



COMMONWEALTH OF PENNSYLVANIA
ENVIRONMENTAL HEARING BOARD



CLEAN AIR COUNCIL	:	
	:	
v.	:	EHB Docket No. 2016-073-L
	:	
COMMONWEALTH OF PENNSYLVANIA,	:	
DEPARTMENT OF ENVIRONMENTAL	:	
PROTECTION and SUNOCO PARTNERS	:	Issued: January 9, 2019
MARKETING & TERMINALS, L.P.,	:	
Permittee	:	

ADJUDICATION

By Bernard A. Labuskes, Jr., Judge

Synopsis

In an appeal involving the concept of project aggregation under the Clean Air Act, the Board finds that the Department erred in concluding that the work permitted under one of several plan approvals sought by a major facility was a stand-alone project that did not need to be aggregated with other work at the facility for purposes of determining prevention of significant deterioration (PSD) and new source review (NSR) applicability. The Board remands the plan approval to the Department for further consideration.

FINDINGS OF FACT

1. The Department of Environmental Protection (the “Department”) is the agency with the duty and authority to administer and enforce the Air Pollution Control Act, 35 P.S. §§ 4001 – 4015; Section 1917-A of the Administrative Code of 1929, 71 P.S. § 510-17; and the rules and regulations promulgated thereunder. (Stipulation of the Parties No. (“Stip.”) 1.)

2. Sunoco Partners Marketing & Terminals, L.P. (“Sunoco” or “Sunoco Partners”) owns and operates the Marcus Hook terminal facility (the “facility”) in Marcus Hook Borough,

Delaware County, Pennsylvania under Title V Operating Permit No. 23-00119. (Stip. 2, 3; Sunoco Exhibit No. (“S.Ex.”) 48.)

3. Appellant Clean Air Council (the “Council”) is a citizens’ group based in Philadelphia. (Stip. 4.)

4. The Marcus Hook facility operated as a crude oil refinery from its inception until the end of 2011. (Notes of Transcript page (“T.”) 28, 113, 116.)

5. After it was shut down as a refinery, Sunoco’s facility had the space, fractionators, docks, boilers, cooling towers, and other assets able to be reused for the processing and fractionation of natural gas liquids (NGLs). (T. 28-29, 179-80.)

6. Fractionation of NGLs means separating out the various component products, e.g. ethane and propane, from the mixed liquids. (T. 116, 181.)

7. In early 2013, Sunoco Logistics, of which Sunoco Partners is a division, purchased the facility from Sunoco Inc., which is a separate legal entity from Sunoco Partners. (T. 28, 113, 117, 181-83.)

8. Sunoco is in the process of repurposing the facility from a crude oil refinery into a facility for the processing and storage of NGLs. (T. 28-29, 113, 116, 177-78, 277; Appellant Exhibit No. (“A.Ex.”) 2.)

9. The facility is intended to receive most of its NGL feedstock from the Mariner East pipelines. (T. 277, 294-95; A.Ex. 2, 6.)

10. The Mariner East pipelines are being constructed to transport NGLs from Pennsylvania’s Marcellus Shale region to the Marcus Hook facility. (A.Ex. 2, 3, 4.)

11. The key components of NGLs are as follows:

a. Ethane (C₂H₆) (also known as C2 because it has two carbon atoms)

- b. Propane (C₃H₈) (C3)
- c. Butane (C₄H₁₀) (C4)
- d. Pentane (C₅H₁₂) (C5)

(T. 40, 593; A.Ex. 8.)

- 12. C3+ is NGLs with the ethane (C2) already removed. (T. 39-41.)
- 13. C4+ is NGLs with the ethane (C2) and propane (C3) removed. (T. 140.)
- 14. Natural gasoline is C5+, which has already had the ethane (C2), propane (C3), and butane (C4) separated out. (T. 32, 40-41.)
- 15. Natural gasoline is fractionated into pentane (C5) (overheads product) and light naphtha (C6+) (bottoms product). (T. 32-33; A.Ex. 8.)
- 16. Due to its location in Delaware County, Sunoco's facility is subject to the Nonattainment New Source Review (NSR)¹ and Prevention of Significant Deterioration (PSD) regulations. (T. 735, 740.)
- 17. NSR is a regulation for nonattainment areas for major sources of nitrogen oxide (NO_x), volatile organic compounds (VOCs), and particulate matter with a diameter less than 2.5 micrometers (PM 2.5). (T. 735.)
- 18. Delaware County is in nonattainment for NO_x, VOCs, and PM 2.5. 25 Pa. Code § 127.201(f). (A.Ex. 24.)
- 19. Delaware County is designated nonattainment for ozone. 40 C.F.R. § 81.339.

¹ As discussed in our earlier Opinion in this case, *Clean Air Council v. DEP*, EHB Docket No. 2016-073-L, slip op. at 6-7 (Opinion and Order, Mar. 9, 2018), the term "New Source Review" tends to be used differently in various settings. In Pennsylvania's regulations, it generally refers to what in the federal regulations is known as Nonattainment New Source Review ("NNSR"). (*See also* T. 456-47.)

20. Sunoco's facility is located within an attainment area for carbon monoxide (CO) and is therefore subject to the PSD regulations for all the National Ambient Air Quality Standards pollutants, including CO. (Stip. 6.)

21. The PSD regulations apply to the construction of any new major stationary source, or any major modification of any existing stationary source in an area designated as attainment or unclassifiable. 40 C.F.R. § 52.21(a)(2) (incorporated by reference by 25 Pa. Code § 127.83).

22. Pennsylvania references and incorporates the federal PSD regulations. 25 Pa. Code § 127.83. (T. 456.)

23. Delaware County is in attainment for nitrogen dioxide, sulfur dioxide, carbon monoxide, particulate matter, and greenhouse gases. (T. 740.)

24. A facility located in Delaware County that emits or has the potential to emit at least 25 tons per year of VOCs or NOx is considered a major facility. 25 Pa. Code § 127.201(f). (T. 735.)

25. A facility located in Delaware County that emits or has the potential to emit at least 10 tons per year of PM 2.5 is considered a major facility. (T. 735.)

26. Sunoco's Marcus Hook facility is considered a major facility for NSR and PSD purposes. (T. 743-44.)

27. The Department performs a new source review applicability determination during its review of a plan approval application for the construction of a new major facility or a modification at an existing major facility. (T. 735-36.)

28. To calculate the emissions from the project, the Department determines which sources are new, which sources are existing and modified, and which sources are existing and

unmodified because the method of calculating the emissions is different for each one. (T. 736-37.)

29. An emissions increase that is “significant” triggers NSR requirements. 25 Pa. Code §§ 127.201(d), 127.203a.

30. An emissions increase is significant if the rate of emissions equals or exceeds the following rates:

Carbon monoxide: 100 tons per year (TPY)

Nitrogen oxides: 40 TPY

Sulfur dioxide: 40 TPY

Particulate matter: 25 TPY

40 C.F.R. § 52.21(b)(23)(i) (incorporated by reference by 25 Pa. Code § 127.83); 25 Pa. Code § 121.1 (definition of “significant”).

31. After determining that a plan approval application is administratively complete, the Department reviews the application, looking at the different sources involved, the emissions, how the project relates to other projects, and the applicable regulations. (T. 732.)

32. After understanding the application, the Department begins to draft a technical review memo, explaining the Department’s analysis of the application. (T. 732.)

33. After drafting the technical review memo, the Department drafts a plan approval. (T. 733.)

Plan Approval 1, 23-0119

34. In 2012, Sunoco commenced an “open season” for its Mariner East 1 pipeline. (T. 586-87; A.Ex. 2.)

35. An open season is a regulated process through which customers, primarily natural gas producers, can “subscribe” to use capacity on the pipeline to ship NGLs from the Marcellus Shale region to Marcus Hook. (T. 187, 586-87, 613; A.Ex. 2.)

36. At the time of the first open season, the Marcus Hook facility was still owned by Sunoco, Inc. (T. 181-83, 277-78; A.Ex. 2.)

37. In September 2012, Sunoco completed a successful open season for Mariner East 1. (T. 269-70, 586-87; A.Ex. 2.)

38. The customers who subscribed to take capacity on the pipeline contracted with Sunoco to secure their respective capacities. (T. 589.)

39. They also contracted with Sunoco to acquire the right to store ethane and propane at the facility in tanks that would be constructed as part of a plan approval. (T. 587.)

40. Brian P. MacDonald, Chairman and Chief Executive Officer of Sunoco, Inc. and Chairman of Sunoco Logistics, said in the open season announcement that “Mariner East is an important project in two ways. It supports the continued development of the Marcellus Shale, one of Pennsylvania’s most important resources, by offering producers an outlet for valuable products. Mariner East also represents a significant step in re-purposing the former Marcus Hook refinery site and creating a world-class facility with a promising future based on natural gas liquids.” (A.Ex. 2.)

41. Sunoco provides storage of NGLs to its customers for eventual redistribution and marketing because it makes pipeline operations more efficient. (T. 287-89.)

42. In November 2012, Sunoco submitted a plan approval application to the Department to install a cryogenic propane storage tank, a cryogenic ethane storage tank, a new flare, and associated piping (“Project 1”). (A.Ex. 6.)

43. Sunoco called the construction project “SXL Project Mariner.” (A.Ex. 6.)

44. The stated purpose of the work was to build a new cryogenic ethane and propane storage facility that would store liquid ethane and propane to be loaded onto cryogenic marine vessels for export. (A.Ex. 6.)

