



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

OFFICE OF THE
SECRETARY

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Secretary's Order No. 2010-A-0041

Re: Application of Delaware City Refining Company, LLC, for an Air Pollution Control Permit to Construct and Operate Coke Handling Equipment at the Delaware City Refinery, Delaware City, New Castle County

Date of Issuance: **December 16, 2010**

Effective Date: **December 16, 2010**

Under the authority vested in the Secretary of the Department of Natural Resources and Environmental Control (Department) by *29 Del. C. §§8001 et seq., 7 Del. C. Chapter 60*, the following findings, reasons and conclusions are entered as an Order of the Secretary.

This Order considers the air pollution control permit application dated September 17, 2010 by Delaware City Refining Company, LLC, (Applicant) a subsidiary of PBF Energy. Applicant seeks a permit under Section 1102 of the Department's *Regulations Governing the Control of Air Pollution, 7 Del Admin. Code 1102*, in order to construct and operate petroleum coke handling equipment at the Delaware City Refinery (Facility) near Delaware City, New Castle County. The proposed equipment would more reliably control air emissions and allow improved coke handling compared to the coke handling system installed in 2008 by the Facility's former owner, Premcor Refining Company, which shutdown the Facility in 2009. Applicant acquired the Facility in 2010, and Applicant intends to resume refining operations in the Spring of 2011 after making numerous changes and improvements to the refinery process, including the coke handling

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and storage process. The coke handling equipment is used to storage and transport petroleum coke produced as part of the Facility's use of a fluid coke refinery process, which is only one of three fluid cokers in use worldwide.

The Department received public comments on the permit application at November 16, 2010 public hearing. Ravi Rangan, P.E., the Department expert in the Division of Air Quality (DAQ) prepared a Technical Response Memorandum, dated November 30, 2010, for the presiding hearing officer, Robert P. Haynes. Mr. Haynes prepared a Report of Recommendations, dated December 9, 2010 (Report), and attached hereto, which recommends approval of the DAQ's revised draft permit appended to the Technical Response Memorandum.

I adopt the Report and its record and find and conclude that the Department should approve the issue Applicant the permit based upon the draft permit DAQ submitted to the Hearing Officer. This permit will allow the Applicant to make improvements to the Facility's coke handling equipment to reduce air emissions of particulate matter (PM and PM10) associated with the handling and storage of petroleum coke produced at the Facility. The equipment to be installed will include state of the art dust collectors at the railcar loading chute, and each of the 4 transfer towers along the covered conveyor belt that is used to move the petroleum coke to a new storage building. The storage building also will have a dust collector for the mixing of water with the petroleum coke. The petroleum coke will be loaded for truck transportation inside of the building, and dust will be controlled by the wheel washing and covering of the trucks when they leave the building. As a result of the changes approved by this permit, PM emissions will be reduced from 40.3 tons to 28.3 tons and PM10 emissions will be

reduced from 29 tons to 21 tons. Thus, this permit will achieve an approximate 30% reduction of these pollutants.

Accordingly, I direct that the permit be issued to the Applicant, and enter the following findings and conclusions:

1.) The Department has jurisdiction under its statutory authority to issue the air pollution control permits in this proceeding;

2.) The Department provided adequate public notice of the proceeding and the public hearing in a manner required by the law and regulations;

3.) The Department held a public hearing in a manner required by the law and regulations;

4.) The Department considered all timely and relevant public comments in making its determination; and

5.) The Department has considered all the factors that the law and regulations require to be considered and that the air pollution control permit should be issued to the Applicant for the Facility based upon the draft permit, as attached to the Report, and subject to such reasonable conditions to protect the environment and public health consistent with the Department's statutory responsibilities.



Collin P. O'Mara
Secretary

HEARING OFFICER'S REPORT

TO: The Honorable Collin P. O'Mara
Secretary, Department of Natural Resources and Environmental Control

FROM: Robert P. Haynes, Esquire
Senior Hearing Officer, Office of the Secretary
Department of Natural Resources and Environmental Control

RE: Application of Delaware City Refining Company LLC for Air Pollution Control Permit to Construct and Operate Coke Handling Equipment at the Delaware City Refinery

DATE: December 9, 2010

I. BACKGROUND AND PROCEDURAL HISTORY

This report considers the administrative record, including the public comments received in the public hearing record, and makes recommendations to the Secretary of the Department of Natural Resources and Environmental Control (DNREC or Department) on Delaware City Refining Company LLC's ("Applicant") air pollution control permit application under Section 1102 of *Delaware Regulations Governing the Control of Air Pollution* (Regulations).¹ 7 *Del. Admin. Code 1102*. The application seeks approval to construct and operate equipment at Applicant's Delaware City Refinery (Facility), located at 4550 Wrangle Hill Road, Delaware City, New Castle County.

