VIA E-MAIL

December 8, 2009

Mr. James Morse  
Kentucky Division for Air Quality  
200 Fair Oaks Lane, 1st Floor,  
Frankfort, KY 40601  
E-mail James.Morse@ky.gov

Re: Sierra Club comments on  
EKPC Spurlock Permit V-06-007R3

Dear Mr. Morse:

On behalf of the Sierra Club and its hundreds of thousands of members who are adversely affected by the air pollution from East Kentucky Power Cooperative’s coal-fired Hugh L. Spurlock Generating Station Unit #4 (Spurlock 4) I am writing to submit comments on the latest permit revision which the Kentucky Division for Air Quality (DAQ) appears to have labeled V-06-007R3 (Permit). Unfortunately, the Permit is blatantly illegal. Even if the Permit did not clearly defy Administrator Jackson’s order issued to DAQ, the Permit would still be seriously flawed.

Before turning to the merits, or lack thereof, of the Permit, we first want to mention our concern regarding public participation. DAQ’s web site says that the draft permit was revised on 4/18/08. See Ex. 1. In addition, the Permit available on DAQ’s web site says that it was revised on 4/18/08. See Ex. 2 at First Page. Yet the public notice for this Permit was issued in November of 2009. The DAQ web site also says that revision 2 of the Permit was issued on 4/18/08. This all leads to confusion as to whether Ex. 2 is actually the permit currently open for public comment. On December 8, 2009, the undersigned e-mailed DAQ’s Ben Markin, who is listed in the public notice as the person to whom questions should be directed.1 The e-mail asked Mr. Markin for clarification on this issue. Mr. Markin has yet to reply to this e-mail.

DAQ’s public participation practices were criticized by the Administrative Law Judge who reviewed the Spurlock 4 PSD permit and more recently by the U.S. EPA Administrator with regard to the Trimble II permit. Failure to make it clear what permit is even open for public comment is another example of public participation practices that are inadequate.

1 All documents referenced in these comments that are in DAQ’s possession are incorporated herein by reference.
1) THE PERMIT IS ILLEGAL BECAUSE IT FAILS TO CONTAIN A CASE BY CASE MACT DETERMINATION.

A. DAQ MUST FOLLOW EPA’S ORDER AND ISSUE A REVISED PERMIT WITH A CASE-BY-CASE MACT DETERMINATION

The Permit is illegal because it fails to contain a case-by-case MACT determination for Spurlock 4. See Ex. 2 at 25, applicable requirements. However, EPA ordered DAQ to perform a case-by-case MACT determination for Spurlock 4 and modify the Spurlock Title V permit to include that determination. See In the Matter of EKPC Spurlock Station Permit V-06-007 (Revision 2), Order Granting Issue 3 of April 28, 2008 Clean Air Act Title V Petition (Order) attached as Ex. 3.

The DAQ public notice states that EPA’s objection asked KDAQ to “address 112(g) applicability for all hazardous air pollutants,” which KDAQ proposes to do by “issuing a revised proposed permit [that] includes additional emission limits, monitoring, testing, and recordkeeping conditions to ensure that limits of HAPs from CFB Unit 4 are enforceable as a practical matter and to preclude applicability of Section 112(g) of the Clean Air Act.”

What the EPA Order actually says, however, is that “EPA is granting issue 3 in the Petition because CFB unit 4 is subject to 112(g) case-by-case MACT requirements.” Ex. 3 at p. 5. EPA is also stated that “EPA agrees with Sierra Club that KDAQ must undertake a 112(g) case-by-case MACT determination for HAPs for Unit 4,” that “KDAQ must develop case-by-case MACT limits consistent with section 112(g),” and that “KDAQ must revise the EKPC Spurlock Title V permit to include case-by-case MACT limits.” Ex. 3 at p. 7. DAQ even acknowledged this in the Revised Permit Statement of Basis (Revised SOB) at 1 when DAQ stated:

Specifically, the Division was ordered to revise the final Title V permit to include case-by-case Maximum Achievable Control Technology (MACT) limits on HAP emissions for CFB Unit 4, and, if necessary, a compliance schedule with dates for compliance with the case-by-case MACT limits.