45. The work covered by Project 1 would provide liquefied ethane and propane products received through an existing pipeline, Mariner East 1. The liquefied ethane and propane would not be blended before entering the pipeline. Each product would be transported separately in the pipeline and there would be some transmix created in the pipeline when transitioning from one product to the other. The transmix would still meet the propane product specification and would be directed to propane product storage. (A.Ex. 2, 6.)

46. Transmix is a term for when two different NGL products, e.g. ethane and propane, get mixed together during transport through a pipeline. (T. 39, 194, 226; A.Ex. 6.)

47. On February 4, 2013, the Department prepared a review memorandum on Sunoco’s plan approval application. (T. 341-42; Commonwealth Exhibit No. (“C.Ex.”) 2.)

48. The Department performed an NSR and PSD applicability determination and concluded that the emissions from the work covered by Project 1 did not exceed the thresholds under both programs. (C.Ex. 2.)

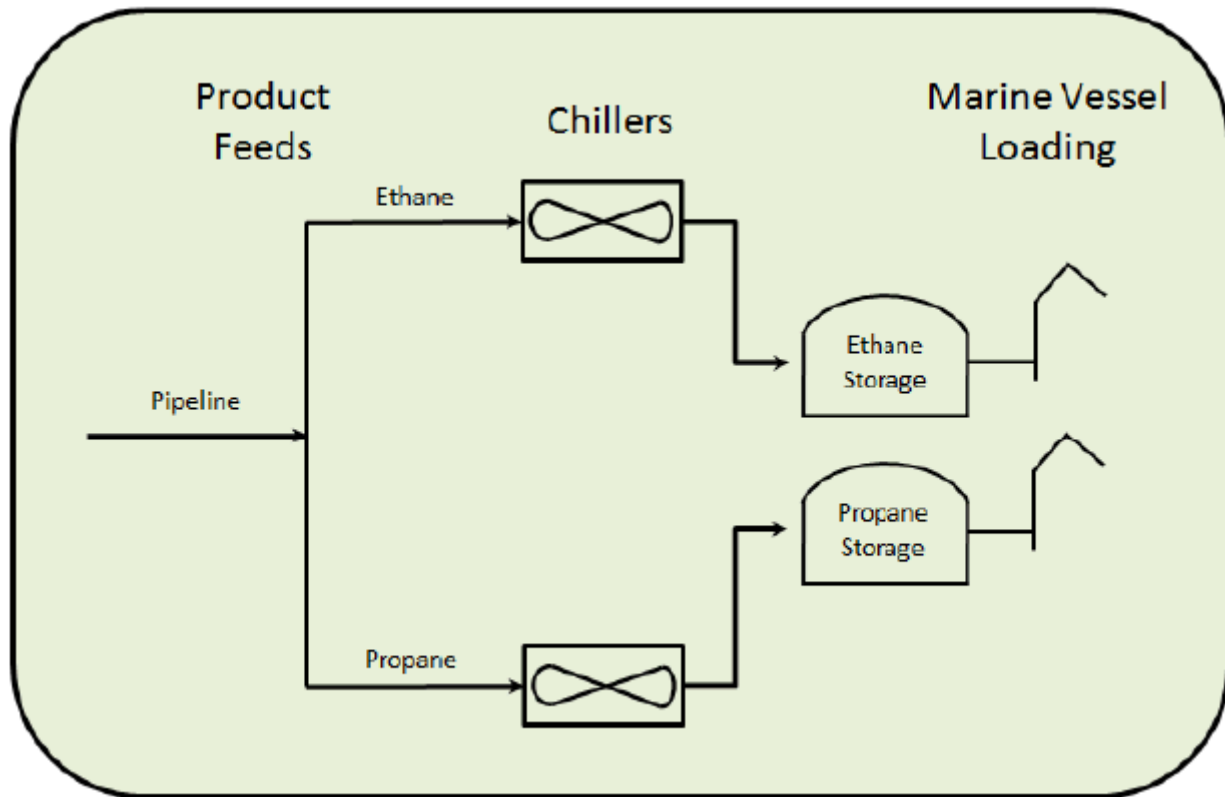
49. On February 5, 2013, the Department issued Plan Approval 23-0119 (“Plan Approval 1”) to Sunoco for SXL Project Mariner. (Stip. 5; A.Ex. 29.)

50. The plan approval authorized the facility to receive liquefied ethane or propane via pipeline, which was to be cryogenically stored by separate liquefaction and boil-off gas management systems, with separate delivery and loading pipes. Periodically, these liquids would be shipped off-site by marine vessel. (C.Ex. 2.)

51. The specific components of the project were as follows: one new 500,000 barrel (bbl) cryogenic propane storage tank; one new 300,000 bbl cryogenic ethane storage tank; one new flare for emergency depressurization events; installation of the necessary piping, valves, flanges, etc. to receive and transfer ethane and propane; installation of new loading arms and dedicated vapor recovery at the existing marine loading docks, which are designed to purge the liquid ethane and propane back to storage prior to breaking the seal on the marine vessel; and separate refrigeration units capable of maintaining a liquid phase for the ethane and propane storage. (C.Ex. 2.)

52. Plan Approval 1 would also utilize the Marcus Hook facility's existing Cavern #5 for additional propane storage. (C.Ex. 2.)

53. The process diagram for Project 1 is as follows:



(A.Ex. 6.)

54. The Mariner East 1 pipeline used by Plan Approval 1 was an existing transport system that had been used to transport material from the former refinery to the western part of Pennsylvania and beyond. The flow of this pipeline would be reversed to transport ethane and propane to Marcus Hook. (C.Ex. 2.)

55. The two new cryogenic tanks would each have their own vapor pressure balance and collection system, collecting the evaporating vapors at 100-percent capture, condensing them back to a liquid phase, and then piping them back to their respective storage tanks. (C.Ex. 2.)

56. Three existing marine vessel docks would be utilized by Project 1. Docks 2A and 3A (both located in Pennsylvania), and 3C (located in Delaware). Ethane is planned to be loaded into 136,000 bbl cryogenic vessels from Dock 2A, while propane is planned to be loaded into 500,000 bbl cryogenic vessels at Docks 3A and 3C. Each dock would have two new identical loading arms and one vapor return line. The closed-loop vapor return line will collect the boil-off gases that are generated during loading. These vapors would be subsequently chilled, condensed, and returned to the proper storage tank. At the end of each loading event, each loading arm would be nitrogen purged to complete the transfer and capture all of the vapors. (C.Ex. 2.)

57. A new air-assisted flare would be utilized for flaring product streams that are less than -20 degrees Fahrenheit. The flaring is necessary for emergency depressurization caused by, e.g., power outages or equipment exposed fires. (C.Ex. 2.)

58. It was anticipated that, during flaring emergencies, additional flaring could include the use of an existing steam-assisted flare located in Delaware. This flare was previously operated when the facility was a refinery and was oversized due to the possible requirement in flare capacity at a petrochemical refinery. (C.Ex. 2.)

Plan Approval A, 23-0119A

59. On March 4, 2013, about a month after Plan Approval 1 was issued, Sunoco submitted a plan approval application to install and operate a deethanizer unit, amine treatment system, dehydration system, and associated piping (“Project A”). (A.Ex. 7.)

60. Sunoco called the work to be performed pursuant to Project A, “SXL Project Mariner – Deethanizer.” (A.Ex. 7.)

61. The deethanizer unit would receive a liquefied blend of ethane and propane by pipeline and would utilize the ethane and propane tanks approved in Plan Approval 1. (A.Ex. 7, 18.)

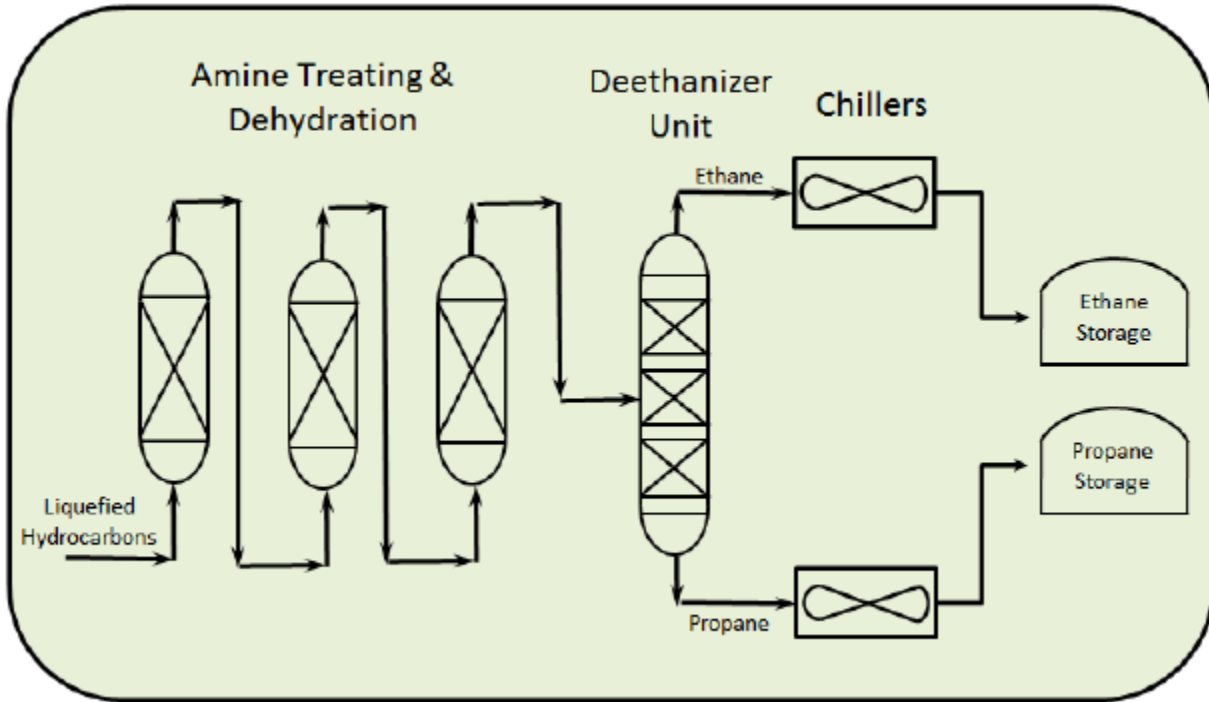
62. Sunoco’s application stated, “All the sources and associated emissions from the cryogenic storage facility from Plan Approval No. 23-0119 [Plan Approval 1] are fully included in this project.” (T. 352; A.Ex. 7.)

