

COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
Southwest Regional Office

MEMO

TO Air Quality Permit File PA-63-00922D

FROM Alexander Sandy *AS*
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THROUGH Edward F. Orris, P.E. *EFO* Mark R. Gorog, P.E. *MGR*
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DATE October 1, 2018

RE Review of Plan Approval Modification Application
Robinson Power Company, LLC
Beech Hollow Project / Combined Cycle Gas Turbine Electric Generating Facility
Robinson Township, Washington County
APS 893311 Auth 1232536 PF 650405

Background

On June 7, 2018, the Department received a plan approval modification application from Burns and McDonnell Engineering Company, Inc. on behalf of Robinson Power Company, LLC (Robinson) for the proposed natural gas-fired combined cycle power plant to be located Robinson Township, Washington County; approved under PA-63-00922D on October 27, 2017. This application has been submitted to include the following modifications:

- Removal of the duct burners
- Modification to the natural gas sulfur limit compliance method
- Modification to the annual fuel usage limit

The complete application was received on June 7, 2018, including the General Information Form, Compliance Review Form, and minor plan approval application fee of \$300.

Regulatory Analysis

The proposed modifications do not result in a change to the applicability of any state or federal regulations and do not result in a change of the applicability of PSD, NNSR, or the LAER/BACT/BAT analysis. Since the proposed modifications do not result in the reassessment of a control technology determination or of the ambient impacts of the source, the proposed changes qualify for a minor modification of a plan approval in accordance with 25 Pa. Code § 127.702(g) and (h). Each of the proposed modifications are discussed in more detail below.

Removal of the Duct Burners

The plan approval currently includes two (2) natural gas-fired combustion turbines (source IDs 201 and 202) with duct burners (source IDs 201A and 202A), each with a total capacity of 3,051 MMBtu/hr. The proposed modification includes larger but more efficient turbines that do not include duct burners. The proposed turbines will be 3,051 MMBtu/hr each, which is equivalent to the previously approved 2,433 MMBtu/hr turbines with 618 MMBtu/hr duct burners. According to the applicant, the total fuel usage of each combined cycle unit will remain 3.36 MMCF/hr. The source inventory list in Section A of the plan approval, as well as the description in Section C, Condition #026 will be modified to reflect the change. Mention of duct burners will also be removed from Section D and Section E.

Natural Gas Sulfur Limit Compliance Method

The plan approval includes a fuel sulfur limit of 0.2 grains per 100 dscf. The compliance method is to maintain records of a current and valid purchase contract, tariff sheet, or transportation contract for natural gas fuel received at the facility demonstrating that total sulfur content does not exceed 0.2 grains per 100 dscf. According to the applicant, based on discussions with natural gas distributors in the area, the vendors cannot provide a guarantee other than the tariff sulfur content of the fuel which is 20 grains per 100 dscf; even though the sulfur content of the gas is expected to be much less. As such, Robinson has requested to modify Section C, Condition #013(d) to the following:

“The Owner/Operator shall maintain the following comprehensive and accurate records...

d. Current grab sample data that demonstrates that sulfur content of the natural gas fuel received at the facility does not exceed 0.2 grains per 100 dscf. The grab sample shall be taken at least once per quarter and determined via laboratory analysis using ASTM D5504 (or equivalent test method)”

The proposed site-specific sulfur limit compliance method will be incorporated in the modified plan approval.

Annual Fuel Usage Limit

As a result of the response to comments received on the original plan approval, the Department determined that a combined heat input limitation on the combustion turbines was necessary to limit annual PTE for those pollutants without CEMS or CEMS correlation (PM (total), PM₁₀, PM_{2.5}, SO₂, and H₂SO₄). The applicant has requested that the following language be added to Section E, Group Name: Combustion Turbines, Condition #004 due to the removal of the duct burners and expected actual emissions of PM₁₀:

“Heat input to both combined cycle combustion turbines, excluding during periods of startup and shutdown, shall not exceed 41,670,370 MMBtu on a 12-month rolling sum basis. **This limit may be**

increased based on actual stack test results for PM₁₀ and VOC by calculating the maximum fuel usage that would result in the maximum tons per year limits for VOC and PM₁₀. A request for this increase must be submitted to the PA DEP along with the stack testing results as required by Section E for Combustion Turbines, Testing Requirements #005, showing the test results and corresponding emissions calculations and fuel limit.”

The plan approval will be modified to include the following language:

“Heat input to both combined cycle combustion turbines, excluding during periods of startup and shutdown, shall not exceed 41,670,370 MMBtu on a 12-month rolling sum basis. This limit may be increased based on actual stack test results with written approval from the Department.”

Conclusions and Recommendations

I recommend issuance of the modification of PA-63-00922D to include the above changes. The expiration date of the plan approval will remain October 27, 2020.