirements of the Federal Clean Air Act, Title V.
5) The permittee shall complete required reports on state supplied EIQ forms or in a form satisfactory to the director and the reports shall be submitted to the director by June 1 after the end of each reporting period.
6) The reporting period shall end on December 31 of each calendar year. Each report shall contain the required information for each emission unit for the twelve (12)-month period immediately preceding the end of the reporting period.
7) The permittee shall collect, record and maintain the information necessary to complete the required forms during each year of operation of the installation.

10 CSR 10-6.130 Controlling Emissions During Episodes of High Air Pollution Potential

This rule specifies the conditions that establish an air pollution alert (yellow/orange/red/purple), or emergency (maroon) and the associated procedures and emission reduction objectives for dealing with each. The permittee shall submit an appropriate emergency plan if required by the Director.

10 CSR 10-6.150 Circumvention

The permittee shall not cause or permit the installation or use of any device or any other means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission or air contaminant which violates a rule of the Missouri Air Conservation Commission.

10 CSR 10-6.170
Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin

Emission Limitation:

1) The permittee shall not cause or allow to occur any handling, transporting or storing of any material; construction, repair, cleaning or demolition of a building or its appurtenances; construction or use of a road, driveway or open area; or operation of a commercial or industrial installation without applying reasonable measures as may be required to prevent, or in a manner which allows or may allow, fugitive particulate matter emissions to go beyond the premises of origin in quantities that the particulate matter may be found on surfaces beyond the property line of origin. The nature or origin of the particulate matter shall be determined to a reasonable degree of certainty by a technique proven to be accurate and approved by the director.
2) The permittee shall not cause nor allow to occur any fugitive particulate matter emissions to remain visible in the ambient air beyond the property line of origin.

3) Should it be determined that noncompliance has occurred, the director may require reasonable control measures as may be necessary. These measures may include, but are not limited to, the following:
   a) Revision of procedures involving construction, repair, cleaning and demolition of buildings and their appurtenances that produce particulate matter emissions;
   b) Paving or frequent cleaning of roads, driveways and parking lots;
   c) Application of dust-free surfaces;
   d) Application of water; and
   e) Planting and maintenance of vegetative ground cover.

10 CSR 10-6.180 Measurement of Emissions of Air Contaminants

1) The director may require any person responsible for the source of emission of air contaminants to make or have made tests to determine the quantity or nature, or both, of emission of air contaminants from the source. The director may specify testing methods to be used in accordance with good professional practice. The director may observe the testing. All tests shall be performed by qualified personnel.
2) The director may conduct tests of emissions of air contaminants from any source. Upon request of the director, the person responsible for the source to be tested shall provide necessary ports in stacks or ducts and other safe and proper sampling and testing facilities, exclusive of instruments and sensing devices as may be necessary for proper determination of the emission of air contaminants.
3) The director shall be given a copy of the test results in writing and signed by the person responsible for the tests.

10 CSR 10-3.090 Restriction of Emission of Odors
This requirement is not federally enforceable.

No person may cause, permit or allow the emission of odorous matter in concentrations and frequencies or for durations that odor can be perceived when one volume of odorous air is diluted with seven volumes of odor-free air for two separate trials not less than 15 minutes apart within the period of one hour.

10 CSR 10-6.250 Asbestos Abatement Projects – Certification, Accreditation, and Business Exemption Requirements

The permittee shall conduct all asbestos abatement projects within the procedures established for certification and accreditation by 10 CSR 10-6.250. This rule requires individuals who work in asbestos abatement projects to be certified by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires training providers who offer training for asbestos abatement occupations to be accredited by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires persons who hold exemption status from certain requirements of this rule to allow the department to monitor training provided to employees. Each individual who works in asbestos abatement projects must first obtain certification for the appropriate occupation from the department. Each person who offers training for asbestos abatement occupations must first obtain accreditation from the department. Certain business entities that meet the requirements for state-approved exemption status must allow the department to monitor training classes provided to employees who perform asbestos abatement.

Title VI – 40 CFR Part 82 Protection of Stratospheric Ozone

1) The permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E:
   a) All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to §82.106.
   b) The placement of the required warning statement must comply with the requirements pursuant to §82.108.
   c) The form of the label bearing the required warning statement must comply with the requirements pursuant to §82.110.
   d) No person may modify, remove, or interfere with the required warning statement except as described in §82.112.
2) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:
   a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156.
   b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to §82.158.
   c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.
   d) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record keeping requirements pursuant to §82.166. ("MVAC-like" appliance as defined at §82.152).
   e) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to §82.156.
   f) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.
3) If the permittee manufactures, transforms, imports, or exports a class I or class II substance, the permittee is subject to all the requirements as specified in 40 CFR part 82, Subpart A, Production and Consumption Controls.
4) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR part 82, Subpart B, Servicing of Motor Vehicle Air conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or system used on passenger buses using HCFC-22 refrigerant.
5) The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR part 82, Subpart G, Significant New Alternatives Policy Program. *Federal Only - 40 CFR part 82*

10 CSR 10-6.280 Compliance Monitoring Usage

1) The permittee is not prohibited from using the following in addition to any specified compliance methods for the purpose of submission of compliance certificates:

a) Monitoring methods outlined in 40 CFR Part 64;
b) Monitoring method(s) approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; and
c) Any other monitoring methods approved by the director.

