Message

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Sent: 12/10/2018 10:03:25 PM
To: Jenny Acker (jlacker@idem.in.gov) [jlacker@idem.in.gov]
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Subject: Riverview Energy Corporation - 39554 - Comments

Hi Jenny,

We have reviewed the draft PSD permit for Riverview Energy Corporation, permit number 147-39554-00065.

We have the following comments on the draft permit. Please note that we have separated our comments into three sections: permit comments, BACT analysis comments, and modeling comments.

Please let us know if you have any questions.

Permit Comments

1.) Condition D.1.1 incorporates PM, PM_{10}, and $PM_{2.5}$ best available control technology (BACT) requirements for the coal handling operations. The BACT determination requires 0% visible emissions from the entrance and exit doors of the unloading enclosure at any time. However, the permit does not appear to include monitoring or recordkeeping requirements to determine compliance with this BACT requirement. 326 IAC 2-7-5(3) and 40 C.F.R. 70.6(a)(3) require the part 70 permit to include monitoring and sufficient recordkeeping to obtain reliable data representative of the source's compliance with the permit. We request that you either add periodic visible emissions monitoring requirements to the permit or explain how the draft permit currently requires the source to demonstrate compliance with the limit.

2.) Condition D.1.8 requires daily recordkeeping of the negative pressure and inward velocity of the unloading enclosure, but not the coal storage enclosure. Condition D.1.6 requires the source to either maintain negative pressure or maintain a minimum inward flow velocity through each opening. We request that you include similar coal stockpile enclosure recordkeeping requirements to determine compliance with condition D.1.6.

3.) Condition D.1.8(a) requires the Permittee to take a reasonable response when a monitored enclosure parameter is outside of the established range. However, condition D.18(a) does not establish reasonable response requirements. We understand that section C.16 of the draft permit (Responses to Excursions and Exceedances) is typically referred to whenever a reasonable response is required. If section C.16 applies, we suggest referring to it in this condition. Otherwise, we request that you specify any reasonable response requirements, such as the expected response, when the permittee must reasonably respond, and any appropriate recordkeeping requirements to demonstrate that a reasonable response was taken.

4.) Condition D.1.9 generally requires the Permittee to inspect the unloading enclosure and storage enclosure once per month. However, this condition does not specify what constitutes a failed inspection nor does it establish any response requirements to a failed inspection. We note that conditions D.1.5(a) and D.1.6(a) require each enclosure to be free of cracks, gaps, corrosion, or other deterioration. If these the conditions necessitate the inspection requirement, then the inspection requirement should require the

source to take timely, appropriate action if the enclosures are cracked, have gaps, are corroded, or are otherwise deteriorated.

5.) Condition D.3.1(a)(2), (c)(2), (d)(2), (e)(2), and (f)(3) and D.4.1(l) require the Permittee use good combustion practices. This includes flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature monitoring and maintaining each parameter within the manufacturer's recommended operating guidelines or in a range otherwise indicative of proper operation of the emissions unit.

   a. Combustion air flow and flue gas temperature monitoring and recordkeeping requirements do not appear in the permit. We request that you either include air flow and flue gas temperature monitoring in the permit or explain how air flow and flue gas temperature monitoring already occurs as part of the permit.

   b. We request that you specify how the permittee may establish alternate operating parameters that indicate of proper operation of the emissions unit. As written, the permit appears to allow the Permittee to establish alternate operating guidelines in any way and at any time. Further, the permit does not appear to require the Permittee to maintain records showing how the alternate parameters were established.

6.) Condition D.4.1(d) incorporates an SO_2 concentration BACT limit applicable to the tail gas treatment unit (TGTU) stacks. For clarity, we suggest that you specify that the limit applies to each stack separately. As written, it appears that the limit may apply to both stacks combined.

7.) Condition D.4.1(k) incorporates an opacity requirement as BACT. However, the permit does not require opacity monitoring or testing. Both 326 IAC 2-7-5(3) and 40 C.F.R. § 70.6(a)(3) require the permit to include monitoring and sufficient recordkeeping to obtain reliable data representative of the source's compliance with the permit. We request that you either add periodic opacity monitoring and testing to the permit or provide justification demonstrating that opacity monitoring is not required.