63. On September 5, 2013, the Department issued Plan Approval 23-0119A (“Plan Approval A”) to Sunoco. (A.Ex. 30.)

64. The stated purpose of the work authorized under Plan Approval A was to “construct and operate a deethanizer for the purpose of separating a liquid pipeline stream of mixed propane and ethane (shipped from western Pennsylvania) into the ethane and propane fractions.” (A.Ex. 30.)

65. Prior to this project, the former refinery supplied steam to itself to heat some of the storage tanks and the office building, as well as supplying steam to another facility owned by a different company (Braskem). With Project A, Sunoco would utilize the existing boilers to continue supplying this steam demand, in addition to supplying steam for the deethanizer project. (A.Ex. 18, 20.)

66. The process diagram for Project A is as follows:



(A.Ex. 7.)

67. The deethanizing system was to consist of an amine treatment system, a dehydration segment, and the deethanizer unit itself. Gases that are in demand from the Marcellus Shale region are removed by other companies, resulting in ethane and propane being left behind to be sold on the open market. Transportation of these products would utilize the existing Mariner East 1 pipeline. The liquid ethane and propane would be shipped via pipeline approximately 300 miles from western Pennsylvania to Marcus Hook resulting in some mixing of the two chemicals. The deethanizer would be used to separate (fractionate) these chemicals back into their two individual compounds. (A.Ex. 18.)

68. Amine treatment is used to remove hydrogen sulfide (H₂S) and carbon dioxide (CO₂) gases as these can corrode the downstream piping components and the deethanizer separation column. These two gases are commonly referred to as sour gases or acid gases.

There are several amines used, with the most common ones being the alkanolamines that are abbreviated as: DEA, MEA, and MDEA. Typically, the flowing amine solution absorbs H₂S and CO₂ from the counter flowing sour gas stream to produce a sweetened gas stream (i.e., a gas free of hydrogen sulfide and carbon dioxide) as a product and an amine solution rich in the absorbed acid gases. (A.Ex. 18.)

69. The amine treatment system essentially removes various contaminants from the NGL stream for the purpose of meeting product specifications. (T. 125.)

70. After removal of the acid gases, the liquefied hydrocarbon streams would be subjected to heated air for the removal of the entrained water by passing through a series of dehydrators. Super-heated propane would be used to regenerate the dehydrators, thus removing the water from this part of the system. The heat source for the propane would be electric. (A.Ex. 18.)

71. The deethanizer unit consisted of one separation column followed by ethane and propane chillers. Low-pressure steam would be supplied by the four existing auxiliary boilers from the former refinery. The dehydrated liquefied hydrocarbon stream then would enter the separation column and the ethane and propane fractions would be separated using a refrigerant. Once separated, each individual stream would be cooled using chillers prior to being sent to their respective storage tanks. (A.Ex. 18.)

72. The processing of NGLs through the deethanizer unit is a fractionation process. (T. 123-24.)

73. Sunoco and the Department estimated the piping components (valves, flanges, relief valves, etc.) associated with Project A as follows:

Valves – 786 components;
Pressure relief valves – 54 components; and

Flanges/Connections – 618 components

(A.Ex. 18.)

74. These components are sources of fugitive emissions. (A.Ex. 7, 18.)

75. The Department performed NSR and PSD applicability determinations and concluded that the work covered by Project A would not exceed the significant emissions thresholds. (A.Ex. 18.)

76. The Department determined that the work covered by Project A and the work covered by Plan Approval 1 were not “linked” because the work from Plan Approval 1 did not rely on the installation of a deethanizer, and “they were based on different customer specifications.” (T. 350-51, 353.)

77. The Department used the term “linked” to refer to whether two or more projects are technically and economically connected to each other and whether the emissions resulting from all of the work associated with the projects should be added up to determine whether NSR or PSD requirements are triggered. (T. 350-55.)

Plan Approval B, 23-0119B

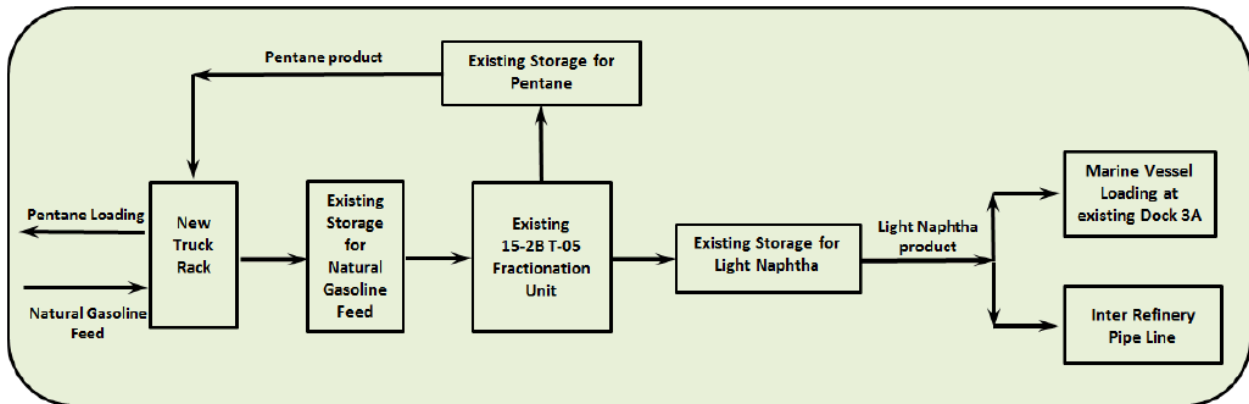
78. On September 13, 2013, less than two weeks after Plan Approval A was issued, Sunoco submitted a plan approval application to the Department to receive natural gasoline via a truck rack, fractionate the natural gasoline into pentane and light naphtha, and load the fractionated products onto marine vessels via an existing loading dock (“Project B”). (T. 593; A.Ex. 8.)

79. Sunoco called the Project B work the “SXL Natural Gasoline Project.” (A.Ex. 8.)

80. The work would generally involve the installation of a truck loading and offloading facility and the repurposing of equipment, including an existing fractionation tower, the 15-2B T05 tower. (A.Ex. 8, 31.)

81. More specifically, the plan approval application was for the installation of a 4-bay unloading rack for the natural gasoline and to restart the following sources that had been operating under a Department approved deactivation and maintenance plan: the 15-2B T05 fractionation tower and associated piping and equipment; three existing internal floating roof tanks for storage of pentane; four existing internal floating roof tanks for storage of light naphtha; four existing internal floating roof tanks for the storage of natural gasoline; and off-loading of the light naphtha through either an existing marine vessel loading dock or via rail. (A.Ex. 19.)

82. The process diagram for Project B is as follows:



(A.Ex. 8.)

83. The natural gasoline feedstock to be received via tanker truck and off-loaded through the new 4-bay loading rack would be transferred into existing permitted storage tanks—Tanks 607 (Source 188), 609 (Source 188), 610 (Source 212), and 611 (Source 192)—until ready to be fractionated. (A.Ex. 19.)

84. Natural gasoline (C5+) (also called liquid natural gas) is defined as a natural gas liquid having a vapor pressure between that of natural gas condensate (drip gas) and liquefied petroleum gas, and having a boiling point within the range of gasoline. Natural gasoline is generally the C5s (pentane and isopentane) and heavier hydrocarbon chains (C6 and C6+, commonly called naphthas) that are liquids at ambient pressure and temperature. They are volatile and unstable but can be blended with other hydrocarbons to produce commercial gasoline. (A.Ex. 19.)

85. The 15-2B T05 fractionation tower (depentanizer) would separate pentane (C5) from the natural gasoline (C5+), leaving light naphtha (C6+). (T. 31-32; A.Ex. 31.)

86. The fractionation tower boils off liquids at various temperatures, and subsequently condenses them at just below the boiling temperature. This boiling and condensing process is repeated several times inside the tower, essentially purifying the liquid streams into their desired fractions and individual NGL products. (A.Ex. 19.)

87. Once fractionated and stored, the refined pentane would be stored in three existing spheres (numbers SPH-3, SPH-4, and HS-16) prior to being off-loaded onto tanker trucks through the 4-bay loading rack and its vapor balance system. (A.Ex. 8, 19.)

88. The light naphtha fraction would be stored in approved vessels awaiting either off-loading using the existing marine vessel loading at Dock 3B, which has a marine vapor recovery unit, or transported off-site via trucks. (A.Ex. 19.)

89. Steam from the existing auxiliary boilers would be used to provide the driving force of the fractionation tower for the distillation of natural gasoline into its speciated components of pentanes and heavier products. (A.Ex. 19.)

90. Steam from the boilers would continue to provide steam at the former refinery, as well as Sunoco's previously permitted projects, Plan Approvals 1 and A (23-0119 and 23-0119A). (A.Ex. 19.)