2) Any credible evidence may be used for the purpose of establishing whether a permittee has violated or is in violation of any such plan or other applicable requirement. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred by a permittee:
   a) Monitoring methods outlined in 40 CFR Part 64;
   b) A monitoring method approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; and
   c) Compliance test methods specified in the rule cited as the authority for the emission limitations.
3) The following testing, monitoring or information gathering methods are presumptively credible testing, monitoring, or information gathering methods:
   a) Applicable monitoring or testing methods, cited in:
      i) 10 CSR 10-6.030, "Sampling Methods for Air Pollution Sources";
      ii) 10 CSR 10-6.040, "Reference Methods";
      iii) 10 CSR 10-6.070, "New Source Performance Standards";
      iv) 10 CSR 10-6.080, "Emission Standards for Hazardous Air Pollutants"; or
   b) Other testing, monitoring, or information gathering methods, if approved by the director, that produce information comparable to that produced by any method listed above.

V. General Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued,

10 CSR 10-6.065(6)(C)1.B Permit Duration

This permit is issued for a term of five years, commencing on the date of issuance. This permit will expire at the end of this period unless renewed.

10 CSR 10-6.065(6)(C)1.C General Record Keeping and Reporting Requirements

1) Record Keeping
   a) All required monitoring data and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report or application.
   b) Copies of all current operating and construction permits issued to this installation shall be kept on-site for as long as the permits are in effect. Copies of these permits shall be made immediately available to any Missouri Department of Natural Resources' personnel upon request.
2) Reporting
   a) All reports shall be submitted to the Air Pollution Control Program, Enforcement Section, P. O. Box 176, Jefferson City, MO 65102.
   b) The permittee shall submit a report of all required monitoring by:
      i) October 1st for monitoring which covers the January through June time period, and
      ii) April 1st for monitoring which covers the July through December time period.
      iii) Exception. Monitoring requirements which require reporting more frequently than semi annually shall report no later than 30 days after the end of the calendar quarter in which the measurements were taken.
   c) Each report shall identify any deviations from emission limitations, monitoring, record keeping, reporting, or any other requirements of the permit, this includes deviations or Part 64 exceedances.
   d) Submit supplemental reports as required or as needed. Supplemental reports are required no later than ten days after any exceedance of any applicable rule, regulation or other restriction. All reports of deviations shall identify the cause or probable cause of the deviations and any corrective actions or preventative measures taken.
      i) Notice of any deviation resulting from an emergency (or upset) condition as defined in paragraph (6)(C)7.A of 10 CSR 10-6.065 (Emergency Provisions) shall be submitted to the permitting authority either verbally or in writing within two working days after the date on which the emission limitation is exceeded due to the emergency, if the permittee wishes to assert an affirmative defense. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that indicate an emergency occurred and the permittee can identify the cause(s) of the emergency. The permitted installation must show that it was operated properly at the time and that during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or requirements in the permit. The notice must contain a description of the emergency, the steps taken to mitigate emissions, and the corrective actions taken.
      ii) Any deviation that poses an imminent and substantial danger to public health, safety or the environment shall be reported as soon as practicable.

iii) Any other deviations identified in the permit as requiring more frequent reporting than the permittee's semiannual report shall be reported on the schedule specified in this permit, and no later than ten days after any exceedance of any applicable rule, regulation, or other restriction.

e) Every report submitted shall be certified by the responsible official, except that, if a report of a deviation must be submitted within ten days after the deviation, the report may be submitted without a certification if the report is resubmitted with an appropriate certification within ten days after that, together with any corrected or supplemental information required concerning the deviation.

f) The permittee may request confidential treatment of information submitted in any report of deviation.

10 CSR 10-6.065(6)(C)1.D Risk Management Plan Under Section 112(r)

The permittee shall comply with the requirements of 40 CFR Part 68, Accidental Release Prevention Requirements. If the permittee has more than a threshold quantity of a regulated substance in process, as determined by 40 CFR Section 68.115, the permittee shall submit a Risk Management Plan in accordance with 40 CFR Part 68 no later than the latest of the following dates:

1) June 21, 1999;
2) Three years after the date on which a regulated substance is first listed under 40 CFR Section 68.130; or
3) The date on which a regulated substance is first present above a threshold quantity in a process.

10 CSR 10-6.065(6)(C)1.F Severability Clause

In the event of a successful challenge to any part of this permit, all uncontested permit conditions shall continue to be in force. All terms and conditions of this permit remain in effect pending any administrative or judicial challenge to any portion of the permit. If any provision of this permit is invalidated, the permittee shall comply with all other provisions of the permit.

10 CSR 10-6.065(6)(C)1.G General Requirements

1) The permittee must comply with all of the terms and conditions of this permit. Any noncompliance with a permit condition constitutes a violation and is grounds for enforcement action, permit termination, permit revocation and re-issuance, permit modification or denial of a permit renewal application.
2) The permittee may not use as a defense in an enforcement action that it would have been necessary for the permittee to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit
3) The permit may be modified, revoked, reopened, reissued or terminated for cause. Except as provided for minor permit modifications, the filing of an application or request for a permit modification, revocation and reissuance, or termination, or the filing of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
4) This permit does not convey any property rights of any sort, nor grant any exclusive privilege.
5) The permittee shall furnish to the Air Pollution Control Program, upon receipt of a written request and within a reasonable time, any information that the Air Pollution Control Program reasonably may require to determine whether cause exists for modifying, reopening, reissuing or revoking the permit or to determine compliance with the permit. Upon request, the permittee also shall furnish to the Air Pollution Control Program copies of records required to be kept by the permittee. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 10 CSR 10-6.065(6)(C)1.