8.) Condition D.4.6(b)(1) requires alternate SO_2 monitoring during SO_2 CEMS downtime. We request that you clarify what this condition means when it says "as required". Based on our discussion with your staff, we understand that this requirement only applies to the emission unit with the failed SO2 CEMS. The other emission unit with an operational SO_2 CEMS is still required to use the CEMS to determine compliance with the SO_2 limits.

9.) Condition D.9.2 establishes annual operating requirements for both the emergency generator and emergency fire pump. These requirements are being included to ensure the assumptions made in the air quality analysis are enforceable. 40 C.F.R. 51 Appendix W Table 8-2 states that the operating factor must be modeled for all hours of each time period under consideration. Appendix W Table 8-2 footnote 2 further states that the modeled emission rate may be adjusted if it is constrained by a federally enforceable permit condition for all hours of the time period of consideration. We request that you either include a daily limit on the number of hours the generator and the fire pump may operate to allow for an adjusted modeled emission rate in the short-term analysis or provide justification explaining why a short-term limit is not necessary.

10.) Condition E.1.2 incorporates the requirements of 40 C.F.R. Part 60 Subpart Db. We request that you verify whether the following requirements apply.

   a. Condition E.1.2(7) and (8) refer to 40 C.F.R. Part 63, not 40 C.F.R. Part 60.
   b. Condition E.1.2(18) should also include 40 C.F.R. 60.48b(e)(3). This requirement describes how span values calculated in 40 C.F.R. § 60.48b(e)(2) should be rounded.

11.) Condition E.5.2(5) incorporates 40 C.F.R. § 60.252(b)(2). However, TSD page 41 states more specifically that 40 C.F.R. § 60.252(b)(2)(iii) applies. We request that you verify whether the permit should contain the requirements as described in the TSD.

12.) Condition E.11.2(3) cites 40 C.F.R. § 61.304(i), but should instead be 40 C.F.R. § 61.305(i) as stated on TSD page 53.

13.) Condition E.12.2 does not include 40 C.F.R. § 61.342. However, TSD page 55 states that this requirement applies. We request that you verify whether 40 C.F.R. § 61.342 should be included in the permit.

14.) Condition E.13.2 incorporates the requirements of 40 C.F.R. Part 63 Subpart CC. We request that you verify whether the following requirements are applicable and update the permit as necessary.

a. 40 C.F.R. §§ 63.670 and 63.671 are not included in the permit. However, TSD page 63 states that each requirement is an applicable requirement.

b. Table 6 is not included in the permit. However, 40 C.F.R. § 63.642 is included in the permit and states that the general provisions apply as specified in Table 6.

15.) Condition E.15.2 incorporates the requirements of 40 C.F.R. Part 63 Subpart UUU. We request that you verify whether the following requirements are applicable and update the permit as necessary.

a. 40 C.F.R. § 63.1563(d) is not included in the permit, but TSD page 69 says it applies.
b. 40 C.F.R. § 63.1568(a)(2), (a)(3), (a)(4)(i), (b), and (c) are not included in the permit, but TSD page 69 says each requirement applies.
c. Tables 29, 30, 31, 33, 34, 35, 40, 41, 42, 43, and 44 are not included in the permit, but TSD pages 69-70 says each table applies.

16.) 40 CFR Part 63, Subpart CC, at 40 CFR § 63.648(a), requires each owner or operator of a new source subject to the provisions of Subpart CC to comply with the National Emission Standards for Hazardous Air Pollutants (NESHAPs) from the Synthetic Organic Chemical Manufacturing Industry for Equipment Leaks, 40 CFR 63, Subpart H, except as provided in 40 CFR 63.648(c) through (j). TSD Page 55 states *"The requirements of ... 40 CFR 63, Subpart H ... are not included in the permit. The source is not subject to provisions of 40 CFR 63, Subpart CC that reference this subpart. Pursuant to 40 CFR 63.640(p)(2), equipment leaks subject to 40 CFR 63, Subpart CC that are also subject to 40 CFR 60, Subpart GGGa are required to comply only with the provisions specified in 40 CFR 60, Subpart GGGa."*

However, the permit indicates the T16 Slop Tank and Biological wastewater treatment bioreactor exhausting to EU-8001 are affected facilities under 40 CFR 63 Subpart CC and are not subject to 40 CFR 60 Subpart GGGa. We note that TSD calculations (Appendix A, pages 27 and 39) indicate these units have the potential to emit HAPs, though it is unclear whether they meet the definition of being "in organic HAP service". We request that IDEM review whether 40 CFR 63, Subpart H applies to these emission units, and revise the permit, if needed.