91. Commercial natural gas is mostly made up of methane, but can contain trace amounts of ethane, propane, butane, pentane, hexane, heptane, and heavier hydrocarbon chain molecules. The boilers at the facility were permitted to operate on natural gas, along with small amounts of H₂S, methane, ethane, and propane from the amine treatment system as approved in Plan Approval A. Therefore, no new fuel would be added to the operation of the boilers and no new air pollutants would be emitted to the atmosphere. (A.Ex. 19.)

92. Air emissions at the loading rack would be minimized through the use of dry connections and a vapor recovery system, while air emissions from the marine vessel loading rack will be controlled by an existing permitted vapor recovery system. (A.Ex. 19.)

93. The loading rack would be equipped with a dry disconnect technology and a motor-operated valve that would only open while loading/unloading. (A.Ex. 19.)

94. Petroleum products would be off-loaded from Dock 3A, with the air emissions to be routed through a vapor recovery unit located on Dock 3B. The loading dock is an existing source that was previously permitted at the former refinery as Source 115. (A.Ex. 19.)

95. Sunoco and the Department stated that the loading operation was different from the loading operation of Plan Approval 1, which utilized loading Docks 2A, 3A, and 3C for the loading of liquid propane and liquid ethane; the cryogenic loading would occur at a different dock and utilize its own closed-loop return lines coupled with nitrogen purging to have zero emissions. (A.Ex. 19.)

96. Project B would use cooling water from the existing 15-2B cooling tower. (A.Ex. 8.)

97. As this was a new facility, piping components (valves, flanges, relief valves, etc.) were estimated by Sunoco and the Department as follows:

- Valves – 687 components;
- Pump seals – 19 components;
- Pressure relief valves – 101 components;
- Connectors – 952 components; and
- Sampling connections – 41 components

(A.Ex. 8, 19.)

98. On January 30, 2014, the Department issued Plan Approval 23-0119B (“Plan Approval B”) to Sunoco. (Stip. 7; A.Ex. 31.)

99. Plan Approval B authorized the installation and operation of a new four-lane offloading/loading facility for natural gasoline (aka natural gas condensates) and utilizing a vapor balance system. The project also entailed the use of the 15-2B T05 fractionation tower to separate pentane from natural gasoline (C5+). (T. 31-32; A.Ex. 31.)

100. There would be a change in the operation of the four auxiliary boilers as a new steam load from the fractionation tower would be placed back into service. (A.Ex. 19.)

101. The Department determined that the boilers were modified in part because of the change in the method of operation from the increased steam demand. (T. 355-56; A.Ex. 19.)

102. As part of Plan Approval B, the Department changed the emission caps on the four boilers to accommodate Project B and future projects. The Department used the new caps as the boilers’ aggregate potential to emit limits. (A.Ex. 19, 20, 31.)

103. The Department treated the four boilers as one emissions unit for NSR/PSD purposes. (A.Ex. 31.)

104. The Department analyzed whether the work covered by Plan Approval B should be “linked” with previous work covered by Plan Approvals 1 and A. (T. 357.)

105. The Department looked at the dependency of the Plan Approval B work with work for Plan Approvals 1 and A, and whether it was a part of a common plan. (T. 357-58.)

106. In the Department’s view, while Projects 1, A, and B were submitted over a short period of time, the work covered by Plan Approval B was not part of transporting ethane and propane through a pipeline and there were enough differences between the sources that the projects should not be linked. (T. 358.)

107. The Department determined, however, that the work covered by Plan Approval B exceeded the significant emission threshold for VOCs and Sunoco was required to obtain 34.65 tons of VOC emission reduction credits (ERCs) under the NSR program. (A.Ex. 19.)

108. The Department performed a PSD analysis as part of its review of the application for Plan Approval B and determined no PSD pollutant would be emitted at a rate greater than the significant emission threshold. (A.Ex. 19.)

109. The Department defined the project for purposes of NSR as the installation of a new source (loading rack and controls) and the modification of an existing major NSR facility because of the new steam load added from the fractionation tower. The fractionation tower and tanks had previously been placed into a Department-approved deactivation and maintenance plan in December 2011. (A.Ex. 19.)

110. In May 2015, Sunoco began to receive the natural gasoline feedstock that it was fractionating with the Project B equipment. (A.Ex. 12.)

111. After receiving the natural gasoline feedstock, but before fractionating it, Sunoco stores it in several existing storage tanks (Tanks 607, 609, and 611). (T. 93-94; A.Ex. 12.)

Plan Approval C, 23-0119C

112. Although Sunoco originally planned to use an air cooling system to perform the cooling function that is part of the deethanization process, Sunoco’s engineers determined that water cooling would be preferable and more efficient. (T. 131-32, 595; A.Ex. 20.)

113. On April 7, 2014, while the application for Plan Approval B was still under review, Sunoco submitted its application for Plan Approval No. 23-0119C (“Plan Approval C”), which would authorize the installation of a cooling tower to provide cooling water to the deethanizer permitted under Plan Approval A. (A.Ex. 9, 20.)

114. Sunoco called the work to be covered by Plan Approval C “SXL Project Mariner – Cooling Tower” (“Project C”). (A.Ex. 9.)

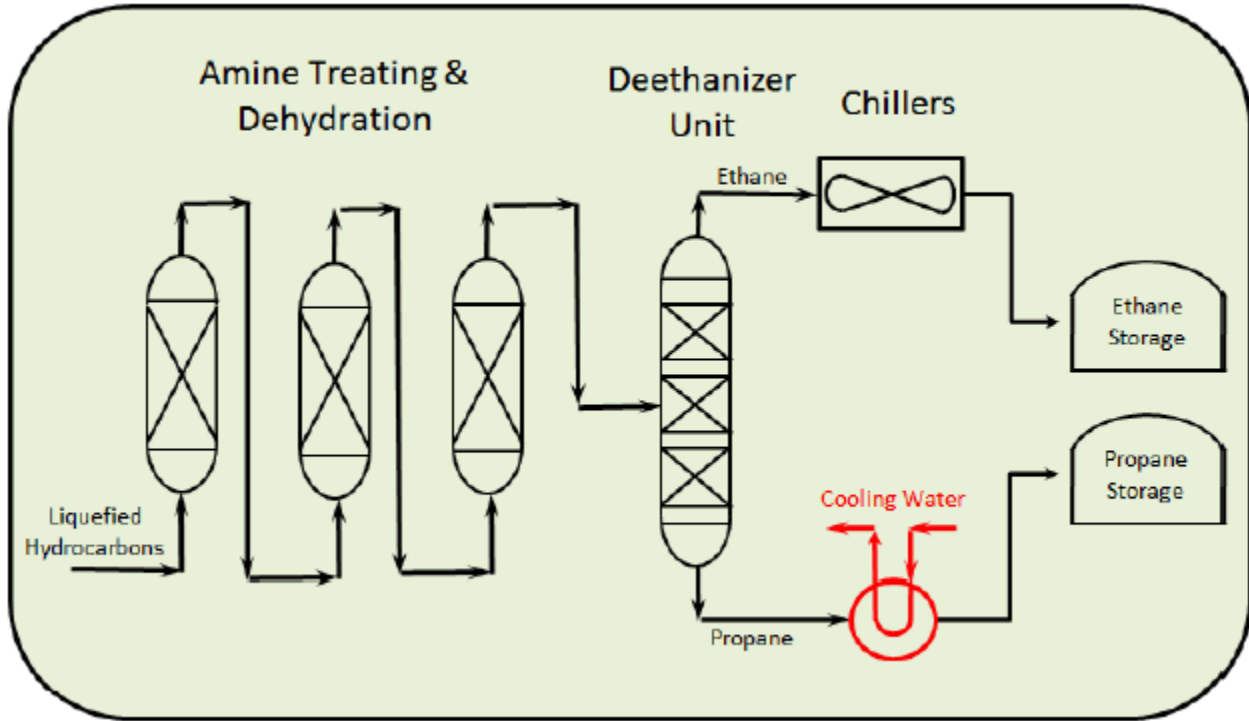
115. A Sunoco representative referred to Project C as “a design optimization that came about through the process of the engineering for 0119A [Plan Approval A].” (T. 594-95.)

116. The stated purpose of the Plan Approval C work was the installation and operation of a new cooling tower designed to process 30,000 gallons per minute (gpm) of cooling water required for the separation of ethane and propane at the deethanizer unit, which was installed as part of Plan Approval A. (A.Ex. 9, 32.)

117. Cooling towers are heat exchangers used to dissipate large heat loads to the atmosphere. (A.Ex. 20.)

118. Sunoco oversized the Project C cooling tower so it could be used with future planned projects. (A.Ex. 20, 32.)

119. The process flow diagram incorporating Projects A and C is as follows:



(A.Ex. 9.)

120. The process diagram for Project C shows the replacement of one chiller from the process diagram for Project A with a cooling tower. (A.Ex. 7, 9.)

121. The facility would continue to receive liquefied ethane and/or propane via pipeline, which would be separated using a liquefaction and boil-off gas management system condensed using the cooling tower, with the liquids being cryogenically stored. Periodically, these liquids would be shipped off-site by marine vessel. (A.Ex. 20.)

122. The Department stated in its technical review memo for Plan Approval C that “[t]he entire process from the previous plan approval will not change except for the addition of the cooling tower and the necessary piping, connections, flanges, relief valves, etc.” (A.Ex. 20.)

123. After the NGL feedstock is separated by the deethanizer, ethane and propane are chilled and condensed before being sent to product storage tanks. The new cooling tower is

required for the propane streams generated by the process before entering the propane cryogenic storage tank. (A.Ex. 9.)