10 CSR 10-6.065(6)(C)1.H Incentive Programs Not Requiring Permit Revisions

No permit revision will be required for any installation changes made under any approved economic incentive, marketable permit, emissions trading, or other similar programs or processes provided for in this permit.

10 CSR 10-6.065(6)(C)1.I Reasonably Anticipated Operating Scenarios

None.

10 CSR 10-6.065(6)(C)3 Compliance Requirements

1) Any document (including reports) required to be submitted under this permit shall contain a certification signed by the responsible official.
2) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized officials of the Missouri Department of Natural Resources, or their authorized agents, to perform the following (subject to the installation's right to seek confidential treatment of information submitted to, or obtained by, the Air Pollution Control Program):
   a) Enter upon the premises where a permitted installation is located or an emissions-related activity is conducted, or where records must be kept under the conditions of this permit;
   b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
   c) Inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
   d) As authorized by the Missouri Air Conservation Law, Chapter 643, RSMo or the Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the terms of this permit, and all applicable requirements as outlined in this permit.
3) All progress reports required under an applicable schedule of compliance shall be submitted semiannually (or more frequently if specified in the applicable requirement). These progress reports shall contain the following:
   a) Dates for achieving the activities, milestones or compliance required in the schedule of compliance, and dates when these activities, milestones or compliance were achieved, and
   b) An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measures adopted.
4) The permittee shall submit an annual certification that it is in compliance with all of the federally enforceable terms and conditions contained in this permit, including emissions limitations, standards, or work practices. These certifications shall be submitted annually by April 1st, unless the applicable requirement specifies more frequent submission. These certifications shall be submitted to EPA Region VII, 901 North 5th Street, Kansas City, Kansas 66101, as well as the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. All deviations and Part 64 exceedances and excursions must be included in the compliance certifications. The compliance certification shall include the following:
   a) The identification of each term or condition of the permit that is the basis of the certification;
   b) The current compliance status, as shown by monitoring data and other information reasonably available to the installation;
   c) Whether compliance was continuous or intermittent;
   d) The method(s) used for determining the compliance status of the installation, both currently and over the reporting period; and

e) Such other facts as the Air Pollution Control Program will require in order to determine the compliance status of this installation.

10 CSR 10-6.065(6)(C)6 Permit Shield

1) Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements as of the date that this permit is issued, provided that:
   a) The application requirements are included and specifically identified in this permit, or
   b) The permitting authority, in acting on the permit revision or permit application, determines in writing that other requirements, as specifically identified in the permit, are not applicable to the installation, and this permit expressly includes that determination or a concise summary of it.
2) Be aware that there are exceptions to this permit protection. The permit shield does not affect the following:
   a) The provisions of section 303 of the Act or section 643.090, RSMo concerning emergency orders,
   b) Liability for any violation of an applicable requirement which occurred prior to, or was existing at, the time of permit issuance,
   c) The applicable requirements of the acid rain program,
   d) The authority of the Environmental Protection Agency and the Air Pollution Control Program of the Missouri Department of Natural Resources to obtain information, or
   e) Any other permit or extra-permit provisions, terms or conditions expressly excluded from the permit shield provisions.

10 CSR 10-6.065(6)(C)7 Emergency Provisions

1) An emergency or upset as defined in 10 CSR 10-6.065(6)(C)7.A shall constitute an affirmative defense to an enforcement action brought for noncompliance with technology-based emissions limitations. To establish an emergency- or upset-based defense, the permittee must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, the following:
   a) That an emergency or upset occurred and that the permittee can identify the source of the emergency or upset,
   b) That the installation was being operated properly,
   c) That the permittee took all reasonable steps to minimize emissions that exceeded technology-based emissions limitations or requirements in this permit, and
   d) That the permittee submitted notice of the emergency to the Air Pollution Control Program within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and any corrective actions taken.
2) Be aware that an emergency or upset shall not include noncompliance caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

10 CSR 10-6.065(6)(C)8 Operational Flexibility

An installation that has been issued a Part 70 operating permit is not required to apply for or obtain a permit revision in order to make any of the changes to the permitted installation described below if the changes are not Title I modifications, the changes do not cause emissions to exceed emissions allowable under the permit, and the changes do not result in the emission of any air contaminant not previously emitted. The permittee shall notify the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 901 North 5th Street, Kansas City, Kansas 66101, at least seven days in advance of these changes, except as allowed for emergency or upset

conditions. Emissions allowable under the permit means a federally enforceable permit term or condition determined at issuance to be required by an applicable requirement that establishes an emissions limit (including a work practice standard) or a federally enforceable emissions cap that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject.