Ex. 4 at 1.

However, in the Permit, DAQ disregarded the EPA’s Order. Instead, DAQ explains in the Revised SOB:

In a letter dated October 5, 2009, the Division requested EKPC to adequately address U.S. EPA’s Order regarding the applicability of CAA Section 112(g). The Division requested emission calculations and supporting information for all HAPs emitted from CFB Unit 4 to provide a case-by-case analysis for the control of individual HAPs, or as an alternative, submit a demonstration that CFB Unit 4 is minor for HAPs and not subject to the requirements of CAA Section 112(g).

...
The total combined potential HAP emissions for CFB Unit 4 are predicted not to exceed 22.5 tons per year. Additionally, potential emissions of HCl, the single HAP emitted in largest quantity, are predicted not to exceed 9.0 tons per year. Therefore, CFB Unit 4 is a minor source for HAPs and is not subject to a case-by-case MACT determination requirement under CAA Section 112(g).

Ex. 4 at 1, 5

Thus, contrary to the EPA Order, DAQ did not make a case-by-case MACT determination for Spurlock 4 and modify the Spurlock 4 Title V permit to incorporate that determination. DAQ’s failure to do so violates the Clean Air Act.

42 U.S.C. § 7661d(c) provides that DAQ must submit a permit revision to EPA that is “revised to meet the objection[.]” Here, the objection was that the Spurlock Title V permit fails to contain a case-by-case MACT determination for Spurlock 4. Ex. 3 at 5,7. The Permit does not contain a case-by-case MACT determination for Spurlock 4. See Ex. 2. Thus the Permit fails to meet EPA’s objection in violation of 42 U.S.C. § 7661d(c).

Below we will explain why EPA is correct and that Spurlock 4 is currently subject to the case-by-case MACT requirements contrary to DAQ’s latest decision. However, in the end, none of these reasons matter. EPA has issued its Order and the Clean Air Act, not to mention the Supremacy Clause of the U.S. Constitution, do not allow DAQ to unilaterally overrule EPA’s order. As the U.S. Court of Appeals for the 11th Circuit put it,”[w]hen it comes to the Title V permitting process, [DAQ] is not a board of pardons.” Sierra Club v. Johnson, 436 F.3d. 1269, 1280 (11th Cir. 2006).

B. THE CLEAN AIR ACT’S “ONCE IN, ALWAYS IN” PROVISIONS MANDATES THAT SPURLOCK 4, WHICH COMMENCED CONSTRUCTION AND OPERATION, HAVE A CASE-BY-CASE MACT DETERMINATION

The Clean Air Act provides that once a source is a major source of hazardous air pollutants, it cannot subsequently avoid hazardous air pollutant emission limits by later obtaining a permit modification. See e.g. Ex. 5. In other words, East Kentucky Power Cooperative cannot unring the section 112 bell.

Prior to commencing construction and operation of Spurlock 4, EKPC and DAQ both determined that Spurlock 4 had a potential to emit hazardous pollutants (HAPs) over the MACT major source threshold. See Ex 6 at 8th page (EKPC admitting: “When the application was submitted in 2004, Spurlock 4 was subject to the requirements of Section 112 of the Clean Air Act relating to the emissions of hazardous air pollutants (HAPs) based on EPA's December 2000 decision to list EGUs as a major source category.”); Ex. 7 (Prevention of Significant Deterioration Analysis for a Proposed New Electric Utility Boiler in Maysville, Kentucky, East Kentucky Power Cooperative Hugh L. Spurlock Generating Station E.A. Gilbert Unit 4 at p. 2-10, showing Spurlock Unit 4’s potential to emit of all hazardous air pollutants is 52.4 tons per year and potential to emit of a single hazardous air pollutant, hydrochloric acid, is 42.602 tons
per year); Ex. 8 at 2 (Kentucky Division of Air Quality states that Spurlock Unit 4’s potential to emit of hydrochloric acid is 36 tons per year). See also 42 U.S.C. § 7412(a)(1) (defining “major source” as “any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year of any [HAP] or 25 tons per year of more of any combination of [HAP]”). Thus, EKPC’s decision to request a synthetic minor cap years after it commenced construction, does not, as a matter of law, mean that the case-by-case MACT requirements are not applicable.