124. High efficiency drift eliminators would be used on the cooling tower to reduce water mist, thereby reducing particulate matter emissions. (A.Ex. 9, 32.)

125. The Department determined that the work covered by Plan Approval C was technically and economically linked to the work performed pursuant to Plan Approval A (the deethanizer part of the process). (T. 372-73, 745.)

126. In its technical review memo, however, the Department mistakenly referred to Project C as a modification of Plan Approval 1 instead of Plan Approval A. (T. 372-73; A.Ex. 20.)

127. Because the Department “linked” the Plan Approval C work with the Plan Approval A work, the Department added the emissions of Plan Approval C as if those emissions had been part of the application for Plan Approval A. (T. 745-47; A.Ex. 20.)

128. The Department concluded that the emission increases from the Plan Approval A work combined with the emissions from the Plan Approval C work would not have on their own triggered NSR, so no additional ERCs were needed above what had been required by Plan Approval B. (T. 746-47; A.Ex. 20.)

129. On November 19, 2014, the Department issued Plan Approval 23-0119C (Plan Approval C) to Sunoco. (Stip. 8; A.Ex. 32.)

Plan Approval D, 23-0119D

130. In December of 2013, Sunoco commenced an open season for a proposed “Mariner East 2” pipeline, which it would install parallel to the Mariner East 1 pipeline. (T. 595-96, 613-14; A.Ex. 3.)

131. During this open season, customers could subscribe to take capacity on the Mariner East 2 pipeline to ship ethane, propane, and butane from the Marcellus Shale region to Marcus Hook. (T. 595-96; A.Ex. 3.)

132. If the open season proved to be successful, Sunoco planned to build tanks at the facility to store the ethane, propane, and butane after transporting it there. (T. 595-96.)

133. In May of 2014, Sunoco completed the open season. (T. 613.)

134. The customers who subscribed to take capacity on the new pipeline contracted with Sunoco to secure their respective capacities. (T. 589-91, 595-96.)

135. Customers also contracted with Sunoco to acquire the right to store the ethane, propane, and butane at the facility. (T. 590-91, 595-96; A.Ex. 3.)

136. In a December 2013 press release announcing the open season for Mariner East 2, Sunoco stated that “we will continue to add storage and expand our Marcus Hook complex to be a world class NGL facility on the East Coast. In addition, the 800-acre Marcus Hook site is well positioned for further NGL processing.” (T. 281; A.Ex. 3.)

137. On September 26, 2014, even before Plan Approvals B and C were issued, Sunoco submitted a plan approval application to the Department to expand storage of cryogenic ethane, butane, and propane to be loaded onto cryogenic marine vessels. (A.Ex. 10, 21.)

138. Sunoco called the work the “SXL New Tanks Project” (“Project D”). (A.Ex. 10.)

139. Project D is intended to store ethane, propane, and butane arriving mostly through the Mariner East 2 pipeline. (T. 194.)

140. Project D proposed to install one 300,000 bbl cryogenic ethane storage tank, one 600,000 bbl cryogenic butane storage tank, one 900,000 bbl cryogenic propane storage tank, one 600,000 bbl cryogenic propane storage tank, one new cold flare for emergency depressurization

events, one new pipeline dehydration system, one new cooling tower, install the necessary piping for the cryogenic product storage, and allow the use of the previously proposed deethanizer tower for separation of comingled materials. (A.Ex. 10.)

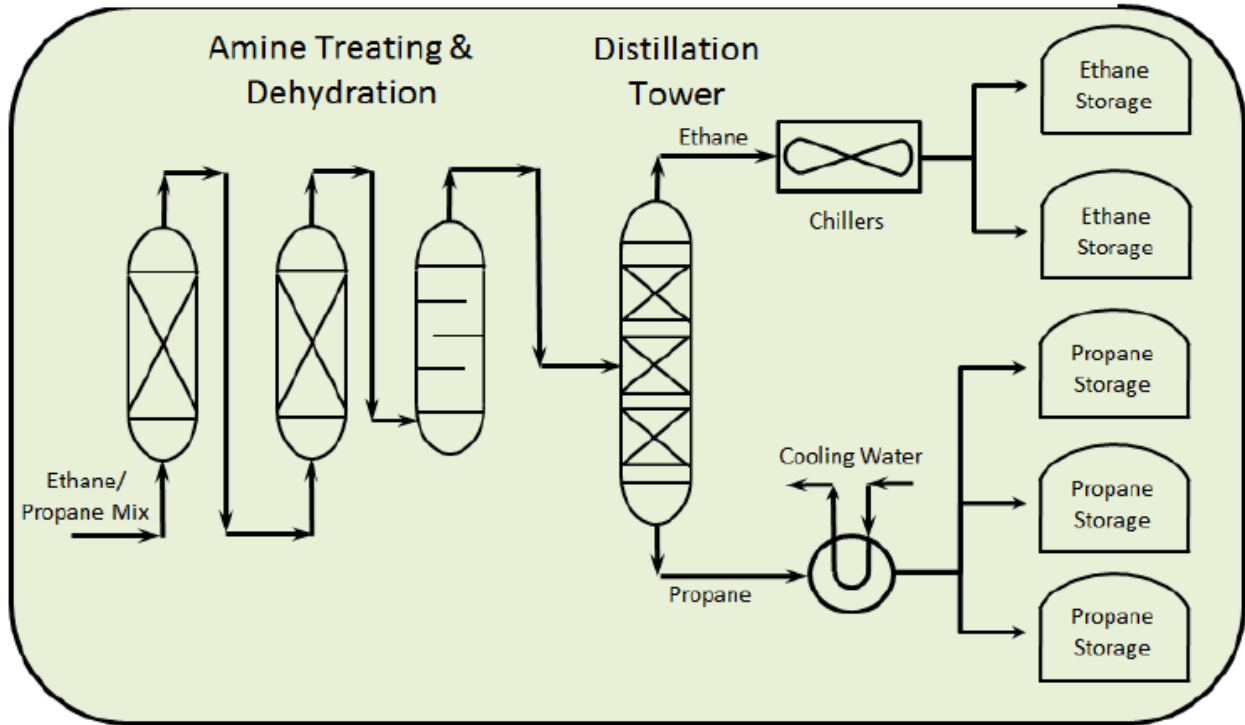
141. The Project D cooling tower is known as the Mariner East 2 cooling tower. (T. 133.)

142. The project would involve increased throughput of the previously permitted deethanizer distillation tower (from Plan Approval A) and additional steam demand from the auxiliary boilers (permitted in Plan Approval B), and use of the existing permitted flare located in the state of Delaware. (T. 393; A.Ex. 21.)

143. Products arriving by pipeline would either be transported as butane, propane, or a mix of ethane/propane. Each feedstock would be transported separately in the pipeline but there would be some transmix created during transportation. After processing, this transmix would meet the product specification of propane, and would be refrigerated and sent to product storage. After exiting the pipeline, the ethane, propane, and butane would be separated and refrigerated prior to being sent to storage. (A.Ex. 21.)

144. The ethane/propane mix would pass through an amine treatment and dehydration system. Amine treating removes the hydrogen sulfide (H₂S) and carbon dioxide (CO₂) gases as these can corrode the downstream piping components (previously permitted) and the deethanizer separation column (previously permitted). The raw materials, amine treatment and dehydrator, and distillation tower, and all of the tanks were permitted under previous plan approvals. (A.Ex. 21.)

145. A diagram of the ethane/propane processing looks like this:

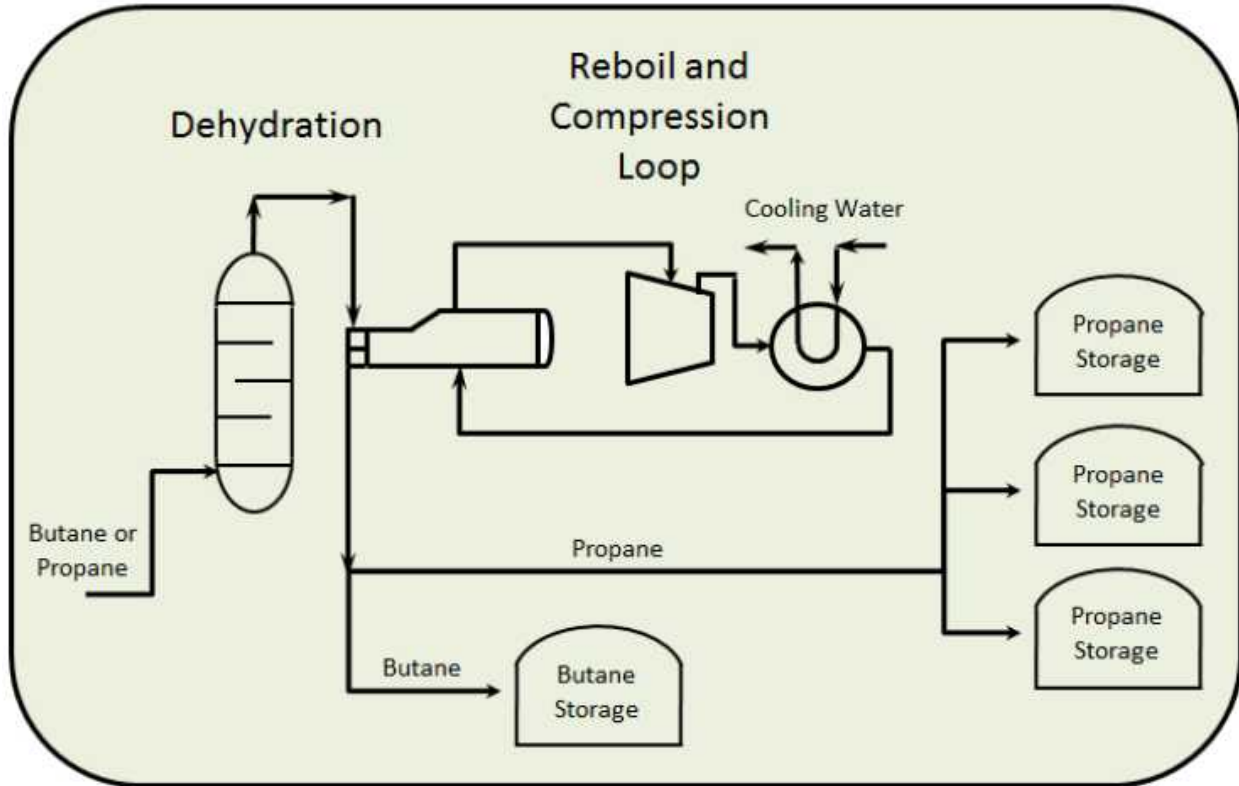


(A.Ex. 10, 21.)