The Applicant proposes modifications to the Facility's existing petroleum coke handling and storage system from what the Department previously approved in 2008 based upon a system developed by the Facility's former owner and which has shown to be unreliable in operation. In 2009, the former owner of the Facility shutdown the operations, and in 2010 the Applicant owner bought the Facility and has been making changes towards a Spring 2011 restart of the refinery operations. The revised coke handling and storage system proposed includes the following changes: 1) for the railcar loading system, the removal of the swivel-type air slide conveyors

¹ The application was dated September 17, 2010, was received by the Department on September 22, 2010 and the Department determined to be administratively complete on September 25, 2010.

with extendable spout, the steel structural support and control shack and railroad track as needed and the installation of a gravity feed chute with extendable loadout spout, a 4,000 cubic feet per minute (cfm) dust collector for the railcar loading chute, a structural steel support to allow safe access to top of railroad cars and an operator and control shack, and railroad track as may be required; 2) the existing 4 Belt Conveyors used to transport coke from the existing 7,000 ton steel silo will be repaired and air emissions controlled at each of the 4 transfer towers by 2,000 cfm dust collectors, which will eliminate the oil wetting of the coke transported on the conveyors as the prior way to control dust emissions; 3) the installation of a pre-engineered 125'x 400' steel coke storage building on a concrete foundation and with concrete flooring to doorways to allow trucks to enter to be loaded with coke and weighed; 4) the relocation of existing pug mills to inside the storage building on a new steel support and coke feed into the pug mills and cooled with water and two new portable conveyors and an extendable radial stacker will be installed to distribute the processed coke; and 5) the relocation of the wet scrubber adjacent to the storage building and the existing dust collector hoods and ductwork for the pugmills and scrubber may be repaired as required or reused and new water supply piping installed as required.

The application indicates that the current coke handling and storage system emitted 40.3 tons per year (tpy) of total suspended particulate or particulate matter (PM or TSP) and 29.0 tpy, of the smaller PM₁₀² based upon a 2,500 tons per day coke production capacity. The Applicant claims the proposed equipment should reduce PM emissions to 28.3 tpy and PM₁₀ emissions to 21.0 tpy, which would represent reductions of 11.9 PM tpy and 8.1 tpy of PM₁₀. The Applicant states that no Prevention of Significant Deterioration (PSD) analysis is necessary under the applicable federal regulations because of the decrease in emissions that the equipment will produce.

²PM with an aerodynamic diameter of 10 micrometers or less.

On October 31, 2010 the Department published public notice of the application and received timely comments and a request for a public hearing from Sarah B. Bucic, Chairperson of the Delaware City Environmental Coalition. On October 24, 2010, the Department published public notice a public hearing to be held November 16, 2010 in the Department's Granthan Lane office of the Division of Air Quality in New Castle. I was assigned to preside over the public hearing and to develop a report of recommendations and recommended record. The public hearing was held and approximately 15 persons attended and all oral public comments are set forth in the 50 page verbatim transcript. In a November 30, 2010 memorandum, Ravi Rangan, P.E., of DAQ provided a Technical Response Document (TRD), as attached to this Report, which addressed the technical issues raised by the public comments and provided a revised draft permit in Appendix.

II. SUMMARY OF THE RECOMMENED RECORD

The recommended record includes the public hearing record containing the transcripts and the documents included in the public hearing record by the Department and by the Applicant, which prepared a power point presentation. DAQ's representative Ravi Rangan, P.E., provided the public hearing record with certain relevant documents introduced as Department exhibits,³ including the Applicant's permit application, the public notices, and the correspondence from the public.

The public comments were made by Ms. Bucic, who asked why the Applicant could not reduce PM emissions by more than 25%, and whether the water used to wet the coke being transported would cause pollution. John Deemer, an engineer with Applicant's parent

³ The Department does not have an obligation to develop the public hearing record. Instead, the Department's public hearings provide an opportunity for the public to present comments to the Department before a final decision is made. The Department's AQMS prepared the draft permits for comment pursuant to the Department's procedures, but this tentative decision is subject to change after considering the public comments and AQMS recommends changes based upon comments received.

corporation, PBF Energy, answered that the Applicant determined that the proposed emission reduction was adequate and would ensure more reliable process operations, as opposed to the more complicated system the prior owner install but which did not operate reliably. The Applicant also indicated that the water waste from wetting the coke was recovered and conveyed by drains to the Facility's industrial wastewater treatment plant for treatment and discharge.

Tracy Southerland asked a question about the dust collection from the bins below the dust collector and the Applicant informed her that the dust from the bins went into back into the coke that was transported.

Sandip Shah asked a question about the impact on Delaware City's overall air quality, and Mr. Rangan answered that the air quality regulations control dust emissions at the Applicant's property line, but Delaware City's air quality for PM and PM10 has been in compliance with the air quality standard even when the coke handling was uncontrolled.

Rita Marocco asked questions about the air monitoring stations used to determine compliance with air quality standards and Mr. Rangan explained where the monitoring was done and the basis for the location was from wind studies. She also asked about best practices and the Applicant and Mr. Rangan informed her that the dust collectors or baghouses represented best practices to control dust and had a 99% plus recovery rate and a very small particle outlet limit of 0.014 grains per dry standard square foot, which Mr. Rangan indicated was about as low as the control technology gets for dust collectors.

Kathy Walls, Interim City Manager of Delaware City, asked about the loading of trucks and the Applicant responded by indicating that all loading would be done in the storage building and that a wheel washing would occur as a new change to the truck loading process.