17.) Permit conditions D.1.7, D.2.5 and D.8.5 require the source to monitor the pressure drop across several fabric filter control devices at least once per day when the associated emissions unit is in operation. This monitoring is conducted to assure continuous compliance under Part 70 for BACT particulate limits. We recommend that IDEM and the source consider using bag leak detection systems (BLDS) for compliance monitoring instead of daily monitoring of pressure drop for each baghouse. For

the reasons below, more stringent monitoring might be appropriate to assure continuous compliance under Title V and CAM.

The emission units are subject to PM, PM10 and PM2.5 BACT limits ranging from 0.002 to 0.0022 gr/dscf. The TSD calculations appear to imply a very high control efficiency from the fabric filters must be maintained for certain units to assure compliance with the BACT limits (*e.g.*, refer to the pre- and post-control PM, PM10 and PM2.5 emissions from EU-1008, on TSD Appendix A, pages 10-11). Some emissions units (EU-1008, EU-1504 and EU-2005) are also subject to Compliance Assurance Monitoring under 40 C.F.R. Part 64. BLDS may be appropriate for these emission units to assure the baghouses are operating at a level that achieves continuous compliance.

BLDS is utilized by facilities with similar operations. For example, the BACT analysis indicates that the selected particulate BACT emission limits for several processes were established from facilities that also utilize leak detection systems. Refer to the coal milling/drying (EU-1008) system, the additive preparation system (EU-1504), and various additive conveyors (see TSD, Appendix B, pages 28-30). Furthermore, continuous performance data provided by BLDS may have other ancillary benefits to the source with respect to proactive and predictive maintenance - reducing maintenance costs and avoiding critical baghouse failures.

18.) Permit conditions D.12.1(a), E.6.1 and E.6.2 indicate that emission units are subject to the general provisions of NSPS Subpart A and the leak detection and repair program requirements of NSPS Subpart GGGa (refer to 40 CFR § 60.592a). We wish to highlight that the NSPS general provisions give owners/operators the option to identify leaking equipment using an optical gas imaging instrument instead of leak monitoring as prescribed in 40 CFR part 60, appendix A-7 (i.e., using a Method 21 instrument). This alternative work practice (AWP) is described in 40 CFR § 60.18(g) through (i). This AWP is also an option for NESHAP rules that require monitoring of equipment with a Method 21 instrument, as described in 40 CFR § 63.11(c) through (e).

Additional information about the AWP can be found in the Federal Register at https://www.gpo.gov/fdsys/pkg/FR-2008-12-22/pdf/E8-30196.pdf (73 FR 78199, December 22, 2008). EPA assessed that the AWP provides equivalent control as the existing Method 21-based LDAR work practice standards and appears to be less burdensome to implement.

TSD Appendix B – BACT Comments

1.) TSD Appendix B page 27 shows that the proposed coal stockpile BACT is the use of a negative pressure enclosure and baghouse. However, the BACT determination on TSD Appendix B page 32 does not identify the use of a negative pressure enclosure as BACT. The emission unit description in section D.1 of the draft permit and the storage enclosure monitoring and inspection requirements in conditions D.1.6 and D.1.9 of the draft permit appear to require the use of a negative pressure enclosure for each coal stockpile. We request that you provide justification for not identifying the use of a negative pressure enclosure as BACT for the coal stockpiles. If a negative pressure enclosure is determined to be BACT, then we request that you consider adding a 0% visible emissions limit from openings in the coal stockpile to further show that the negative pressure enclosure routes all emissions to the baghouse.

2.) TSD Appendix B pages 46-52 is the NOx BACT analysis for process fuel gas-fired heaters and boilers. In steps 1 and 2 of the BACT analysis, selective catalytic reduction (SCR) is identified as a technically feasible control option. Step 3 of the analysis ranks control technologies by control effectiveness and appears to rank SCR below ultra-low NOx burners (ULNB). From step 3, SCR has an expected control efficiency of 70-90% while ULNB has an expected control efficiency of 40-85%. Based on the expected control efficiencies for each NOx control technology, it is not clear whether ULNB has a higher control efficiency. We request that you verify the rankings in step 3 of the

analysis. If, for these processes, SCR has a higher control efficiency than ULNB alone, then we request that you continue to evaluate SCR in step 4 of the NOx BACT analysis. If SCR is correctly ranked below ULNB, then we request that you provide justification for ranking the control effectiveness of SCR below ULNB.

