



Missouri Department of dnr.mo.gov

# NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

JAN 22 2020

Mr. Richard J. Heisse  
St. Louis Site Manager  
PQ Corporation  
4238 Geraldine Avenue  
St. Louis, MO 63115

RE: New Source Review Temporary Permit Request - Project Number: 2019-12-015  
Installation ID Number: 510-0809  
Expiration Date: July 31, 2020  
Temporary Permit Number: **012020-013**

Dear Mr. Heisse:

The Missouri Department of Natural Resources' Air Pollution Control Program has completed a review of your request to install a temporary oxygen enrichment system to an existing sodium silicate furnace at PQ Corporation, located in St. Louis. The Air Pollution Control Program is hereby granting your request to conduct this temporary operation at this location in accordance with Missouri State Rule 10 CSR 10-6.060(10).

PQ Corporation operates a direct natural gas-fired furnace (EP3). The furnace is typically rebuilt approximately every 4-5 years due to degradation of the furnace refractory, normal wear-and-tear, and fouling of the furnace flues. The next furnace rebuild is scheduled for the first quarter of 2020.

In recent months, the fouled furnace flues have led to combustion air breathing issues and challenges to normal furnace operations. As a result of this reduced air flow, there has been a drastic reduction of the raw material feed (sand and soda ash) and corresponding glass production. Therefore, PQ Corporation proposes to install a temporary oxygen enrichment system that will aid in maintaining complete natural gas combustion to maintain permitted production rates and normal furnace operations. The oxygen enrichment system will include an outdoor concrete pad, a 13,000 gallon compressed oxygen tank, a vaporizer, an indoor skid-mounted control unit, and associated piping and utility connections. The system will increase the oxygen concentration from 21% to approximately 26-27%.

The furnace has a permitted maximum hourly design rate (MHDR) of 8.3 tons per hour (tph) of glass production. The oxygen enrichment system will not increase the production rate beyond this previously permitted value. In order to ensure that the permitted MHDR is not exceeded and

that there will be no emissions increase as a result of this project, the installation shall do the following.

- The installation shall monitor its production rate to show that it does not exceed 8.3 tph. The facility proposes to track the production rate in its Overall Equipment Effective (OEE) database. The daily production rate (in tons of glass produced) will be entered into the facility OEE database. The hourly production rate will then be determined by dividing the daily glass production rate by the number of operating hours.

The facility is expected to begin reconstructing the furnace at the end of March, 2020. A separate permit application will be submitted for the reconstruction. This temporary permit allows the facility to use the oxygen enrichment system until July 31, 2020 in case of any delays in construction. Furthermore, it is the intention of the facility to eventually use the oxygen enrichment system permanently. This temporary permit allows the facility to conduct trial and testing of the oxygen enrichment system after the reconstruction of the furnace until the expiration date of July 31, 2020. During this period, the hourly production rate of the furnace shall not exceed the permitted MHDR of 8.3 tons per hour of glass production. If the facility decides to operate the oxygen enrichment system permanently, it shall submit a permit application to the Missouri Air Pollution Control Program for the system.

The installation has asked certain data to be kept confidential. This is the public version of the permit. No confidential version will be issued because the confidential information did not need to be included in this permit. The installation shall ensure that it complies with all existing special conditions for the furnace in previous operating and construction permits issued to the installation by the Missouri Air Pollution Control Program or by the City of St. Louis.

You are still obligated to meet all applicable air pollution control rules, Department of Natural Resources' rules, or any other applicable federal, state, or local agency regulations. Specifically, you should avoid violating the following state rules.

- 10 CSR 10-6.045 *Open Burning Requirements*
- 10 CSR 10-6.220, *Restriction of Emission of Visible Air Contaminants*
- 10 CSR 10-6.165 *Restriction of Emission of Odors*
- 10 CSR 10-6.170 *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*
- 10 CSR 10-5.510 *Control of Emissions of Nitrogen Oxides*
- 10 CSR 10-6.261, *Control of Sulfur Dioxide Emissions*
- 10 CSR 10-6.400, *Restriction of Emissions of Particulate Matter from Industrial Processes.*

The installation is also still subject to 10 CSR 10-6.260, *Restriction of Emission of Sulfur Compounds*. Although this rule has been rescinded from the Missouri State Rules, it remains in the Missouri's State Implementation Plan. Until the Plan is revised, the installation shall

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continue to comply with the requirements of this rule when burning fuel oil in the furnace.

According to its current Part 70 Operating Permit (OP2018-050), the installation is not subject to the New Source Performance Standards (NSPS), 40 CFR 60, Subpart CC, *Standards of Performance for Glass Manufacturing Plants*, and the Maximum Achievable Control Technology, 40 CFR 63, Subpart SSSSSS, *National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources*, because the installation is not considered a glass manufacturing plant.

A copy of this letter should be kept with the unit and be made available to Department of Natural Resources' personnel upon verbal request. If you have any questions regarding this determination, please do not hesitate to contact Chia-Wei Young at the departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or by telephone at (573) 751-4817. Thank you for your time and attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM



Darcy A. Bybee  
Director

DAB: cya

c: PAMS File: 2019-12-034  
St. Louis Regional Office  
Mark J. Skowron, PQ Lead HSE Specialist, 111 Ingalls Avenue, Joliet, IL 60435