Chad Tolman asked questions about the coke production and the change from the prior owner's operation of a boiler that used coke as fuel. The Applicant replied that the coke-fired

boiler would not be used once the Facility resumes production and consequently all the coke would be shipped to customers by train or truck, with most of the demand in China and only one customer in the United States. He also asked about the impact of sea level rise and the Company informed him that the coke handling system was 62 feet above sea level.

The Applicant also submitted comments to the draft permit prepared by DAQ and these comments along with the power point presentation will be DCRC Ex 1 & 2, respectively.

The DAQ TRD set forth the response and reaffirms the responses made at the hearing with the exception that PM monitoring is not done anymore at the Delaware City location because no violations of federal or state standard had been observed at this locations and the entire state is in compliance. The TRD also reported that the fence line monitoring for PM is adequate given the distance scientific studies have shown on the airborne transport of PM. The TRD also explained that there was no legal requirement for costly and time consuming best available control technology options or prevention of significant deterioration because the coke handling project would result in improving air quality by lowering PM and PM10 emissions. The TRD also recommends rejecting Applicant's changes to draft permit condition no 3.1.1 and part of 4.1 as inconsistent with the Title V permit language. The TRD also recommends adopting the Applicant's proposed revisions to the draft language to permit conditions 4.3.3.1, 4.3.2, 4.3.4, 6.1, 4.8, 4.9, 4.10, 4.11, 4.5, 4.1.1, 4.1.4. DAQ's TRM also explains why Applicant's proposed changes to Permit conditions 6.3, 1.2, 1.4 and 2.5 and 3.8 were not adopted. DAQ provided a revised draft permit in Appendix B of the TRD, which reflects DAQ's recommendations.

III. DISCUSSION AND REASONS

This Report reviews and recommends to the Secretary the adoption of the above recommended record and the issuance of a permit consistent with the draft permit in Appendix B to the TRD. The Department reviews the pending permit application pursuant to its authority set

forth in 7 Del C. Chapter 60 and Regulations Governing the Control of Air Pollution (“Regulations”), 7 DE Admin. §§1100 et seq. The public hearing raised only a few issues, and the DAQ TRD addressed them in considerable detail. Indeed, the Department’s experts accepted many of the changes in the proposed conditions that the Applicant proposed in its comments, and explained the reasons why all the suggested changes were not adopted. I agree with DAQ’s draft permit set forth in Appendix B to the TRM and recommend its adoption by the Secretary. I further find that the public comment have been thoroughly and completely addressed at the public hearing and in the TRD and no further discussion of them is warranted.

The permit will result in the installation of equipment that will reduce PM and PM10 air emissions from the Facility’s coke handling system and allow the system to operate more reliably. The record indicates that the Facility is only one of 3 similar petroleum refineries worldwide with petroleum production by a fluid coker process, and that the Facility’s operations are not similar to the petroleum production at the other two locations. The production and sale of the petroleum coke will be enhanced by the installation of the equipment if approved by the Secretary compared to the existing system that has not been able to operate effectively before the shutdown by the prior owner. Moreover, the Applicant’s decision to not resume the use of the gasification and burning of petroleum coke as process fuel will dramatically improve the air emissions although not included in the benefits of this permit action. Nevertheless, the improvement to the coke handling system is needed given the reliability problems with the coke handling system that was installed to allow lower emissions and the production of up to 800,000 tons of petroleum coke, which will be shipped primarily as an export to fuel coke fired boilers in China. Thus, this permit action will benefit the Delaware economy and the environment.

IV. RECOMMENDED FINDINGS AND CONCLUSIONS

Based on the record developed, I find and conclude that the record supports approval of the permit for the air pollution control equipment in the application. I recommend the Secretary adopt the following findings and conclusions:

1. The Department has jurisdiction under its statutory authority to make a determination in this proceeding;

2. The Department provided adequate public notice of the proceeding and the public hearing in a manner required by the law and regulations;

3. The Department held a public hearing in a manner required by the law and regulations;

4. The Department considered all timely and relevant public comments in making its determination;

5. The Department shall issue Applicant a permit, subject to reasonable conditions determined by DAQ and pursuant to the Regulations, to allow the construction and operation of the equipment; and

6. The Department shall provide notice of this action by mail or email on each person who requested to receive such notice, as shown on the public hearing sign in sheet or in written correspondence to the Department.

s/Robert P. Haynes
Robert P. Haynes, Esquire
Senior Hearing Officer

MEMORANDUM

TO: Robert Haynes

THROUGH: Ali Mirzakhali, P.E. *AM 12.2.10*
Paul Foster, P.E. *RF*

FROM: Ravi Rangan, P.E. *RR*

SUBJECT: **Response Document Developed by the Division of Air Quality (DAQ) for the Public Hearing Held on November 16, 2010 for The Delaware City Refining Company (DCRC) to Construct a Modified Coke Handling and Storage System at the Delaware City Refinery**

DATE: November 30, 2010

A public hearing was held on November 16, 2010 to receive comment on The Delaware City Refining Company's (DCRC's) application to construct a modified coke handling and storage system at the Delaware City Refinery.