3.) TSD Appendix B pages 55-59 is the CO BACT analysis for process fuel gas-fired heaters and boilers.

a. It is not clear whether the CO control technologies identified in step 1 are technically feasible. From the discussion in step 2 of the analysis, it appears that all of the identified control technologies are technically feasible. If each of the controls identified in step 1 are technically feasible, then the analysis should rank the remaining control technologies by control effectiveness in step 3. Economic factors should then be considered in step 4 for each technically-feasible control technology to determine whether the control is effective.

b. All identified control technologies are eliminated in step 2 since they were all determined to not be cost effective. However, the BACT analysis does not appear to include information about the cost of the controls to support the determination. The ensure the BACT determination is fully supported, we request that you provide justification showing that each control technology is not cost effective.

4.) TSD Appendix B page 63 states that GHG BACT requires each process fuel gas-fired heater and boiler to be designed and operated to achieve the highest practical energy efficiency. We request that you explain how the source should operate each emissions unit with the highest practical energy efficiency. It is not clear from the determination what steps the source should take to ensure compliance with this part of the BACT determination.

5.) TSD Appendix B pages 63 – 69 includes the BACT analysis and determination for the sulfur recovery units (SRUs) and TGTUs. We request that you verify that the BACT analysis for the SRU and TGTU is complete.

c. Steps 1-3 of the SRU/TGTU BACT analysis appears to begin addressing NOx control technologies. In step 1 of the analysis, low-NOx burners (LNB) are identified as the only available control. However, in step 2 of the analysis, thermal oxidizers are eliminated from the analysis based on cost effectiveness. If thermal oxidizers are technically feasible, then step 3 should rank available control technologies by control effectiveness and evaluate cost and other factors in step 4 of the analysis. We request that you determine whether thermal oxidizers are technically feasible. If thermal oxidizers are technically feasible, then we request further justification showing that the control option is not cost effective.

d. For PM10, PM2.5, SO2, VOC, CO, GHGs, and H2SO4, the BACT analysis does not appear to discuss or identify available control technologies. We request that you determine whether any control technologies are available to control each pollutant triggering PSD requirements. If any identified control technologies are infeasible due to cost, then we request that you provide specific justification demonstrating that the controls are economically infeasible.

6.) TSD Appendix B page 69-84 is the flare BACT analysis. The BACT determination establishes requirements on each flare during sweep and pilot mode operations. For NOx, VOC, and CO, the BACT determination also includes certain limits while flaring a process stream. We request that you clarify whether any of the flares are expected to operate during periods of startup and shutdown of the associated emissions units. If so, we request that you either determine whether startup and shutdown BACT requirements are required or provide justification explaining why the current BACT determination would cover startup and shutdown flaring.

7.) TSD Appendix B page 95 summarizes the BACT determination applicable to each tank. As part of the BACT determination, a specific storage temperature is identified for each tank. We request that you clarify whether the storage temperature for each tank is a BACT limit. If the storage temperature is not part of the BACT determination, then we suggest removing the storage temperature from the BACT requirements. Otherwise, we request that you include temperature monitoring for compliance.

8.) TSD Appendix B page 116 summarizes the BACT determination for the emergency diesel generator and emergency diesel firewater pump. The BACT determination (and condition D.9.1(e), accordingly) requires the use of energy efficiency. However, it is not clear from the BACT determination of the permit what is meant by using energy efficiency. We request that you clarify this portion of the BACT determination to further describe what must be done to ensure the emergency generator and emergency fire pump are energy efficient.

Modeling Comments

1.) The air quality analysis appears to consider the impacts associated with normal operations and several flaring scenarios. Page 4 of the air quality analysis report explains that the facility operates at a diminished operating capacity during each flare event, but it is not clear how the modeled emission rates for emission units operating at a diminished capacity were determined. Particularly, EU1007, EU2001-EU2004, EU3001 and EU3002 (TGTUA and TGTUB), EU6000, and EU7001 and EU7002 are modeled at a reduced emission rate during flaring operations. HP flare EU4006 is modeled at a higher emission rate while flaring, but the flaring emission rate may differ depending on the flaring scenario, such as the two considered in the SO_2 analysis. We request that you show how the modeled emission rates were determined for the flaring scenarios.