146. Amine treatment and dehydration were part of the work completed under Project A. (A.Ex. 7, 18, 30.)

147. The only appreciable difference between the ethane/propane process diagram for Project D and the process diagram for Projects A and C (see Finding of Fact No. (“FOF”) 119) is the addition of more ethane and propane storage. (A.Ex. 7, 9, 10.)

148. Propane and butane processing would be treated as outlined in the following diagram:



(A.Ex. 10, 21.)

149. The reboil and compression loop (seen in the diagram above between the dehydration and storage components) is a refrigeration loop for the incoming propane or butane. The reboilers (horizontal cylindrical figure), compressors (trapezoid figure), and chiller (circle figure) function to remove the heat from these materials, thus refrigerating them. (A.Ex. 21.)

150. The new storage tanks would be double-walled construction and would employ a boil-off gas management system that would allow the cryogenic liquids to auto-refrigerate and retain the material as a liquid in their respective tanks. (A.Ex. 21.)

151. The loading of the liquid ethane, propane, and butane onto marine vessels would be accomplished using the previously permitted loading docks. Each of the docks located in Pennsylvania was permitted under Plan Approval 1. Each dock contains two identical loading arms and one vapor return line. The loading operation is a closed-loop system, where the boil-

off gases are collected, chilled, and returned to the respective product storage tanks. At the completion of each loading event, each loading arm is purged with nitrogen to complete the transfer of the liquid products onto the marine vessel. (A.Ex. 21.)

152. The air-assisted cold flare (designed for cold temperatures) previously permitted under Plan Approval A would be redesigned to include controlling any failures from the new tanks. This new design would include high and low-pressure flare tips. (A.Ex. 21.)

153. A new air-assisted low pressure cold flare would be installed to be used for flaring streams that are less than -20 degrees Fahrenheit. Flaring for emergency depressurization caused by power failures or equipment exposed to pool fires would be handled by either of the two cold flares or the existing flare located in the state of Delaware. (A.Ex. 21.)

154. It was determined that a new 50,000 gpm cooling tower would be required for the additional boil-off gas management system, and the cooling water loop would contain a mixture of potable water and boiler condensate. This cooling tower would be equipped with high efficiency drift eliminators to reduce the amount of particulate matter emissions to the atmosphere. (A.Ex. 21.)

155. On February 26, 2015, the Department issued Plan Approval 23-0119D (“Plan Approval D”) to Sunoco. (Stip. 9; A.Ex. 84; C.Ex. 9.)

156. Plan Approval D authorized the installation of “four (4) new cryogenic storage tanks for the storage of liquid ethane, butane, and propane. Additional installations include: the necessary piping components, a cold flare for depressurization events, a 50,000 gpm cooling tower [Source 112], and a new pipeline dehydration system for the processing of liquid propane and butane. A previously permitted cold flare (Source C01) will be modified to handle the

additional tankage in the event of an emergency situation with these additional storage tanks.”
(C.Ex. 9.)

157. Although Plan Approval D would result in steam demand, the Department determined that the facility was capable of producing enough steam for its own use from the existing auxiliary boilers as permitted under Plan Approval B, Title V Permit No. 23-0001, and Title V Operating Permit No. 23-00119. (A.Ex. 21.)

158. The Department decided that the additional steam demand placed on the existing auxiliary boilers would not result in a modification because the boilers were previously permitted under Plan Approval B and the additional usage would not result in exceeding any of the permitted emission limits established at that time. (T. 394; A.Ex. 21.)

159. The Department analyzed whether the work covered by Plan Approval D was “linked” with any previous project. While the applications for Plan Approvals 1 through D were admittedly submitted in a short time period, the various construction work was not technically linked together nor were the projects part of a common plan in the Department’s view. (T. 391-96.)

160. The Department considered the use of existing equipment of previous projects in its analysis for Project D. The Department determined the Plan Approval D work was not linked with any other work and Sunoco did not attempt to circumvent regulatory requirements by submitting multiple separate applications for the various projects. (T. 391-96.)

161. Although many sources in the prior plan approvals were utilized in Project D, the Department did not view Project D as being linked with any earlier projects because Sunoco had stated that Project D was precipitated by product requests from new customers. (T. 394-96.)

162. The Department did not independently verify whether Project D would in fact accommodate new customers. (T. 396.)

163. The Department determined that the work under Plan Approval D did not trigger NSR. (A.Ex. 21.)

164. It also concluded that the Plan Approval D work did not trigger PSD. (A.Ex. 21.)

165. Plan Approvals 1 through D were not appealed to the Environmental Hearing Board.

Plan Approval E, 23-0119E

166. On September 16, 2015, Sunoco submitted a plan approval application to the Department to install two depropanizer fractionation towers, a debutanizer fractionation tower, a new flare header for the fractionation system, and additional piping and fugitive components. (T. 750; A.Ex. 11, 23, 24.)

167. Sunoco called the proposed work “ETP Project Revolution and SXL Depropanizer Project” (“Project E”). (A.Ex. 11.)

168. Project E was to install and operate the following equipment: three independent fractionation systems (two depropanizers and one debutanizer); additional piping for the flare header and fugitive components; increased steam demand from the previously permitted auxiliary boilers; and increased cooling water demand from the 15-2B cooling tower permitted under TVOP 23-00119. (A.Ex. 11, 24.)

169. The three fractionation towers are already present at the facility but are being repurposed from when Marcus Hook was a refinery. (A.Ex. 24.)

170. Project E involves the increased use of the existing ethylene complex flare, the existing 15-2B cooling tower, and the existing auxiliary boilers at the facility. (A.Ex. 11, 24, 33.)

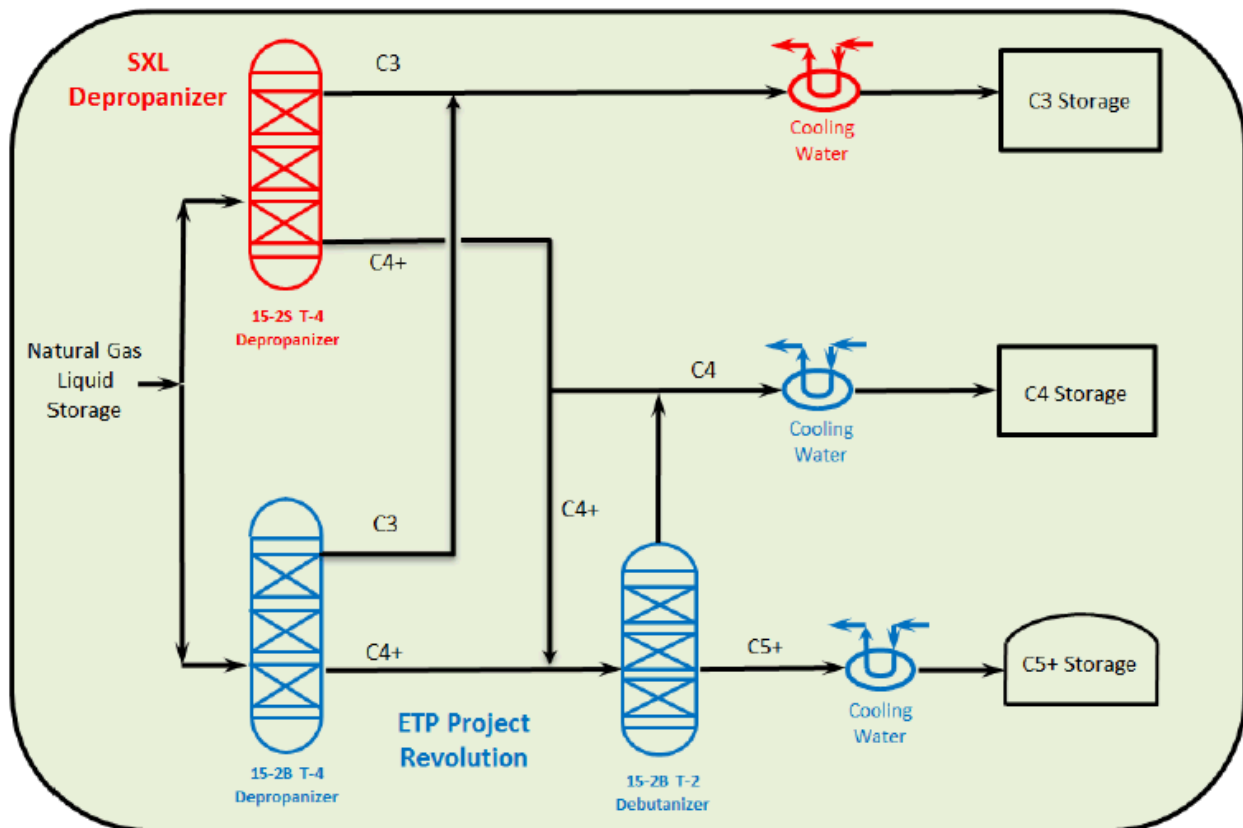
171. Project E includes the installation of new piping equipment, including valves, flanges, and relief valves. (A.Ex. 24.)