DCRC submitted the modified coke handling and storage system application on September 20, 2010. DAQ deemed the application as complete on September 25, 2010 and public noticed receipt of the application on October 3, 2010. On October 15, 2010, the Department received a request for a hearing on this application from the Delaware City Environmental Coalition (DCEC) – a citizens group formed by Delaware City residents to improve the quality of life and the environment in Delaware City. DAQ scheduled and held a hearing on this application on November 16, 2010. Appendix "A" of this memorandum provides DAQ's responses to comments made by concerned citizens at the above referenced hearing. Appendix "B" is a draft permit for DCRC's modified coke handling and storage facility. I hope this information will assist you in reviewing the issues and making your recommendation to the Secretary. Your patience in awaiting receipt of these responses is appreciated.

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APPENDIX "A"
DAQ's Response Document

The comments raised by members of the public who attended this hearing can be broadly summarized under the following categories:

1. Whether the proposed controls meet the best available standards.
2. How coke handling and storage operations by the refinery would affect ambient air quality in Delaware City.
3. Miscellaneous questions about coke handling operations.

Additionally, DCRC submitted their comments on a draft permit prepared by DAQ.

In the remainder of this memorandum, DAQ has addressed its responses to these 3 categories of public comments and its responses to DCRC's comments as follows:

Whether the proposed controls meet the best available standards.

As a general question several members of the public asked whether the proposed control measures represented the best available control technology. As an offshoot of this question, DCEC commented that the proposed controls appeared to result in anticipated reductions of approximately 25 % and raised the question as to why the remaining 75 % could not be controlled.

The DCRC owns and operates a petroleum refinery which includes a unit operation called the fluid coking unit (FCU). The FCU produces about 2500 tons per day of fluid petroleum coke as a byproduct. Formerly, this coke used to be either combusted in the refinery's boilers, or as in more recent times, it was gasified into a clean burning synthesis gas which was combusted in the refinery's combustion turbines. Since both these practices (i.e. burning and gasification) have been discontinued, the only remaining option for an operational refinery is to temporarily store the coke before shipping it out. DCRC's application for this modified coke handling and storage project indicates the project will result in emissions of 28.3 TPY total suspended particulate matter (TSP) and 21 TPY of particulate matter with an aerodynamic diameter of less than 10 microns (PM₁₀) resulting in reductions of 11.9 TPY TSP and 8.0 TPY PM₁₀ from past actual emissions. DAQ has reviewed DCRC's application and verified these Potential to Emit (PTE) calculations. These calculations were based on a set of assumptions that typically consider a sources maximum potential to emit which means the maximum capacity of a source to emit an air pollutant under its physical and operational design. In actual practice, one would expect the source to perform at a level that is well below its PTE thereby yielding greater reductions than those anticipated in the application. However, it is noteworthy to recall that DCRC's proposed application was submitted in response to a consent agreement governing the acquisition and

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operation of the Delaware City Refinery¹. Paragraph 37 of this agreement specifically requires DCRC to undertake to construction and/or modify a coke management control system with the objectives of minimizing the generation of fugitive coke dust and preventing the migration of any airborne fugitive coke dust beyond the property boundary of the refinery in a quantity and form that would otherwise cause air pollution, or cause or contribute to monitored exceedances of the State's AAQS for TSP.

DAQ has completed its technical and regulatory analysis of DCRC's application and expects the proposed controls to meet the emission limitations in the application. However, as DAQ stated during the hearing, it did not perform a Prevention of Significant Deterioration (PSD) analysis or a Best Available Control technology (BACT) analysis of the proposed controls. Such analyses were not performed because there were no applicable regulatory triggers. Typically, under attainment-NSR regulations, a PSD analysis is performed for an attainment pollutant when a physical change or a change in the method of operation results in a net significant emissions increase. As mentioned above, in this case the application shows a net reduction in both TSP and PM₁₀ emissions, thereby not triggering PSD review. Additionally, because with the exception of a few counties in the western United States, most of the country is in attainment of the NAAQS for PM₁₀ there have been no BACT determinations for coke handling and storage projects of this kind. Furthermore, as DAQ stated during the hearing, there are only 3 operational fluid coking units in the world and to the best of DAQ's knowledge the other 2 facilities are uncontrolled. Consequently conducting a comparative BACT analysis with a very limited database resource has proved difficult.

How coke handling and storage operations by the refinery would affect ambient air quality in Delaware City.

Several members of the public asked how the proposed changes would affect air quality in Delaware City in terms of ambient PM concentrations. DAQ is satisfied that coke handling and storage operations will not adversely impact ambient air quality with respect to particulate matter for the following reasons:

- The entire State of Delaware has been and is in attainment of the federal NAAQS for PM₁₀. There is no similar applicable federal NAAQS for TSP.
- The entire State of Delaware is also in attainment of the state AAQS for both PM₁₀ and TSP. DAQ had misspoken at the hearing that TSP monitoring is being carried out at the Delaware City monitoring station. DAQ clarifies that because of the state's attainment status, monitoring for TSP has been discontinued. However, PM₁₀ monitoring continues at the Martin Luther King Boulevard site.

¹ Agreement Governing the Acquisition and Operation of Delaware City Refinery (aka the DCRC Agreement) dated May 31, 2010.