2.) TSD pages 23-24 includes a stack summary listing the stack parameters for the proposed emissions units. However, in some cases, the modeled stack parameters differ from the stack summary. We request that you verify the following modeled stack parameters for each listed stack ID and either correct the modeled stack parameters or explain why the modeled stack parameters are correct.

   a. Ambient stack temperatures modeled with fixed stack temperatures: EU1000, EU1001, EU1006, EU1501 – EU1504, EU2005 – EU2008, EU5009 – EU5011, EU6501.

   b. Fixed stack temperatures modeled with temperatures a fixed amount above ambient temperature: EU6001 – EU6003.

   c. Stack flow rates differ from modeled flow rates: EU1502, EU2003.

3.) Air quality analysis table 1 summarizes the emission rate of the proposed source. However, the NOx, CO, PM_{10}, $PM_{2.5}$, SO_2, and VOC emission rates included in the table differ from the values given in both TSD page 25-26 and TSD Appendix A pages 1-3. We request that you verify the table 1 emission rates and correct the table as necessary.

4.) Air quality analysis table 3 presents the results of the preconstruction monitoring analysis. Annual NO2, 24-hour PM10, and 24-hour SO2 maximum modeled impacts in table 3 differ from the significant impact level (SIL) analysis results provided in table 2. We request that you verify the table 3 maximum modeled impacts and correct the table as necessary.

5.) Page 6 of the air quality analysis report explains that CEMS data was used to determine the operating level and modeled emission rate for Indiana-Michigan Power - Rockport, ALCOA Power Plant, and IPL Petersburg consistent with 40 C.F.R. Part 51 Appendix W Table 8-2. It is not clear whether the

information used to determine the modeled emission rate for each source with CEMS data is available within the permit record. It is also not readily clear from the report how the modeled emission rates for sources without CEMS data were determined. We request that you include as part of the permit record the nearby source CEMS data, actual operating level calculations, and a brief explanation of how the modeled emission rates for sources without CEMS data were determined.

6.) Pages 10-13 of the air quality analysis includes the ozone and secondary $PM_{2.5}$ impact analysis. The analysis appears to rely on NOx, SO2, and VOC emission rates that do not match the values given on TSD pages 25-26 and TSD appendix A page 3. We request that you verify the NOx, SO_2, and VOC emission rates used in the analysis and update the analysis as necessary to account for emissions from the proposed source.

7.) Pages 13-14 of the air quality analysis provides IDEM's HAP modeling results. As part of our review, we note that the estimated aggregated hazardous air pollutant (HAP) in the air quality analysis report is 30 tons/yr and methanol emissions is 24 tons/yr. However, TSD appendix A page 7 states that total HAPs after issuance will be 60.30 tons/yr and methanol emissions, while still the highest HAP emitted, is 28.03 tons/yr. We request that you verify and correct the highest single HAP and total HAP emission rates cited in the analysis. We also request that you verify the emission rates used to generate the results in Table 11 to ensure the analysis considers the proposed source's HAP emission rates.

8.) The annual NO_2 SIL analysis does not appear to model 2012 impacts. Instead, the 2012 annual NO_2 analysis uses 2013 meteorological data to drive the model. Similarly, the 2013, 2014, and 2015 annual NO_2 analysis uses meteorological data from the following year to drive the model. The 2016 annual NO2 analysis uses 2016 meteorological data, ultimately resulting in concentrations based on 2016 met data to be repeated twice in the analysis. We request that you revise the modeled meteorological data to ensure the modeled year matches the year of the analysis. If the corrections result in a higher modeled annual NO_2 concentration, then we also request that you update the reported concentration provided in tables 2 and 3 of the air quality analysis.

9.) The short term and annual SO_2 SIL analyses appear to include the emissions from EU-7001, the steam-hydrocarbon reformer furnace for hydrogen plant 1, and not EU-7002, the reformer furnace for hydrogen plant 2. It is not clear why only one reformer furnace is included in the analysis. We request that you either include both reformer furnaces in the analysis or provide justification explaining why it is appropriate to only include one reformer furnace in the analysis.

10.) For the 24-hour and annual PM_{10} and $PM_{2.5}$ analysis, EU6000 is modeled at 0.51 lb/hr. However, condition D.3.1(a)(3) limits EU6000 to 0.53 lb/hr. We request that you verify the modeled emission rate for this emission unit and update the analysis as necessary.

Thanks,

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