172. Sunoco will install new pipes leading from other emission units to the header systems for the flare, cooling tower, and boilers, which will accommodate their increased use. (T. 600-02, 623-24, 628-31; A.Ex. 11, 24.)

173. The work to be covered under Project E will use steam from the existing auxiliary boilers and use cooling water from the existing 15-2B cooling tower (Source 139). (T. 750; A.Ex. 11, 23, 24)

174. The application for Project E did not include new storage tanks. (T. 750.)

175. The process flow diagram for Project E is as follows:



(A.Ex. 11, 24.)

176. Project E will generally receive a mixture of propane and butane (transmix) or deethanized natural gas liquids at Marcus Hook via pipeline, which will then be processed by either fractionation system (depropanizer or debutanizer), refrigerated, and directed to product storage. Each fractionation system will produce export grade propane, mixed butanes, and natural gasoline. (A.Ex. 24.)

177. After the transmix and/or natural gas liquids arrive at the facility and are routed to either or both depropanizer units, the overhead product (propane, C3) will be cooled and cryogenically stored. The heavier bottoms will then be passed on to the debutanizer where the top-end product (butane, C4) will be separated, cooled, and cryogenically stored, while the bottoms (pentane and higher (natural gasoline), C5+) will be cooled and condensed for cryogenic storage. (A.Ex. 11, 24.)

178. Storage for ethane, propane, or butane will be either in existing caverns or the cryogenic storage tanks previously permitted under Plan Approvals 1 and D. (A.Ex. 24.)

179. Storage for the natural gasoline will be in existing floating roof tanks permitted in TVOP 23-00119 and Plan Approval B. (A.Ex. 24.)

180. The 15-2B cooling tower is equipped with high efficiency drift eliminators, has a rated water flow capacity of 25,000 gpm, and will use potable water and boiler condensate. (A.Ex. 24.)

181. The cooling tower unit was in a Department-approved deactivation and maintenance status from late 2012 to early 2014. Since then, it had been operating in a reduced capacity and the increase in cooling demand from Project E (19,500 gpm) was projected to max out its capacity. (A.Ex. 24.)

182. As part of Project E, Sunoco will make additions of piping and “tie-ins” to the 15-2B cooling tower’s header system (or “circulation loop”) connected to the tower, but not to the tower itself, in order to accommodate the increased demand for cooling water that other aspects of the project will place on the tower. (T. 59, 150-51, 155-56, 623-24.)

183. The 15-2B cooling tower services both the Plan Approval B and E projects. (T. 46; A.Ex. 8, 11.)

184. In the applications for Plan Approvals B and E, Sunoco’s consultant used design margins to predict cooling water demand figures. (T. 51-56.)

185. However, in light of the final plans for Projects B and E, a set of data and calculations that were more accurate became available and, therefore, the design margins were removed from the equation, which lowered the figures for the total cooling water demand. (T. 81-86.)

186. The total cooling water demand for the Projects B and E is 24,993 gpm of the 15-2B cooling tower’s 25,000 gpm limit. (T. 52, 83; A.Ex. 24, 52.)

187. The flare used by Project E will be the existing ethylene complex flare that is physically located in the state of Delaware. (T. 600-02; A.Ex. 11.)

188. A flare is a pollution control device with a lit pilot that destroys the emissions that are being vented, if any, from the various operations throughout the facility. (T.630; A.Ex. 24.)

189. The flare header is a collection pipe header that runs throughout the facility to gather emissions from various units to direct them to the flare for destruction. (T. 629.)

190. No changes will be made to the flare itself; however, there will need to be new piping connections and tie-ins installed to the flare header system from the fractionation towers. (T. 628-31; A.Ex. 24.)

191. As part of Project E, Sunoco also plans to install a new sub-header for the flare. (T. 601-03, 628-31; A.Ex. 11.)

192. New flare connections in the fractionation system will be routed to the new sub-header and then to the existing flare header and then the flare. (T. 602, 628-31; A.Ex. 11.)

193. The new sub-header and new connections will accommodate the increased use of the flare that will result from other aspects of the project. (T. 628-31; A.Ex. 11, 24.)

194. Sweep gas has always been sent to the flare on a regular basis to ensure safe and reliable operation, but no process hydrocarbon streams are routinely vented to the flare. (A.Ex. 24.)

195. Sweep gas is put into the flare header to keep positive flow and positive pressure on the flare head. (T. 636.)

196. Sunoco will be installing multiple meters to determine the volume of product sold to its various customers. These meter provers will need to be calibrated against a known quantity of material on a semi-annual basis, which will require the piping system to be evacuated and the gases to be routed to the Delaware flare. These “blowdown” events will result in incremental flare emission increases of CO, NO_x, VOC, SO₂, and CO_{2e}. (A.Ex. 24.)

197. Additional steam demand will be required by each fractionation tower, as well as in a preheater for the feedstock. This will be provided by the currently permitted auxiliary boilers. (A.Ex. 24.)

198. The additional steam demand will primarily come from the 15-2B T-4 depropanizer and 15-2B T-2 debutanizer reboilers. (A.Ex. 11.)

199. As part of Project E, Sunoco will make additions of piping to the steam header (“boiler header”) system, which transports steam from the auxiliary boilers, but not to the auxiliary boilers themselves. (T. 619-23, 633-34; A.Ex. 24.)

200. On April 1, 2016, the Department issued Plan Approval 23-0119E (“Plan Approval E”) to Sunoco. (Stip. 10; A.Ex. 34.)

201. Plan Approval E authorized Sunoco “to construct and operate three distillation units (two depropanizers and one debutanizer) to separate and purify the natural gas liquids and pipeline transmix into propane, butane, and C5+ products. These new processes will utilize steam and cooling water from existing permitted equipment.” (A.Ex. 34.)

202. The Department initially determined in its technical review memo drafted prior to the issuance of Plan Approval E that the increase in the steam demand for the fractionation towers required the addition of new steam lines. (A.Ex. 23.)

203. The Department also determined prior to the issuance of Plan Approval E that the boiler-related changes constituted a modification to the boilers even though the increase in emissions from the boilers would not cause the emission limits for the boilers to be exceeded. (A.Ex. 23.)

204. The Department later changed its mind and determined in a revised memo seven months after the issuance of Plan Approval E and after this appeal was filed that new steam and condensing lines would not be added to the boilers, and therefore, they would not be modified. (T. 760-61; A.Ex. 24.)

205. The Department and Sunoco considered the incremental emissions from the boilers related to Project E to be zero because of the adjustment of the permit limit for the boilers as part of Plan Approval B. (T. 381-82, 745-46, 752; A.Ex. 11.)

206. The Department considered the new emissions from the boilers to have been previously accounted for as part of Project B. (T. 381-82, 745-76, 752.)

207. Project E will result in increased steam demand of 238,700 pounds per hour. (A.Ex. 11, 24.)

208. The Department also initially determined that new lines would need to be added to the 15-2B cooling tower. (A.Ex. 23.)

209. The Department considered this a modification of the cooling tower unit before issuing the plan approval. (A.Ex. 23.)

210. As with the boilers, the Department later changed its mind after Plan Approval E was issued and determined that new lines would not be added to the cooling tower, and thus it would not be modified. (A.Ex. 24.)

211. The Department ultimately determined that the cooling tower was not modified by Plan Approval E because, in addition to lines not being added to the source itself, the capacity of the unit did not change, and there were no new emissions added above permitted levels. (T. 761; A.Ex. 24.)

212. Similarly, the Department ultimately determined that the flare was not modified because no changes would be made to the flare itself as part of Plan Approval E. (T. 761; A.Ex. 24.)

213. The Department determined that the flare header is a separate new source. (T. 755; A.Ex. 24.)

214. Thus, after first determining the flare, cooling tower, and boilers were modified as part of the work covered by Plan Approval E, after this appeal was filed the Department changed its conclusion and said the equipment would not be modified. (A.Ex. 23, 24.)

215. The Department ultimately determined the cooling tower, flare, and auxiliary boilers were existing unmodified sources. (T. 755; A.Ex. 24.)

216. Therefore, despite what was stated in its initial technical review memorandum, the Department eventually determined there were no modified sources associated with the Plan Approval E work. (T. 755; A.Ex. 24.)

217. In his 23 years working with the Department, the Department's permit reviewer had not previously composed a revised technical review memorandum for a project after a plan approval had already been issued for the project. (T. 402.)

218. The Department's permit reviewer admitted that the revised technical review memorandum for Plan Approval E was written in response to the Council's appeal in this matter. (T. 402.)

219. The Department determined the three fractionation towers, meter prover, flare header, and miscellaneous valve and piping components were new sources. (T. 755; A.Ex. 24.)

220. The three existing fractionation towers were each being modified from their prior use in the former petrochemical refinery to now process liquid/vapor, and therefore, the Department considered them to be new sources. (A.Ex. 24.)

221. The project would also involve the following, which the Department did not consider to be modifications: use of previously permitted underground caverns (Source 800 in TVOP 23-00119); use of already permitted cryogenic storage tanks and internal floating roof tanks; and use of the existing permitted flare located in Delaware. (A.Ex. 24.)