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As DAQ mentioned during the hearing, fence line monitoring of PM₁₀ and TSP was conducted because past modeling had predicted that historic coke handling and storage practices without any controls would likely cause exceedances of the Primary and Secondary AAQS for TSP. Continuous monitoring over a five year period confirmed no exceedances of the PM₁₀ AAQS. However, the Primary and Secondary AAQS for TSP were exceeded on numerous occasions at the facility fence line. These exceedances of the TSP AAQS were subject to stipulated penalties and as mentioned above the DCRC Agreement specifically requires DCRC to undertake to construct and/or modify the coke management control system with the objectives of minimizing the generation of fugitive coke dust.

- TSP emissions are characterized by a particle size distribution of particles greater than 30 microns. Particles in this size range have a Stoke's settling velocity that is high enough to preclude their being transported beyond a few feet of the facility fence line and certainly not as far as Delaware City which is approximately 2 miles from the coke handling and storage facility.²
- DAQ believes the past fence line exceedances of the TSP AAQS were caused by uncontrolled operations of the coke handling and storage facility by the former owners of the Delaware City Refinery. DAQ is optimistic that the covered facility will provide an adequate measure of control that is expected to eliminate the fence line TSP AAQS exceedances.

Miscellaneous questions about coke handling operations

Several miscellaneous questions were raised about coke handling operations. DAQ is satisfied with the responses provided by DCRC and is including a summary of these miscellaneous questions as follows:

- Concern about the water run off from coke wetting operations. All coke wetting will be done in the pugmills within the enclosed coke barn. Run off water will be collected in an oily sewer and routed to the refinery's waste water treatment plant.
- Concern about whether climate change and sea level rise could adversely impact the storage of this material. DCRC responded that the elevation for this facility is 62 feet above MSL and consequently does not pose a concern.
- Concern about whether the trucks loaded with coke would be washed down prior to departing the facility. DCRC confirmed that a wheel washer station would be constructed as part of this project.

² Noel De Nevers, *Air Pollution Control Engineering*, 2nd Edition, McGraw Hill, Philadelphia, 2000, pp 209 – 228.

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- Concern about what would happen to the coke dust collected in the baghouses. DCRC responded that the collected dust would be conveyed back into the process
- Concern about whether this project poses a fire hazard. DCRC responded that the system will be constructed to meet county codes and will be approved by the Fire Marshal's office.

DCRC Comments:

DCRC's comments are summarized in the table below.

Draft Permit Condition No.	DCRC Comment	DAQ Comment
3.1.1	DCRC has proposed the following language: At all times, including periods of startup, shutdown, and malfunction, the company shall operate and maintain any affected source, including associated air pollution control equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires that the owner or operator reduce emissions from the affected source to the greatest extent which is consistent with safety and good air pollution control practices. The general duty to minimize emissions during a period of startup, shutdown, or malfunction does not require the owner or operator to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require the Company to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved.	DAQ disagrees. The proposed language is not consistent with the language in the TV permit.
4.3.3.1, 4.3.2 and 4.3.4	DCRC has proposed making these conditions consistent with the language in the TV permit.	DAQ concurs
6.1 and 6.2	DCRC has proposed making these conditions consistent with the language in the TV permit.	DAQ concurs
4.1	DCRC has proposed making this condition consistent with the language in 7 DE Admin Code 1120.	DAQ concurs with respect to changing the testing requirement to 60 days as against 90 days. However it disagrees with respect to the remaining language because it is inconsistent with DAQ's model permit.
4.1.3 and 6.4	Typographic correction of DAQ's new mailing address	DAQ concurs
4.8, 4.9, 4.10 and 4.11	DCRC has sought clarification of the testing and monitoring requirements.	DAQ concurs
4.5	DCRC has requested the ability to petition the Department to reduce the testing frequency of the coke moisture content from daily to weekly after demonstrating compliance with the requirements in Condition 3.2 for 1 year.	DAQ concurs
4.1.1 and 4.1.4	DCRC has proposed making these conditions consistent with the language in the TV permit.	DAQ concurs

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6.3	DCRC has requested changing Condition 6.3 to read as follows: Exceedances of the TSP and PM10 ambient air quality standards shall be reported in the Title V semi-annual monitoring report	DAQ disagrees. DAQ is hopeful that the proposed enclosed coke barn will eliminate the TSP AAQS exceedances. But it makes good engineering sense to maintain regular and timely flow of data until a full compliance assessment can be made. Furthermore, DAQ finds it necessary to review not just the exceedances, but all the monitored data including the QA and QC procedures to ensure the collected data is valid and meaningful. Therefore, DAQ recommends retaining the quarterly reporting requirement in the draft permit.
1.2, 1.4 and 2.5	DCRC has suggested these conditions are redundant.	DAQ disagrees. These conditions are part of DAQ's model permit and are boiler plate conditions.
3.8	DCRC has asked that Condition 3.8 be deleted because it does not plan on importing coke.	DAQ disagrees. DAQ finds it necessary to have such a condition because there are no controls in place to address emissions from the handling and storage activities from importing coke.