1) Section 502(b)(10) changes. Changes that, under section 502(b)(10) of the Act, contravene an express permit term may be made without a permit revision, except for changes that would violate applicable requirements of the Act or contravene federally enforceable monitoring (including test methods), record keeping, reporting or compliance requirements of the permit.
   a) Before making a change under this provision, The permittee shall provide advance written notice to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 901 North 5th Street, Kansas City, Kansas 66101, describing the changes to be made, the date on which the change will occur, and any changes in emission and any permit terms and conditions that are affected. The permittee shall maintain a copy of the notice with the permit, and the APCP shall place a copy with the permit in the public file. Written notice shall be provided to the EPA and the APCP as above at least seven days before the change is to be made. If less than seven days notice is provided because of a need to respond more quickly to these unanticipated conditions, the permittee shall provide notice to the EPA and the APCP as soon as possible after learning of the need to make the change.
   b) The permit shield shall not apply to these changes.

10 CSR 10-6.065(6)(C)9 Off-Permit Changes

1) Except as noted below, the permittee may make any change in its permitted operations, activities or emissions that is not addressed in, constrained by or prohibited by this permit without obtaining a permit revision. Insignificant activities listed in the application, but not otherwise addressed in or prohibited by this permit, shall not be considered to be constrained by this permit for purposes of the off-permit provisions of this section. Off-permit changes shall be subject to the following requirements and restrictions:
   a) The change must meet all applicable requirements of the Act and may not violate any existing permit term or condition; the permittee may not change a permitted installation without a permit revision if this change is subject to any requirements under Title IV of the Act or is a Title I modification;
   b) The permittee must provide written notice of the change to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 901 North 5th Street, Kansas City, Kansas 66101, no later than the next annual emissions report. This notice shall not be required for changes that are insignificant activities under 10 CSR 10-6.065(6)(B)3. This written notice shall describe each change, including the date, any change in emissions, pollutants emitted and any applicable requirement that would apply as a result of the change.
   c) The permittee shall keep a record describing all changes made at the installation that result in emissions of a regulated air pollutant subject to an applicable requirement and the emissions resulting from these changes; and
   d) The permit shield shall not apply to these changes.

10 CSR 10-6.020(2)(R)12 Responsible Official

The application utilized in the preparation of this permit was signed by Dennis Cesari, Assistant Vice-President for Management Services. On Aug 3, 2006, The Air Pollution Control Program was notified that Mr. Steve Malott Vice Chancellor of Administrative Services is now that responsible

official. If this person terminates employment, or is reassigned different duties such that a different person becomes the responsible person to represent and bind the installation in environmental permitting affairs, the owner or operator of this air contaminant source shall notify the Director of the Air Pollution Control Program of the change. Said notification shall be in writing and shall be submitted within 30 days of the change. The notification shall include the name and title of the new person assigned by the source owner or operator to represent and bind the installation in environmental permitting affairs. All representations, agreement to terms and conditions and covenants made by the former responsible person that were used in the establishment of limiting permit conditions on this permit will continue to be binding on the installation until such time that a revision to this permit is obtained that would change said representations, agreements and covenants.

10 CSR 10-6.065(6)(E)6 Reopening-Permit for Cause

This permit may be reopened for cause if:

1) The Missouri Department of Natural Resources (MDNR) receives notice from the Environmental Protection Agency (EPA) that a petition for disapproval of a permit pursuant to 40 CFR § 70.8(d) has been granted, provided that the reopening may be stayed pending judicial review of that determination,
2) MDNR or EPA determines that the permit contains a material mistake or that inaccurate statements were made which resulted in establishing the emissions limitation standards or other terms of the permit,
3) Additional applicable requirements under the Act become applicable to the installation; however, reopening on this ground is not required if—:
   a) The permit has a remaining term of less than three years;
   b) The effective date of the requirement is later than the date on which the permit is due to expire; or
   c) The additional applicable requirements are implemented in a general permit that is applicable to the installation and the installation receives authorization for coverage under that general permit,
4) The installation is an affected source under the acid rain program and additional requirements (including excess emissions requirements), become applicable to that source, provided that, upon approval by EPA, excess emissions offset plans shall be deemed to be incorporated into the permit; or
5) MDNR or EPA determines that the permit must be reopened and revised to assure compliance with applicable requirements.

10 CSR 10-6.065(6)(E)1.C Statement of Basis

This permit is accompanied by a statement setting forth the legal and factual basis for the permit conditions (including references to applicable statutory or regulatory provisions). This Statement of Basis, while referenced by the permit, is not an actual part of the permit.

VI. Attachments

Attachments follow.

Attachment A
Pressure Drop Log for Baghouses/Cyclones

Control Device ID	Week Beginning (Month/Day/Year)	Week Ending (Month/Day/Year)	Pressure Drop (inches water)	Within specifications? (Yes/No)

Attachment B

This record keeping sheet may be used to meet the record keeping requirements for Permit Conditions (EU0010 & EU0020) – 03 & EU0030 - 02

Date	Monthly Throughput (coal - tons)	Monthly Percent Sulfur	Monthly Percent Fly Ash	Moisture Content Percent	BTU Content	Daily Ave. Fuel Firing Rate