C. EAST KENTUCKY POWER COOPERATIVE MODIFIED SPURLOCK STATION BY THE ADDITION OF SPURLOCK 4. THIS MADE THE CASE BY CASE MACT REQUIREMENTS APPLICABLE TO SPURLOCK 4

East Kentucky Power Cooperative’s modification to the Spurlock Generating Station—by adding Unit 4 means that the case-by-case MACT requirements are also applicable to Spurlock 4 via 42 U.S.C. § 7412(g)(2)(A), which provides:

… no person may modify a major source of hazardous air pollutants in such State, unless the Administrator (or the State) determines that the maximum achievable control technology emission limitation under this section for existing sources will be met. Such determination shall be made on a case-by-case basis where no applicable emissions limitations have been established by the Administrator.

Prior to constructing Spurlock Unit 4, the Spurlock power plant was a major source for hazardous air pollutants because it had the potential to emit greater than 10 tons of any single hazardous pollutant and more than 25 tons of all hazardous pollutants, combined, annually. See e.g. Ex. 8 at 2. In 2005, 2006 and 2007, actual emissions of just five Hazardous Air Pollutants were as follows:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Beryllium</td>
<td>0.0124556</td>
<td>0.0152519</td>
<td>0.018983</td>
</tr>
<tr>
<td>Hydrochloric Acid</td>
<td>1495.3923104</td>
<td>1350.9402552</td>
<td>95.5957634</td>
</tr>
<tr>
<td>Hydrofluoric Acid</td>
<td>186.9377453</td>
<td>199.7449892</td>
<td>197.6923946</td>
</tr>
<tr>
<td>Lead</td>
<td>0.1834434</td>
<td>0.2042420</td>
<td>0.1777237</td>
</tr>
<tr>
<td>Mercury</td>
<td>5.0918791</td>
<td>5.4434016</td>
<td>5.6112215</td>
</tr>
</tbody>
</table>

permit application for Spurlock Unit 4, Unit 4 will emit, and thereby increase hazardous air pollutants from the Hugh L. Spurlock Generating Station, by the following quantities of those five pollutants:

Hazardous Air Pollutant Potential to Emit from Unit 4 (in tons per year):

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Potential to Emit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beryllium</td>
<td>0.017</td>
</tr>
<tr>
<td>Hydrochloric Acid</td>
<td>36</td>
</tr>
<tr>
<td>Hydrofluoric Acid</td>
<td>5.764</td>
</tr>
<tr>
<td>Lead</td>
<td>0.07</td>
</tr>
<tr>
<td>Mercury</td>
<td>0.033</td>
</tr>
</tbody>
</table>

Ex. 8, p. 2 (HCl and lead potential to emit); Ex. 7 (Permit Application), Table 2-2.