APPENDIX "B"
Draft Permit

DATE

Permit: APC-82/1209-CONSTRUCTION (Amendment 7)
Petroleum Coke Storage and Handling Complex

Delaware City Refining Company
4550 Wrangle Hill Road
Delaware City, Delaware 19706

ATTENTION: James Fedena
Vice President, HSE

Dear Mr. Fedena:

Pursuant to **7 DE Admin. Code** 1102, Section 2, approval of the Department of Natural Resources and Environmental Control (the Department) is hereby granted for the construction of a modified coke storage and handling complex comprised of the following components: a new railcar loading gravity-feed chute with an extendable load out spout and 4,000 ACFM Donaldson Torit Model DLMC 2/2/15 dust collector; installation of 2,000 ACFM Donaldson Torit Model DLMC 30/15 dust collectors at each of the existing 4 conveyor transfer points; construction of a 125 feet by 400 feet pre-engineered steel building (coke barn) with new concrete footings/foundation and concrete floor; relocation of the 2 existing pug mills within the new coke barn and equipping them with 2 new portable conveyors with an extendable radial stacker; and relocating the existing Bionomic Industries series 5700 Model 60 Rotabed Fluidized Bed Scrubber (the pug mills' scrubber) in addition to the existing 7000 ton capacity coke storage silo and its Micropulsaire baghouse at the Delaware City Refinery in Delaware City, Delaware, in accordance with the following documents:

- Application package submitted by the Company dated September 17, 2010, with Form Nos. AQM-1, AQM-2, AQM-4.4, AQM-4.6 for each baghouse, and AQM-4.5 signed by James Fedena.

This permit is issued subject to the following conditions:

1. General Provisions

- 1.1 The modified coke storage and handling complex shall be constructed in accordance with the application and this permit. If any changes are necessary, revised plans must be submitted and supplemental approval issued prior to actual construction. Construction authorization expires 3 years after issuance of this permit.
- 1.2 The project shall be constructed in accordance with the application described above. If any changes are necessary, revised plans must be submitted and supplemental approval issued prior to actual construction.
- 1.3 Representatives of the Department may, at any reasonable time, inspect this facility.
- 1.4 This permit may not be transferred to another location or to another piece of equipment or process.

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- 1.5 This permit may not be transferred to another person, owner, or operator unless the transfer has been approved in advance by the Department. A request for a permit transfer shall be received by the Department at least 30 days before the date of the requested permit transfer. This request shall include:
 - 1.5.1 Signed letters from each person stating the permit transfer is agreeable to each person; and
 - 1.5.2 An Applicant Background Information Questionnaire pursuant to 7 Del C, Chapter 79 if the person receiving the permit has not been issued any permits by the Department in the previous 5 years.Approval (or disapproval) of the permit transfer will be provided by the Department in writing.
- 1.6 The applicant shall, upon completion of the construction, installation, or alteration, request in writing that the Department grant approval to operate.
 - 1.6.1 A separate application to operate pursuant to 7 DE Admin. Code 1102 does not need to be submitted to the Department for the equipment or process covered by this construction permit. Upon a satisfactory demonstration by an on-site inspection that the equipment or process complies with all of the terms and conditions of this permit, the Department shall issue a 7 DE Admin. Code 1102 Operating Permit for this equipment or process.
 - 1.6.2 The applicant shall notify the Department sufficiently in advance of the demonstration and shall obtain the Department's prior concurrence of the operating factors, time period, and other pertinent details relating to the demonstration.
 - 1.6.3 The provisions of 7 DE Admin. Code 1102 Sections 2.1 and 11.3 shall not apply to the operation of equipment or processes for the purposes of initially demonstrating satisfactory performance to the Department following construction, installation, modification, or alteration of the equipment or processes.
- 1.7 The owner or operator shall not initiate construction, install, or alter any equipment or facility or air contaminant control device which will emit or prevent the emission of an air contaminant prior to submitting an application to the Department pursuant to 7 DE Admin. Code 1102, and, when applicable 7 DE Admin. Code 1125, and receiving approval of such application from the Department; except as exempted in 7 DE Admin. Code 1102 Section 2.2.

2. Emission Limitations

- 2.1 Air contaminant emission levels from the coke storage and handling system inclusive of the baghouses, storage silo, truck loading operation, and gas scrubber shall not exceed the following and those specified by the State of Delaware "Regulations Governing the Control of Air Pollution."
 - 2.1.1 The particulate matter (PM) emissions from the scrubbers and baghouses shall not exceed the following limits:

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Emission Point	Control Number	PM Outlet Grain Loading (grains/scf) ³
PS-01A	Conveyor A, BH-1	0.014
PS-02A	Conveyor B, BH-2	0.014
PS-03A	Conveyor C, BH-3	0.014
PS-04A	Conveyor D, BH-4	0.014
PS-05	Railcar loading, BH-5	0.014
PS-06	Pug Mills, Scrubber	0.067

- 2.1.2 Aggregate emissions from the emission points identified in Condition 2.1.1, truck and railcar loading, and from the storage pile in the barn 27.2 tons per year of PM and 20.1 tons per year of PM₁₀. "Tons per year" shall mean total emissions on a rolling 12-month basis.
- 2.2 The Company shall not cause or allow the emission of visible air contaminants and/or smoke from a stationary source, the shade or appearance of which is greater than 20% opacity for an aggregate of more than 3 minutes in any 1 hour or more than 15 minutes in any 24 hour period.
- 2.3 Odors from this source shall not be detectable beyond the plant property line in sufficient quantities such as to cause a condition of air pollution.
- 2.4 The Company shall not cause or allow visible particulate emissions of any petroleum coke that is being transported by a motor vehicle within the refinery.
- 2.5 The Company shall not cause or allow the transport of material to or from the barn in such a manner as may cause a condition of air pollution.

