

SECRETARY'S ASSESSMENT OF A COASTAL ZONE ACT PERMIT APPLICATION

Veolia North America Regeneration Services, LLC
Red Lion Plant
766 Governor Lea Road, New Castle, Delaware
CZA Permit

Introduction

Under §8.3.4 of the Regulations Governing Delaware's Coastal Zone (Regulations), the Secretary of the Department of Natural Resources and Environmental Control (DNREC) shall provide a written assessment of a proposed project's likely impact on the six criteria listed in §8.1, as well as a preliminary determination of the sufficiency of the offset project under §9.0. This memo contains a report of the assessment of the application by Veolia North America Regeneration Services, LLC. The fact that the Department considers, preliminarily, an application to be administratively complete does not constitute the Department's position as to whether a permit should be issued or denied. That decision will be made after a public hearing is held and any comments are reviewed.

The Proposed Project

Veolia North America Regeneration Services, LLC (Veolia) currently operates a spent acid regeneration operation at its Red Lion plant on land leased from the Delaware City Refinery site under Coastal Zone Act (CZA) Permit #406. Veolia wishes to increase production to 750 Tons Per Day (TPD) from the 550 TPD currently allowed under Permit #406.

Veolia receives spent sulfuric acid from the Delaware City Refinery (DCR), which is treated through a series of heating, cooling and cleaning processes. First, the spent sulfuric acid and/or molten sulfur are fed into a combustion chamber for thermal decomposition to SO₂ at approximately 1200°C. The process gas is cooled in a waste heat boiler to produce steam. Water is removed via weak acid purge stream, which is then neutralized using a dilute sodium hydroxide solution. Wet gas is dried with a circulating stream of acid in a packed tower. The dried gas is then heated to approximately 420°C before entering a converter containing vanadium catalyst supported on silica. Here, the gas is oxidized to SO₃.

Process gas from the converter is fed into the interpass absorption tower where the SO₃ is absorbed in a circulating stream of sulfuric acid. When the process gas leaves the interpass tower, it is heated to convert more SO₂ to SO₃ until the final product, non-fuming sulfuric acid, results. The product is used as a pickling agent in such applications as steel manufacturing, wastewater treatment and the manufacture of petroleum products.

The facility runs continuously 365 days per year and uses a mist eliminator, a caustic scrubber, and a vapor combustion unit to reduce air emissions. The increase in production requires no new construction or equipment and no changes in operating procedures. It only requires increasing flow through the current piping and treatment facility.

Although Veolia's Red Lion facility does not occupy more than 20 acres itself, it is a heavy industry use, involving tanks, chemical processing equipment and scrubbing towers within the footprint of the Delaware City Refinery, one of the fourteen heavy industry use sites under the CZA. The project entails an increase in production of 200 TPD of sulfuric acid. Since the current permit, # 406, limits production to 550 TPD, the facility may not increase production to 750 TPD without a new CZA permit. The proposed increase in production would constitute an expansion of the use and therefore must be permitted under 7 Del. C. §7004, which requires an assessment of six criteria.

Assessment of the Application

Section 8.3.2 of the Regulations requires consideration of an application's effect on the six criteria of 7 Del. C. Chapter 70:

1. Direct and cumulative environmental impacts
 2. Economic effects
 3. Aesthetic effects
 4. Number and type of supporting facilities and their anticipated impacts
 5. Effect on neighboring land uses
 6. Compatibility with local comprehensive plans
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1. Direct and cumulative environmental impacts

The Veolia site emits air pollutants in accordance with its Title V Operating Permit # AQM-003/00673. The facility's increase in production would increase air emissions, but the emissions will remain within the limits of the current Title V permit. The facility is nevertheless required to offset the increased emissions under the CZA. The following table shows the increases in air emissions that would be caused by the project.

Table 1 – Project Air Emission Increases

Air Pollutant	Estimated Project Increase in Annual Facility Air Emissions (Tons)
SO₂	25.8
H₂SO₄ mist	2.1
NO_x	3.1
CO	0.28
PM₁₀	0.023
PM_{2.5}*	0.019
VOC	0.34
Total*	31.643

*Note: PM2.5 is not included in the Total because PM2.5 is part of PM10.

Wastewater is generated during the process and is neutralized by adding caustic before being discharged to the Delaware City Refinery (DCR) wastewater treatment plant. The treatment plant has a National Pollutant Discharge Elimination System (NPDES) permit (DE 0000256). In Veolia’s process, higher rates of production cause a greater proportion of the waste sulfur compounds to be emitted to the air and less to the wastewater. Therefore, the increased production will not increase the amount of wastewater they generate on an annual basis.

Stormwater is generated by runoff from the facility’s buildings and equipment and is directed to the DCR for treatment at its wastewater treatment plant prior to discharge at Outfall 001 to the Delaware River. Since no new construction, buildings or equipment are being installed, the facility’s stormwater will not change as a result of the project.