Attachment C
Maintenance/Inspection Activities Schedule and Log

Date	Maintenance Activities	Repair Actions	Replacements	Notes

Attachment D

10 CSR 10-6.260 *Restriction of Emission of Sulfur Compounds*

Unit	Fuel	MMBtu Rating	[1]Sulfur limit	[1]Emission Factor	SOx Emitted (lb/hr)	Maximum SOx Emitted (lb/MMBTU)	SO_2 (ppm)	SO_2 Standard (ppm)
Boiler 3	Coal	48.7	4%	0.04	176	3.614	921	2000
Boiler 4	Coal	67.2	4%	0.04	248	3.690	940	2000
Boiler 5	Coal	67.2	2%	0.02	124	1.848	471	500
Boiler 5	Wood chips	67.2	2%	0.025	1.68	0.025	6.37	500
Residential Hall One Boilers (3)	NG/ FO#2	8.670	0.5%	72	8.95	0.51	133	500
Havener Center Boilers (2)	NG/ FO#2	3.398	0.5%	72	1.75	0.51	133	500
Residential Hall Two Boilers (2)	NG/ FO#2	4.240	0.5%	72	4.46	0.51	133	500
TJ Boilers (2)	NG/ FO#2	17.4	0.5%	72	2.18	0.51	133	500

[1]Coal emission factor derived from the fuel sulfur limitations, and assuming all sulfur content in fuel is converted into SO_2. These fuel sulfur limitations are taken from CP #0379-009. Boiler #4 has the capacity to utilize Natural Gas, but due to the inherent compliance with §6.260 of natural gas combustion, the evaluation was not included in this table. Emission factor for combustion of wood chips was found in AP-42 Table 1.6-2.
This table demonstrates compliance of the boilers Nos. 3 through 5 with limits of §6.260 by complying with the sulfur limits of CP #0379-009.

From AP-42 Table 1.1-3 (09/98): On average for bituminous coal, 95% of fuel sulfur is emitted as SO_2, and only about 0.7% of fuel sulfur is emitted as SO_3 and gaseous sulfate. There were no SO_3 emission factors available for wood and since the emission rate of SO_2 is relatively small compared to the standard, it can be reasonably expected to be in compliance with the provisions of §6.260.

Fuel Oil #2 emission factor used for the dual fired boilers in TJ Hall, Havener Center, and the Residential Halls One and Two, were taken from AP-42 table 1.3-1 (9/98).

Attachment E1

Method 22 (Outdoor Observation Log)	
Emission Unit	
Observer	Date
Sky Conditions	
Precipitation	
Wind Direction	Estimated Wind Speed
Sketch process unit: Indicate the position relative to the source and sun; mark the potential emission points and/or the observing emission points.	

Observation Clock Time	Observation Period Duration (minute:second)	Accumulative Emission Time (minute:second)
Begin Observation		
End Observation		

Attachment E2

Method 22 Opacity Emission Observations For EU_______________				
Date	Method 22 Test Observer	Visible Emissions (yes/no)	Emissions normal? (yes/no)	If Visible emissions, was a method 9 done? (yes/no)

Attachment F

An example of a log for noting when an equipment malfunction causes visible emissions.

Equipment Malfunction Log			
Date	Equipment	Type of Malfunction	Did visible emissions trigger requirement for a Method 9 observation?

Attachment G

Method 9 Opacity Emission Observations	
Company	Observer
Location	Observer Certification Date
Date	Emission Unit
Time	Control Device

Hour	Min.	Seconds				Steam Plume (check if applicable)		Comments
		0	15	30	45	Attached	Detached	
	0							
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							

SUMMARY OF AVERAGE OPACITY				
Set Number	Time		Opacity	
	Start	End	Sum	Average

Readings ranged from _____ to _____ % opacity.
Was the emission unit in compliance at the time of evaluation? ____ ___ _____
YES NO Signature of Observer

Attachment H

10 CSR 10-3.060 *Maximum Allowable Emissions of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating*

Boiler	Fuel Type	MHDR (tons/hr)	Emission Factor (lb/ton fuel)	Pre-Control Potential to Emit (lb/MMBtu)	[2]Post-Control Potential to Emit (lb/MMBtu)	§3.060 Limit (lb/MMBtu)
EU0010 48.7 MMBtu Boiler #3	Bituminous Coal	2.2	[1]66	2.98	0.22	0.35
EU0020 67.2 MMBtu Boiler #4		3.055	66	3.00	0.23	0.35
EU0030 67.2 MMBtu Boiler #5		3.1	66	3.04	0.004	0.18
	Wood Chips	7.5	8.8	0.98	0.001	0.18

[1]AP-42 Section 1.1 Table 1.1-4 provides a PM emission factor (SCC 1-03-002-08) of 11 lbs/ton but gives it a poor rating. For purposes of this demonstration, a worse case scenario using a PM emission factor of 66 lbs/ton for (SCC 1-01-002-04/24) was used.
[2]EU0010 and EU0020 have a multicyclone as a PM control device providing 92.5% control efficiency and 100% capture. Permit Condition (EU0010 & EU0020) – 01 requires operation, inspection, and maintenance of the control device.
[2]EU0030 has a multicyclone followed by a baghouse providing an overall control efficiency of 99.88%
(*ie .overall control efficiency = 1- (1-75%)*(1-99.5%))*

As the table demonstrates, the emissions from the boilers are below the emission limits set forth in §3.060, therefore making an exceedance highly unlikely.

EU0040 through EU0070 - Other Small Boilers;

Unit	Fuels Combusted	§3.060 Standard (lbs/hr)	Maximum PM Emissions (lb/hr)	
			NG	Fuel Oil #2
TJ Residential Hall (EU0040) (Two - 8.7 MMBtu/Hr Dual Fired)	Natural Gas / Fuel Oil #2	6.09	0.13	0.24
Residential Hall One(EU0050) (Three 2.89 MMBtu Boilers)	Natural Gas / Fuel Oil #2	1.56	0.06	0.12
Havener Center Boilers (EU0060) (Two 1.699 MMBtu Boilers)	Natural Gas / Fuel Oil #2	1.04	0.04	0.08
Residential Hall Two (EU0070) (Two 2.1 (4.24) MMBtu dual fired)	Natural Gas / Fuel Oil #2	0.76	0.03	0.06

As the table demonstrates, the uncontrolled emissions from these dual fired boilers are well below the emission limits set forth in §3.060, therefore making an exceedance highly unlikely.