3. Operational Limitations

- 3.1
- 3.1.1 At all times, including periods of startup, shutdown, and malfunction, the Company shall, to the extent practicable, maintain and operate the facility including all associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions.
- 3.1.2 All structural and mechanical components shall be maintained in proper operating condition.
- 3.2 The coke moisture content of the coke being loaded into trucks shall be at least 8% at all times and at least 10% on an annual average basis.
- 3.3 The Company shall pave and maintain as paved all roads and truck movement areas within the facility that are used in transporting or moving petroleum coke.

³ The Outlet Grain Loading emission rate shall be the arithmetic mean of the results of the three test runs as required by the stack testing requirement in Condition 4.2

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- 3.4 The Company shall regularly use a street sweeper or other approved method to clean the paved areas where coke accumulates.
- 3.5 Trucks containing coke must be covered at all times except when being loaded with coke or as soon as practicable thereafter.
- 3.6 This permit does not authorize importing coke into the refinery and does not authorize the storage of coke in areas outside of the coker silo and the coke barn.
- 3.7 The differential pressure ranges for the scrubber and baghouses shall operate within the manufacturer's established ranges.
- 3.8 The gravity chute and extendable load out spout for loading railcars shall extend to the railcar being loaded during railcar loading operations. The loading operation shall not generate any visible emissions at this transfer point.
- 3.9 Railcar loading operations shall not be conducted unless its dust collector system is operating properly. Proper operation of the dust collector system shall be based on compliance with the manufacturer's recommended operating procedures and parameters.

4. Testing and Monitoring Requirements

- 4.1 Within 60 days after achieving the maximum production rate at which the facility will be operated, but not later than 180 days after initial startup of such facility, the owner or operator shall conduct performance test(s) and furnish the Department with a written report of the results of such performance test(s) in accordance with the following general provisions:
 - 4.1.1 One (1) original and 2 copies of the test protocol shall be submitted including a "Source Sampling Guidelines and Preliminary Survey Form a minimum of 30 days in advance of the tentative test date to the addressees in Condition 4.1.3. The tests shall be conducted in accordance with the State of Delaware and Federal requirements.
 - 4.1.2 The test protocol shall be approved by the Department prior to initiating any testing. Upon approval of the test protocol, the Company shall schedule the compliance demonstration with the Air Surveillance and Engineering & Compliance Branches. The Department must observe the test for the results to be considered for acceptance, unless the Department determines in advance, in writing, that the test need not be observed. Further, the Department may in its discretion determine based on its observation of the test that it need not observe the entire test.
 - 4.1.3 The final results of the testing shall be submitted to the Department within 60 days of the test completion. One original and 2 copies of the test report shall be submitted to the addresses below:

Original and 1 Copy to:
Engineering & Compliance Branch
Attn: Assigned Engineer
Blue Hen Corporate Center
655 S. Bay Rd, Suite 5 N

One Copy to:
Air Surveillance Branch
Attn: Program Manager
715 Grantham Lane
New Castle, DE 19720

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- 4.1.4 To be considered valid, the test report shall include the emissions test report (including raw data from the test) as well as a summary of the results and a statement of compliance or non-compliance with permit conditions signed by a member of the Company's Health, Safety, and Environment Department.
- 4.2 Initial stack tests for PM and PM₁₀ shall be conducted at the scrubber and baghouses in accordance with the appropriate testing methods and at 5 year intervals thereafter. A list of baghouses to be tested shall be submitted for the Department's approval. After the initial tests, the Company may petition the Department to reduce the number of units retested.
- 4.3 Visible Emission Standards:
 - 4.3.1 For each baghouse, compliance with the visible emission standard in Condition No. 2.2 shall be demonstrated by operating and monitoring a broken bag detection system or by performing daily qualitative stack observations according to Condition 4.3.3.
 - 4.3.2 For the scrubber, compliance with the visible emission standard in Condition No. 2.2 shall be demonstrated by operating the scrubber within the specified differential pressure range established in accordance with Condition 3.9, or by performing daily qualitative stack observations according to Condition 4.3.3.
 - 4.3.3 When required by sections 4.3.1 and 4.3.2, the Company shall conduct daily qualitative stack observations to determine the presence of any visible emissions when the unit is in operation.
 - 4.3.3.1 If visible emissions are observed, the Owner/Operator shall take corrective actions and/or conduct a visible observation in accordance with section 4.3.4.
 - 4.3.3.2 If no visible emissions are observed, no further action is required.
 - 4.3.4 If required under 4.3.3, the Owner Operator shall, in accordance with Subsection 1.5(c) of Regulation No. 20, conduct visual observations at fifteen second intervals for a period of not less than one hour except that the observations may be discontinued whenever a violation of the standard is recorded. The additional procedures, qualification, and testing to be used for visually determining opacity shall be those specified in Sections 2 & 3 (except Section 2.5 and the second sentence of Section 2.4) of Reference Method 9 set forth in Appendix A, 40 CFR Part 60, revised July 1, 1982.
- 4.4 Compliance with 2.1.2 shall be based upon stack tests data conducted pursuant to Condition 4.2 using the calculation methodology in its September 17, 2010 permit application.
- 4.5 Compliance with Condition 3.2 shall be based on collecting a sample of coke each day that petroleum coke is loaded into trucks and analyzing the sample to determine the moisture

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content. After one year of testing demonstrating that the source is meeting the requirements of Condition 3.2, the Company may petition the Department to reduce the testing frequency to weekly.