VCR’s increased production will continue to draw cooling water from DCR’s existing water allocation as it has in the past without the need for any new withdrawals.

Solid waste from the process includes neutralized wastewater, scrap metal, catalyst, universal waste and used oil, which are and will continue to be either treated and disposed of at the DCR or transported and disposed of at permitted facilities offsite.

Since there is no construction and no new equipment, the project will not affect wetlands or habitat for flora and fauna.

The project will not increase or affect glare, heat, noise, vibration, radiation, electromagnetic interference or obnoxious odors.

The existing CZA Permit #406 requires the facility to operate under a process safety management (PSM) system. DuPont established the PSM system when they operated the plant, prior to the transfer of the permit to Veolia, and Veolia continues to operate under a PSM system.

2. Economic Effects

Veolia states that there will be no economic effects from the proposed project. There will be no construction, no new hires and no new tax revenues.

3. Number and Type of Supporting Facilities

The project will not result in the creation of any new supporting facilities.

4. Aesthetic Effects

The project site is contained within the footprint of the DCR property. It will continue to be operated as heavy industry in an area that is surrounded by heavy industry. The project will not have any effect on the aesthetics of the area, as the facility is not undergoing any construction or changes in appearance.

5. Effect on Neighboring Land Uses

The project, which will not entail any construction, supporting facilities or major operational changes, will have no new effect on neighboring land uses.

6. Compatibility with County and Municipal Comprehensive Plans

The application contained a letter from John Troy, assistant land use manager with New Castle County, stating that the property where the project will occur is zoned "Heavy Industrial." It stated further that the applicant proposes a continued use that is allowable in that district. Therefore, the project is compatible with New Castle County's comprehensive plan.

Offset

Section 9.1.1 of the Regulations states that offset proposals must "more than offset the negative environmental impact associated with the proposed project of activity requiring a permit."

As indicated by the environmental assessment, the impacts of the project consist of increased air emissions. While the emissions are within the limits of the facility's current permit, under the Coastal Zone Program, any increase in air emissions requires an offset, independent of the air quality rules and air quality permit.

In compliance with the Coastal Zone Program, the applicant has proposed to more than offset the environmental impacts of the increased air emissions with a decrease in emissions from a neighboring facility, Formosa. Even though the offset is not required under air quality rules, both the Coastal Zone Program and the applicant have coordinated with the Division of Air Quality (DAQ) on the air emission offsets to verify that they are technically correct and sufficient to meet the Coastal Zone Program “more than” offset standard. Veolia has proposed Coastal Zone Program offsets for Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx) that comport with the State’s Emission Banking and Trading Program.

The DAQ does not require air emission offsets for pollutants other than VOC and NOx. However, the Coastal Zone Program is requiring the applicant to more than offset those air emissions outside of the DAQ regulatory realm. These emissions include sulfuric acid (H₂SO₄), Carbon Monoxide, and Particulate Matter (PM). The applicant calculated the emissions that are expected to result from the proposed increase in production, and these emissions and the proposed offsets are presented in Table 2.

Table 2 – Project Air Emission Increases to be more than Offset in Tons Per Year (TPY)

Pollutant	Future Actual Minus Past Actual (Actual to Actual Increase)	Emissions to be Offset at a Ratio of 1.3 to 1
SO₂	25.8	33.5
H₂SO₄ mist	2.1	2.8
NO_x	3.1	4.0
CO	0.28	0.4
PM₁₀	0.023	0.030
PM_{2.5}*	0.019	0.025
VOC	0.34	0.4
Total*	31.643	41.136

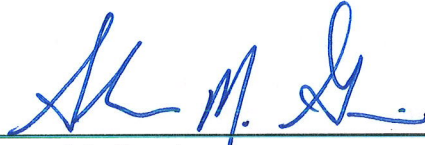
*Note: PM2.5 is not included in the Total because PM2.5 is a subset of PM10 emissions

As Table 2 shows, the offsetting emissions acquired from the retiring Formosa facility by the applicant are at a ratio of 1.3 to 1, which satisfies the Coastal Zone Program’s “more than” offset standard. Formosa wrote the DAQ to apply for certification of emission reduction on April 15, 2019, including all the information required by 7 Del. Admin. Code §1134. The DAQ has agreed to track all the emissions and the Coastal Zone Program offsets to ensure that the emissions are properly credited and eliminated.

Conclusion

The application by Veolia addresses the questions of the permit application form and the six criteria required to be reviewed under 7 Del. C. §7004. The applicant proposes an offset for air emissions that would increase as a result of the project, and the proposal would more than offset those emissions. After review of the application, the Department considers the application to be administratively complete and sufficient for proceeding to public hearing.

Approved:



Shawn M. Garvin
Secretary

Date:

6/30/19