This represents increases in the following percentages the Spurlock plant’s 2007 emissions:

<table>
<thead>
<tr>
<th>Hazardous Air Pollutant</th>
<th>2007 Emissions (in tons)</th>
<th>Potential to Emit from Unit 4 after Pollution controls (in tons per year)</th>
<th>Percentage Increase from 2007 Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beryllium</td>
<td>0.018983</td>
<td>0.017</td>
<td>89.6%</td>
</tr>
<tr>
<td>Hydrochloric Acid</td>
<td>95.5957634</td>
<td>36</td>
<td>37.7%</td>
</tr>
<tr>
<td>Hydrofluoric Acid</td>
<td>197.6923946</td>
<td>5.764</td>
<td>6.9%</td>
</tr>
<tr>
<td>Lead</td>
<td>0.1777237</td>
<td>0.07</td>
<td>39.4%</td>
</tr>
<tr>
<td>Mercury</td>
<td>5.6112215</td>
<td>0.033</td>
<td>0.6%</td>
</tr>
</tbody>
</table>

Id.

Additionally, potential emissions of all Hazardous Air Pollutants increase by 52 tons per year after the addition of Spurlock Unit 4. Ex. 7, Table 2-2 (providing that Hazardous Air Pollutant emissions will increase 52.400 tons per year). Therefore, adding Unit 4 was a modification for purposes of 42 U.S.C. § 7412(g)(2)(A) because it was a “physical change in… a major source which increase[d] the actual emission of any hazardous air pollutant emitted by such source by more than a de minimus amount...” 42 U.S.C. § 7412(a)(5). Specifically, adding Unit 4 the Spurlock plant increased potential emissions of hazardous air pollutants, after pollution controls, by fifty-two (52) tons per year. This included increases of 36 ton of Hydrochloric Acid (HCl) from the plant’s emission rate in 2007 (37.7% increase) and of 5.76 tons of Hydrofluoric Acid from the 2007 emission rate (6.9% increase). The 52 ton increase in all Hazardous Air Pollutant potential emissions is more than twice the threshold for an entire facility to be considered a “major source.” 42 U.S.C. § 7412(a)(1) (defining a “major source” as any group of emission sources on a contiguous property that “25 tons per year or more of any combination of hazardous air pollutants.”). Additionally, the 36 ton increase in Hydrochloric Acid, alone, is more than three times the threshold for an entire facility to be considered a “major source,” and more than the threshold even when all Hazardous Air Pollutants are counted. Id. (defining “major source” as any source that emits more than 10 tons per year of one pollutant, or 25 tons per year of all pollutants). Moreover,
the increases from 2007 emission rates represent significant percentages—well beyond “de minimum” increases. 42 U.S.C. § 7412(a)(5).

There is no regulation defining “de minimus” in 42 U.S.C. § 7412(a)(5), but no regulation is necessary. To the extent that EPA has weighed in on what qualifies as a “de minimus” amount of Hazardous Air Pollutants, it has used 1000 pounds per year (0.5 tons/year), or less. See e.g., 60 Fed. Reg. 34,488 (July 3, 1995) (approving an operating permit program that includes exemptions from permit requirements for sources that emit, at most, 1000 pounds of HAPs). For other Clean Air Act programs, EPA has defined “de minimus” as 2-4% of a regulatory threshold such an ambient air quality impact standard. See e.g., 45 Fed. Reg. 52,676, 52,707-08 (August 7, 1980) (establishing “de minimus” thresholds for increases from major modifications based on estimates of emissions that will result in ambient air impacts of 2-4% of the air quality standards); see also 61 Fed. Reg. 38,292 (July 23, 1996) (“The EPA believes that where a proposed source contributes less than four percent to the [applicable air standard],” those emissions are de minimus). Sierra Club believes that these thresholds of 1000 pounds or 2-4% of the regulatory standard are well beyond the reasonable meaning of “de minimus,” especially for pollutants that do not have a “safe” level. But even applying them in this case as an overly generous definition of “de minimus” to East Kentucky Power Cooperative, the construction of Unit 4 causes HAP emission increases are well in excess of 1000 pounds or 2-4% of regulatory thresholds. Here, total HAP emission increases are above 104,000 pounds, which is well beyond 1000 pounds and more than 200% of the definition of a major source. Therefore, the case-by-case MACT requirements are an applicable requirement to Spurlock 4, and really to all of the Spurlock units, because the addition of Spurlock 4 was a modification of Spurlock that triggered these requirements.