STATEMENT OF BASIS

Permit Reference Documents
These documents were relied upon in the preparation of the operating permit. Because they are not incorporated by reference, they are not an official part of the operating permit.

1) Part 70 Operating Permit Application, received November 9, 2004, revised February 28, 2005;
2) Compliance Assurance Monitoring (CAM) Plan received June 8, 2008, revised February 8, 2010;
3) 2008 Emissions Inventory Questionnaire; and
4) U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition.

Applicable Requirements Included in the Operating Permit but Not in the Application or Previous Operating Permits
In the operating permit application, the installation indicated they were not subject to the following regulation(s). However, in the review of the application, the agency has determined that the installation is subject to the following regulation(s) for the reasons stated.

Other Air Regulations Determined Not to Apply to the Operating Permit
The Air Pollution Control Program (APCP) has determined the following requirements to not be applicable to this installation at this time for the reasons stated.

10 CSR 10-6.100, *Alternate Emission Limits*
This rule is not applicable because the installation is in an ozone attainment area.

Construction Permit History

Permit No.	Description
0379-009	Construction of an 88 MMBtu/hr coal-fired boiler
1294-008	Use of pelletized paper as fuel in the three existing coal-fired boilers
0298-007	Installation of two (2) emergency generators
092000-006	Installation of two (2) natural gas burners to the existing 67.2 MMBtu/hr coal boiler.
102003-017	Installation of five (5) dual-fuel, 2.89 MMBtu/hr boilers and one (1) 75 kW emergency generator.

Construction Permit Revisions
The following revisions were made to construction permits for this installation:
1.) APCP Construction Permit #1294-008: The University of Missouri-Rolla has elected not to proceed with the combustion of paper pellets in its power plant as outlined in the construction permit. As a result, this permit does not appear in the operating permit because the process change was never put in place.
2.) APCP Construction Permit #0379-009 required an annual 5,300 ton limit for coal on boilers #3 and #4. U.S. EPA, Region VII requires that all throughput limitation be on a twelve (12)-month rolling basis for Title V permitting. As a result, the appropriate changes were placed into the Title V permit. The reporting requirements were also updated to reflect modern standard language.
3.) APCP Construction Permit #092000-006: The permit conditions were edited to reflect the name change from the University of Missouri- Rolla to Missouri University of Science and Technology.

2009 Emission Point Assignment	
Emission point Number	DESCRIPTION
EP-01	Boiler #3 - Bituminous Coal
EP-02	Boiler #4 - Bituminous Coal/Natural Gas
EP-03	Boiler #5 - Coal/Wood
EP-04	Diesel Generator (Emergency)
EP-05	Ash Handling System
EP-06	Ash Loadout System
EP-07	Coal Receiving
EP-08	Coal Storage Pile
EP-09	Coal Conveying And Transfer
EP-10	Woodchip Receiving
EP-11	Woodchip Conveying And Transfer
EP-12	Storage Tank - #2 Fuel Oil
EP-13	Thomas Jefferson Residence Hall Boilers 1 & 2
EP-14	Decommissioned - *Stuart Apartments Boilers-Heat & Domestic Hot Water*
EP-15	Decommissioned - *Miner Recreation Center Boilers 1,2,&3*
EP-16	Rock Mechanics Building Boiler
EP-17	General Services Buildings Boilers
EP-18	Bureau Of Mines No. 1
EP-19	Decommissioned – *Paint Booth*
EP-20	Decommissioned - *HIS Building Boiler*
EP-21	Decommissioned - *Printing Shop/Campus Support*
EP-22	Residential Hall One Boilers 3
EP-23	Havener Center Boilers (2)
EP-24	Residential Hall (2) Gas

New Source Performance Standards (NSPS) Applicability
None.

Maximum Available Control Technology (MACT) Applicability
This facility is not major for any Hazardous Air Pollutant (HAP).

Compliance Assurance Monitoring (CAM) Applicability
40 CFR Part 64, *Compliance Assurance Monitoring (CAM)*
The CAM rule applies to each pollutant specific emission unit that:

- Is subject to an emission limitation or standard, and
- Uses a control device to achieve compliance, and
- Has pre-control emissions that exceed or are equivalent to the major source threshold.

40 CFR Part 64 is applicable to Boiler #5 (EP-03) due to the unit having a pre-controlled PTE of particular matter (PM_{10}) above major levels.