- 4.6 Compliance with Condition No. 3.1 shall be based on information available to the Department concerning the Company's actions with respect to such events, and shall include the Department's review of all available facts and circumstances including, but not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
- 4.7 The Company shall conduct daily ambient TSP monitoring in accordance with the "Quality Assurance Project Plan & Standard Operation Procedures for the Ambient Continuous Particulate Air Quality Monitoring Program at the Motiva Delaware City Power Plant and Coke and Flux Handling/Storage Facility", dated April 2002. If no exceedance of the secondary Delaware TSP 24-hour AAQS is monitored for any one year period after the issuance of the operating permit, the Company may petition the Department to approve ceasing monitoring operations.
- 4.8 Compliance with Permit Condition 3.9 shall be based on continuously monitoring the differential pressure across the scrubber and the bag house.
- 4.9 Compliance with Permit Condition 2.3 shall be based upon monitoring/testing, including but not limited to scintometer tests, air quality monitoring, and affidavits from affected citizens and investigators.
- 4.10 Compliance with Permit Conditions 2.4 and 2.5 shall be based upon compliance with Operational Limitations 3.3 through 3.6.
- 4.11 Compliance with Conditions 3.8 and 3.9 shall be based upon proper operation of the railcar loading dust collector system. Proper operation of the dust collector system will be based on compliance with the manufacturer's recommended operating procedures and parameters.

5. Record Keeping Requirements

- 5.1 The owner or operator shall maintain all records necessary for determining compliance with this permit in a readily accessible location for 5 years and shall make these records available to the Department upon written or verbal request.
- 5.2 The following information shall be recorded:
 - 5.2.1 Daily visible emissions observations, as required in Condition 4.3;
 - 5.2.2 Continuous scrubber and baghouse differential pressures when required;
 - 5.2.3 Stack test results and related data, regardless of whether or not the stack test is completed; and
 - 5.2.4 The date, time, location, and corrective actions taken when the broken bag detection system indicates a potential failure.

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- 5.2.5 The rolling 12 month total PM and PM₁₀ emissions shall be calculated and recorded each month.
- 5.2.6 Records of daily ambient TSP monitoring required by Condition 4.7.

6. Reporting Requirements

- 6.1 Emissions in excess of any permit condition or emissions which create a condition of air pollution shall be reported to the Department immediately upon discovery and after activating the appropriate site emergency plan, in the following manner:
 - 6.1.1 By calling the Department's Environmental Emergency Notification and Complaint number (800) 662-8802, if the emission poses an imminent and substantial danger to public health, safety or to the environment.
 - 6.1.2 Other emissions in excess of any permit condition or emissions which create a condition of air pollution may be called in to the Environmental Emergency and Complaint number (800) 662-8802 or faxed to (302) 739-2466. The ability to fax in notifications may be revoked upon written notice to the Company by the Department in its sole discretion.
- 6.2 In addition to complying with complying with Condition 6.1 of this permit, the Owner/Operator shall satisfy any reporting required by the "Reporting of a Discharge of a Pollutant or an Air Contaminant" regulation, within 30 days of becoming aware of an occurrence subject to reporting pursuant to these conditions. All reports submitted to the Department shall be submitted in writing and shall include the following information:
 - 6.2.1 The name and location of the facility;
 - 6.2.2 The subject source(s) that caused the excess emissions;
 - 6.2.3 The time and date of the first observation of the excess emissions;
 - 6.2.4 The cause and expected duration of the excess emissions;
 - 6.2.5 For sources subject to numerical emission limitations, the estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions; and
 - 6.2.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions.
 - 6.2.7 Emissions on the same day from the same emission unit may be combined into one report. Emissions from the same cause that occur contemporaneously may also be combined into one report.
 - 6.2.8 The Company shall submit an electronic copy of all required reports to the Department's compliance engineer assigned to the Refinery.
- 6.3 Quarterly reports of Daily Ambient TSP monitoring required by Condition 4.7.
- 6.4 One (1) original and 1 copy of all required reports shall be sent to the address below:
 - Division of Air Quality
 - Blue Hen Corporate Center
 - 655 S. Bay Road, Suite 5 N
 - Dover, DE 19901

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7. Administrative Conditions

- 7.1 This permit shall be made available on the premises.
- 7.2 Failure to comply with the provisions of this permit may be grounds for suspension or revocation.
- 7.3 This permit supersedes **Permit: APC-82/1209-CONSTRUCTION (6)** issued on December 23, 2008.

Sincerely,

Paul E. Foster, P.E.
Program Manager
Engineering & Compliance Branch

PEF:CRR:slb
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pc: Dover Title V File