2) THE LIMITS IN THE PERMIT ARE NOT ENFORCEABLE AS A PRACTICAL MATTER

As explained above, EPA has already ruled that the case-by-case MACT requirements are applicable to Spurlock 4. That is the end of the matter. However, below we explain that even if DAQ had the authority to issue a synthetic minor permit for Spurlock 4, the Permit is not adequate for that task.

A) THE HCL LIMIT MUST REQUIRE A CEMS TO ENSURE COMPLIANCE WITH IT.

The Permit and the Revised SOB are not consistent with regard to the hydrochloric acid (HCL) limit. This will make it difficult, if not impossible, for the Permit to be enforceable as a practical matter.

The Permit says HCL compliance will be determined by one stack test and emission factors. See Permit at 27, Condition 2.o. Later on, the Permit does say that the HCL CEMs will be used to determine compliance. See Permit at page 77, Condition D.4. However, page 31 of the Permit makes it appear as if CEMs are only used as a way to determine if a stack test is
required. See Permit at 31, condition 4.O.1. Of course, stack tests cannot actual tell one if Spurlock 4 is complying with the 9 ton per year. They only provide a snap shot of emissions at a particular time. However, the Revised SOB says that compliance will be determined with a HCL CEMs and sets forth procedures for calculating compliance, including how to deal with missing data. See Revised SOB at 4. The Permit, in order to be enforceable as a practical matter, needs to be crystal clear that HCL CEMs are used to determine compliance with the annual HCL limit. As DAQ itself has stated, HCL emissions vary at EKPC’s coal-fired CFBs by as much as 400% at the same unit. See Ex. 12 at page 6-7.

In order to make the HCL 9 ton per year emission limit enforceable as a practical matter, the following language needs to be deleted out of Condition 2.O on Page 27:

Compliance shall be demonstrated by annual performance using Method 26 for HCL emissions and calculations using the emission factors in the Appendix to this permit or emission factors derived from testing. Any emission factors derived from testing shall supersede the emission factors listed in the Appendix. Testing is not required for all pollutants listed in the Appendix except as specified in Subsection 3 (c).

Similarly, the following language needs to be deleted out of Condition 4.O.1 on page 31:

  to demonstrate compliance with the annual limit.

The Final Revised Statement of Basis must also make clear that the stack test required in Condition 4.O.1 is only a RATA test and does not affect the use of the HCL CEMS data for compliance purposes.

  Furthermore, condition J on page 30 of the Permit directly contradicts the data correction methodology identified in the Revised SOB and is inconsistent with Condition O.2 on page 31. The Permit needs to resolve this conflict by stating that Condition J does not apply to the HCL CEMs.

  There also needs to be some quality control method required for the HCL CEMs. If there is an EPA approved performance specification, the Permit should state that EKPC will comply with this and submit certification of such to DAQ. If not, RATA or some other method must be specified in the Permit.

  As to the missing data methodology, DAQ states in the Revised Statement of Basis: “Therefore, resulting data less than the mdl will be substituted with the value equaling 75% of the mdl.” Revised SOB at 4. See also Permit at 31, Condition O.2. The Revised Statement of Basis does not provide the factual or legal basis for using the 75% figure. It appears to a member of the public reviewing these documents as if DAQ just made up the 75% figure out of thin air. The way to ensure that emissions do not exceed the major source threshold is to require that data below the minimum detection limit be reported as at the detection limit. We strongly suspect that if such a requirement is placed in to the Permit, it will turn out that EKPC will be able to
obtain an HCL CEMS with a much lower minimum detection limit than the minimum detection limit claimed by Mr. Roberson as noted in the Revised SOB.

In Section 5 of the Permit, Specific Record Keeping Requirements, the Permit must require the permittee to record all information needed to calculate actual HCL mass emissions from the HCL CEMS data. This would include any information to convert the HCL CEMS data, if it is in parts per million, into a mass emission rate, in pounds per hour, as well as HCL CEMS down time and substituted data.