Other Regulatory Determinations

10 CSR 10-3.060 *Maximum Allowable Emissions of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating*

The following table lists the remaining boilers on campus, along with the applicable §3.060 PM limit

Unit	§3.060 Limit	Fuels Combusted	Maximum PM Emissions (lb/MMBtu)		Maximum PM Emissions (lb/hr)	
			NG	FO	NG	FO #2
Natural Gas Fired Boiler At Bureau Of Mines #7; 1.457 MMBtu/Hr;	0.35 lb/MMBtu	NG	0.00745	N/A	0.010855	N/A
2 - 8.7 MMBtu/Hr Dual Fired (Natural Gas & Fuel Oil No.2)	0.18 lb/MMBtu	NG/FO #2	0.00745	0.014	0.12963	0.2436
Boiler Rock Mechanics		NG	0.00745	N/A	0.014304	N/A
Boiler General Services		NG	0.00745		0.017426	
DMSF		NG	0.00745		0.001237	
Temporary Research		NG	0.00745		0.002235	
Compressible Flow Lab		NG	0.00745		0.001863	
Bureau Of Mines #1 Boiler (EP-18)		NG	0.00745		0.04768	
Space Heating At Bureau Of Mines #3, #4, #5, And #8, 1.13 MMBtu/Hr, Natural Gas		NG	0.00745		0.008419	
Nagogomi Apartments		NG	0.00745		0.010728	
1606 Rolla St - Lovett House		FO #2		0.014		0.016121
1304 North Pine ("Pine Box")		NG	0.00745	N/A	0.002682	N/A
Space Heating/Hot Water At Dressing Building –1.942 MMBtu/Hr, Natural Gas		NG	0.00745		0.014468	
Round House (Fraternity Circle Dr.) – 1.0 MMBtu/Hr, Natural Gas		NG	0.00745		0.00745	
705 W. 14th (Eck House) - 0.168 MMBtu/Hr, Fuel Oil		FO #2		0.014		0.002352
709 W. 14th (Murphy House) - 0.1 MMBtu/Hr, Natural Gas		NG	0.00745		0.000745	N/A
611 W. 11th (Mace House) - 0.084 MMBtu/Hr, Fuel Oil		FO #2		0.014		0.001176
Health Center		NG	0.00745	N/A	0.002578	N/A
Multi Culture - Sw Bell		NG	0.00745		0.004209	
Allgood-Bailey Field House		NG	0.00745		0.014468	
Miner Golf Course		NG	0.00745		0.000857	

As with the natural gas fired and fuel oil #2 fired units listed on Attachment H, these units meet the limits of the rule with no emission controls. The heat input (Q) was summed campus wide (per §3.060(3)(C)) and used to calculate the facility wide PM limit per §3.060(4)(B) & §3.060(5)(B). As demonstrated below for natural gas and distillate oil (Fuel oils 1-4) combustion units smaller than 100 MMBtu, the ratio of emission rate to heat input is independent of the MHDR. This allows for demonstrating compliance by using given AP-42 emission factors for comparison with the limits after unit conversion. The applicable emission limit for a new unit (post-1971) is calculated in the above table to be 0.18 lb/MMBtu.

$$\text{Natural gas PM emission factor (lbs/MMBtu)} = \frac{7.6\ \text{lbs}/10^6\ \text{scf}}{1020\ \text{MMBtu}/10^6\ \text{scf}} = 7.45 \times 10^{-03}\ \text{lb/MMBtu}$$

(AP - 42 Table 1.4 - 2(7/98))

$$\text{Distillate Oil PM emission factor (lbs/MMBtu)} = \frac{2\ \text{lbs}/10^3\ \text{gal}}{140\ \text{MMBtu}/10^3\ \text{gal}} = 0.014\ \text{lb/MMBtu}$$

(AP - 42 Table 1.3 - 1(9/98))

As demonstrated, the expected emission rates from the small units listed in the preceding table are several orders of magnitude lower than the limit. Therefore, no specific requirements for the units listed in the preceding table were included in this permit for this rule. The emission rates found in the compliance demonstration for this rule in Attachment H were calculated by multiplying the emission factor (converted to lb/MMBtu as above) by the rated heat input for each unit.

10 CSR 10 CSR 10-6.260 *Restriction of Emission of Sulfur Compounds*
EU0030 – Boiler #5 – Since the 2% sulfur limitation and associated recordkeeping and monitoring is required from APCP Construction Permit #0379-009, there were no §6.260 conditions for this unit placed into this permit.

The following equations were used to determine compliance for the table found on Attachment D;
SO_2

$$\text{Natural gas } SO_2 \text{ emission factor (lbs/MMBtu)} = \frac{0.6\ \text{lbs}/10^6\ \text{scf}}{1020\ \text{MMBtu}/10^6\ \text{scf}} = 5.88 \times 10^{-4}\ \text{lb/MMBtu}$$

(AP - 42 Table 1.4 - 2(7/98))

$$\text{ppmv } SO_2 = \left(\frac{5.88\text{E} - 4\ \text{lb}}{\text{MMBtu}}\right) \times \left(\frac{\text{MMBtu}}{10{,}610\ \text{wscf}}\right) \times \left(\frac{\text{ppmw}}{1.667\text{E}^{-7}\ \text{lb/scf}}\right) \times \left(\frac{0.45\ \text{ppmv}}{\text{ppmw}}\right) = 153.3\ \text{ppmv}$$

(Appendix A – 7 to Part 60)

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$$\text{Distillate Oil } SO_2 \text{ emission factor } (\text{lbs/MMBtu}) = \frac{142(0.5)\ \text{lbs}/10^3\ \text{gal}}{140\ \text{MMBtu}/10^3\ \text{gal}} = 0.507\ \text{lb/MMBtu}$$