In Section 6, Reporting, the Permit must require the permittee to report the hourly HCL emissions in mass, that is pounds per hour, including an identification of any hours in which substitute data is used, the monthly average HCL mass emissions for each month and the 12 month rolling average HCL mass emissions.

B) THE PERMIT DOES NOT HAVE SUFFICIENT TESTING, MONITORING, AND REPORTING FOR OTHER HAPS

The Permit does not have sufficient testing, monitoring and reporting for HAPs other than HCL. For some HAPs, the Permit relies upon emission factors. EPA has repeatedly ruled that this is not sufficient for limits on PTE. This is especially true because EPA has separately objected to the SOx BACT limit for Spurlock 4. This objection should lead to the use of a different, lower sulfur, coal, which will likely alter some of the emission factors. The emission factors are further problematic because the emission factors are in lbs/MBtu heat input and there is no limit on the heat input in the Permit and no requirement to report the actual heat input in the semi-annual or annual compliance reports. For other HAPs, the Permit relies on one stack test over the lifetime of the Permit. Again, EPA has repeatedly held that one stack test over the lifetime of a permit is not sufficient.

The Permit must require CEMs for those HAPs which can be measured by CEMS. For those that cannot, the Permit should require annual stack tests to come up with an emission factor. For those HAPs whose emissions are affected by coal quality, the stack test should include an analysis of coal quality. The Permit should then require daily coal quality analysis and the coal quality analysis should be used to adjust the emission factor. The Permit must also have an enforceable heat input limit and a requirement to report actual heat input, as well as monthly and 12 month rolling averages of mass emissions of all HAPs.

C) THE REVISED SOB IGNORES THE PERMIT’S PROVISION ALLOWING FOR THE USE OF TIRE DERIVED FUEL

The Revised SOB is inadequate because it also ignores that fact that Spurlock 4 is permitted to burn up to 10% tire derived fuel. The Revised SOB contains no analysis of how burning tire derived fuel will affect Spurlock 4’s HAPs emissions. In addition, the Permit does not require any stack testing to see if emissions of HAPs other than HCL are higher when burning tire derived fuel than when burning coal. Therefore, the Permit either needs to delete the authorization to burn tire derived fuel or it needs to require stack testing of all HAPs when burning the maximum permitted tire derived fuel, the creation of emission factors for use when
burning tire derived fuel and daily chemical analysis of tire derived fuel to be used in adjusting the emission factor to reflect that actual composition of the tire derived fuel.

3) THE HCL MACT LIMIT SHOULD BE NO HIGHER THAN THE LIMIT CURRENTLY IN THE PERMIT WITH CEMS USED TO MONITOR COMPLIANCE

When setting the HCL case-by-case MACT limit, DAQ must set the limit no higher than the emission factor it put into the Permit, that is 2.66E-04 lb/MMBtu. See Ex. 2 at 99. The case-by-case MACT limit must also contain an enforceable heat input limit of 2800 MMBtu/hr because that is what DAQ’s analysis of this Permit was based upon. Because HCL is accurately toxic, the limit must be short term such as a 3 hour averaging time. See e.g. http://www.epa.gov/ttn/atw/hlthef/hydrochl.html. The CEMS requirement should remain in the Permit to protect the people of Kentucky from this toxic substance.

4) MISCELLANEOUS

Finally, note that there appears to be a typo in the permit. Page 25 states: “40 CFR 64, Compliance Assurance Monitoring; (for NOx, PM/PM10, HCl and SO2);” It should probably be HCL and not HCk.

Respectfully submitted,

/s Robert Ukeiley

Robert Ukeiley
Counsel for Sierra Club

Cc: Art Hofmeister, EPA Region 4
Attachments Ex. 1 to Ex. 12.