(AP - 42 Table 1.3 - 1(9/98))

$$\text{ppmv } SO_2 = \left(\frac{0.507\ \text{lb}}{\text{MMBtu}}\right) \times \left(\frac{\text{MMBtu}}{10{,}320\ \text{wscf}}\right) \times \left(\frac{\text{ppmw}}{1.660\text{E}^{-7}\ \text{lb/scf}}\right) \times \left(\frac{0.45\ \text{ppmv}}{\text{ppmw}}\right) = 133.22\ \text{ppmv}$$

(Appendix A – 7 to Part 60)

SO_3

$$\text{Distillate Oil } SO_3 \text{ emission factor } (\text{lbs/MMBtu}) = \frac{2(0.5)\,\text{lbs}/10^3\,\text{gal}}{140\,\text{MMBtu}/10^3\,\text{gal}} = 0.007\,\text{lb/MMBtu}$$

(AP - 42 Table 1.3 - 1(9/98))

$$\text{ppmv } SO_3 = \left(\frac{0.007\,\text{lb}}{\text{MMBtu}}\right) \times \left(\frac{\text{MMBtu}}{10{,}320\,\text{wscf}}\right) \text{x} \left(\frac{1.602\,\text{x}\,10^7\,\text{mg ft}^3}{\text{lb m}^3}\right) = 11.088\,\frac{\text{mg}}{\text{m}^3}$$

(Appendix A – 7 to Part 60)

For the Fuel Oil #2 fired emergency generators (worst case);

SO_2 emission factor for diesel engines < 600 HP, $EF = 0.29\left(\frac{lbs}{MMBtu}\right)$ (From AP-42 Table 3.3-1)

SO_2 emission factor for diesel engines > 600 HP, $\text{EF} = 1.01\text{S}\left(\frac{\text{lbs}}{\text{MMBtu}}\right)$ (From AP-42 Table 3.3-1),

Where S is the % sulfur in fuel oil. Assuming the maximum sulfur content is 0.5%, EF = 0.505 Lbs SO_2/MMBtu. Using this emission factor to demonstrate "worst case" for anticipated emission rates, the calculation is as follows;

Given: The F factor is the ratio of gas volume of products of combustion to the heat content of the fuel.

For fuel oil: $F_{factor} = \left(\frac{1\,MMBtu}{10{,}320\,wscf}\right)$ (From Part 60 Appendix A Method 19 Table 19-2)

Conversion factor for lb/scf to ppm, $\left(\frac{ppm}{1.660E^{-7}\,lb/scf}\right)$ (From Part 60 App. A Method 19 Table 19-1)

Conversion factor for ppmw to ppmv, $\frac{\left(\frac{28.8}{MW_{SO2}}\right)}{1\,ppmw} = \frac{\left(\frac{28.8}{64.0}\right)ppmv}{ppmw} = \left(\frac{0.45\,ppmv}{ppmw}\right)$

(From AP-42 Appendix A)

Compliance Demonstration

$$\text{ppmv } SO_2 = \left(\frac{0.505\,\text{lb}}{\text{MMBtu}}\right) \times \left(\frac{\text{MMBtu}}{10{,}320\text{wscf}}\right) \times \left(\frac{\text{ppmw}}{1.667\text{E}^{-7}\,\text{lb/scf}}\right) \times \left(\frac{0.45\text{ppmv}}{\text{ppmw}}\right) = 132.10\ \text{ppmv}$$

132.10 ppmv SO_2 << 500 ppmv SO_2 therefore demonstrating that an exceedance of the standard is highly unlikely. For this reason, no provisions for this rule were placed in this permit for the emergency generators.

10 CSR 10-6.350: *Emission Limitation and Emissions Trading of Oxides of Nitrogen*
The electric generating capacity of the powerplant is less than 25 MW, and therefore is not subject to this rule.

10 CSR 10-6.400 *Restriction of Emission of Particulate Matter From Industrial Processes.*
§6.400(B)13 exempts the grinding, crushing and conveying operations at a power plant. Therefore provisions of this rule were not applied to units Coal/Wood Chip Receiving (EP-07, EP-10) and Coal/Wood Chip Conveying (EP-09, EP-11). PM emissions from Unit Coal Storage (EP-08) are fugitive and exempt from this rule per §6.400(B)7. The ash handling system has an uncontrolled PM emission rate of 1.8 lbs/hr which is much less than the calculated 6.400 limit of 21.67 lbs/hr. Therefore, this unit is exempt from this rule per §6.400(1)(B)16.

Other Regulations Not Cited in the Operating Permit or the Above Statement of Basis
Any regulation which is not specifically listed in either the Operating Permit or in the above Statement of Basis does not appear, based on this review, to be an applicable requirement for this installation for one or more of the following reasons:
1. The specific pollutant regulated by that rule is not emitted by the installation;
2. The installation is not in the source category regulated by that rule;
3. The installation is not in the county or specific area that is regulated under the authority of that rule;
4. The installation does not contain the type of emission unit which is regulated by that rule;
5. The rule is only for administrative purposes.

Should a later determination conclude that the installation is subject to one or more of the regulations cited in this Statement of Basis or other regulations which were not cited, the installation shall determine and demonstrate, to the Air Pollution Control Program's satisfaction, the installation's compliance with that regulation(s). If the installation is not in compliance with a regulation which was not previously cited, the installation shall submit to the APCP a schedule for achieving compliance for that regulation(s).

Prepared by:

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