222. For purposes of performing a PSD applicability determination, the Department defined the Plan Approval E work as the installation of several new sources—the three fractionation systems (two depropanizers and one debutanizer), additional piping to the flare

header and fugitive components, and the meter prover—along with incremental emissions increases from the cooling tower, boilers, and the flare. (T. 765-66; A.Ex. 24.)

223. For purposes of NSR, the Department defined the Plan Approval E work as the modification of the three existing fractionation systems, installation of additional piping to the flare header and fugitive components, and the installation of a meter prover system. (T. 762-63; A.Ex. 24.)

224. As nonmodified existing sources, Sunoco and the Department included “incremental” increases in emissions from the flare and cooling tower in their calculations of total emissions for Project E in the applicability analysis. (T. 664-68, 698-99, 755-57, 765-66, 875-76; A.Ex. 11, 24, 33.)

225. Incremental emissions from the flare and cooling tower were included in the Department’s applicability calculations even though the existing permit limits accommodated those increases. (A.Ex. 24.)

226. The Department determined that the Plan Approval E work should not be “linked” with the Plan Approval 1 work because “the projects and sources were different.” (T. 753.)

227. The Department determined that the Plan Approval E work should not be “linked” with the Plan Approval A work because the processes were different in each project—two depropanizers and a debutanizer versus a deethanizer. (T. 753.)

228. The Department determined that the Plan Approval E work should not be “linked” with the Plan Approval B work because the Plan Approval B work dealt with a different product, natural gasoline, delivered by trucks and rail, while the Plan Approval E work dealt with propane and butane or deethanized NGLs delivered by pipeline. (T. 753-54.)

229. The Department determined that the Plan Approval E work should not be “linked” with the Plan Approval C work because “they were two totally different projects with totally different sources.” (T. 754.)

230. The Department determined that the Plan Approval E work should not be “linked” with the Plan Approval D work because even though the Plan Approval E work used some of the storage capability associated with the Plan Approval D work, that was not a sufficient enough “link” because other products could be stored in those tanks. (T. 754-55.)

231. Similar to Project D, the Department’s permit reviewer did not aggregate Project E with the earlier projects in large part because he was told that the sources being installed were for “new customer demand.” (T. 451-52.)

232. There is no record evidence to support the permit reviewer’s belief, and it in fact cannot be true because Project E was to produce some of the same products as earlier projects. (A.Ex. 10, 11, 18.)

233. For example, the products produced by Project E were propane, butane, and natural gasoline. (A.Ex. 11.) Propane was produced as early as Project A, (C.Ex. 4), and Project D involved propane and butane, (A.Ex. 10).

234. The permit reviewer did not believe the projects were technically linked in part because any piece of equipment that can be used for multiple projects does not support linking the projects. (T. 392, 452-54.)

235. The permit reviewer may have been referring to “new customers” for the same products, such that in his view, increased customer demand is a basis for segmenting projects for separate permits. (T. 396, 452, 454.)

236. The Department concluded that the Plan Approval E work alone did not trigger PSD significance thresholds. (T. 510; A.Ex. 24.)

237. The Department did not consider whether aggregated Projects 1 through E would trigger PSD significance thresholds. (T. 381-83, 521-22, 820-26; A.Ex. 6-11.)

RFD 5236

238. A request for determination (“RFD”) is a request by a company to determine whether an operating permit or plan approval is needed for a particular project. (T. 331.)

239. On August 6, 2015, Sunoco submitted an RFD to install two new spherical tanks to store propane and butane materials (C3+ natural gas liquids with ethane removed) entering the facility (“RFD 5236”). (T. 333; C.Ex. 15.)

240. On August 13, 2015 (before the issuance of Plan Approval E), the Department issued RFD 5236, indicating that a plan approval was not required for the proposed work. (C.Ex. 16.) There was no appeal from RFD 5236.

241. In approving the RFD, the Department stated, “[T]he Department exempts the installation of these two (2) 50,000 barrel spheres for the storage of propane and butane from the requirements to obtain a plan approval.” (C.Ex. 16.)

Aggregation

242. Since the issuance of Plan Approval E, Sunoco has obtained RFDs and plan approvals or submitted pending applications for plan approvals or RFDs for other construction work at the facility involving receiving, fractionating, storing, and shipping natural gas liquids. (A.Ex. 12, 35 [Plan Approval F], 13 [Plan Approval G], 14 [Plan Approval H], 15 [Plan Approval I]; C.Ex. 17, 18 [RFD 5597].)

243. In December 2015, before Plan Approval E was issued, Sunoco submitted an application for Plan Approval No. 23-0119F (“Plan Approval F”), which increased the VOCs emissions limits for the tanks storing natural gasoline (which had been reactivated under Plan Approval B) and updated the emissions limits for two other tanks so that they could be used to store high vapor pressure materials, including gasoline. (A.Ex. 12.)

244. Sunoco prepared a helpful summary of the components of the Marcus Hook project and numbered them in an exhibit as follows:

Plan Approval 0119: Ethane & Propane Storage Facility

- (1) ME1 [Mariner East 1] ethane storage tank and boil-off gas system
- (2) ME1 propane storage tank and boil-off gas system

Plan Approval 0119A: Deethanizer Unit

- (3) ME-1 Amine treating system
- (4) ME-1 Dehydration system
- (5) Deethanizer unit

Plan Approval 0119B: Natural Gas Fractionator

- (6) Four-lane offloading/loading facility
- (7) Existing 15-2B T-05 fractionation tower & associated equipment
- (8) Existing spheres for pentane overhead product

Plan Approval 0119C: ME1 Cooling Tower

- (9) Cooling Tower

Plan Approval 0119D: ME2 [Mariner East 2] Ethane, Butane, Propane Storage Facility

- (10) New 300,000 barrel ethane storage tank
- (11) New 600,000 barrel butane storage tank
- (12) New 900,000 barrel propane storage tank
- (13) New 600,000 barrel propane storage tank
- (14) New cold flare for emergency depressurization events
- (15) ME2 dehydration system
- (16) ME2 cooling tower

Plan Approval 0119E: Revolution Fractionation Systems

- (17) 15-2B depropanizer and debutanizer (fractionation towers)
- (18) 15-2S depropanizer (Fractionation tower)

- (19) Existing auxiliary boilers (for steam)
- (20) 15-2B cooling tower

(T. 118-19; A.Ex. 45.)

245. These components are numerically keyed to the following aerial photograph of the site:



(T. 118-19; A.Ex. 45.)

246. The two spherical tanks installed pursuant to RFD 5236 are reflected on the aerial photograph as two dark spheres located to the right and slightly down of the spheres labeled as No. 8. (T. 142-43; A.Ex. 45.)

247. The timeline for the phased construction of the projects is shown on Sunoco's Plan Approval Summary as follows:

PLAN APPROVAL SUMMARY

PA No.	Description	Dates						Comments
		BD Period (BD Engr)	BD App'l	Engineering	Permit Application	Permit Approval	Construction	
0119	"Tank Project" Orig plan – propane/ethane batched, not blended ME1 Tanks – 500K BBL propane, 300K BBL ethane Cold Flare Product loading to marine vessels Allow use of cavern for propane	2010 – Sept 2012 Sept '12: -final tank size -end open season Oct: Final capacity	8/12 12/12 1/13 3/13 7/13	Aug 2011 – Oct 2014 (95%)	Nov 2012 (ERM- Aug '12)	Feb 2013	March 2013 – Jan 2016	
0119A	Deethanizer Amine unit → Dehydration → Deethanizer → Chill → Tanks			Sept 2011 – Oct 2014 (95%)	Mar 2013 (ERM- Jan '13)	Sept 2013	Feb 2014 – Jan 2016	
0119B	Natural Gasoline (CS Splitter). Receive NG by rail Fractionate and store feedstock and product Out by truck via new truck rack	Feb '13 – May '13	Interim – 6/13 Full – 11/13	May '13 - Dec '13	Sept 2013 (ERM- June '13)	~ Jan '14	Aug 13 – Mar 14	
0119C	Cooling Tower New CT for deethanizer Design change to use water-cooler exchangers vs air-cooled	NA	NA	Part of ME1 Engr	April 2014 (ERM- Jan '14)	Sept '14	Part of ME1 Constr	
0119D	"New Tanks" – ME2 Tanks Ethane, propane, butane tanks Expansion on ME1 Flare Product loading to marine vessels Dehydrators Cooling tower Convert deethanizer to demethanizer	Mar 2013- Dec 2014 (Open Season 12/13 – 5/'14)	Numerous interim approvals through BD period: Apr '13 – Dec '14	Sept '13 – Nov '16	Sept 2014 (ERM- Jan '14)	Feb '15	Feb '15 – Dec '17	
0119E	Depropanizer (Revolution Frac) Fractionation – restart of 3 towers (2 – deprop; 1 – debut) Product feed and storage (Spheres – RFD5236- Aug 2015) Increase steam and cooling water and associated emissions	Dec '14 – ~ May '15	~June '15	Apr '15 –	Sept 2015 (ERM- July '15)	April '16	April '16 – July '17	Scope: • Target 30M BPD • Inlet storage spheres • 15-28 towers T4 (deprop) and T2 (debut) • Future: 15-2S T04 to get to 48 M BPD

(A.Ex. 45; S.Ex. 53.)

248. The units at the Marcus Hook facility that are involved in Projects 1, A, B, C, D, and E and RFD 5236 are all spatially close, as shown on Sunoco Exhibit 52. (*See also* T. 392.)

249. Projects 1, A, B, C, D, and E and RFD 5236 have all been devised and permitted in quick succession between November 2012 (Project 1) and April 1, 2016 (Project E), with applications overlapping in some cases and only days or weeks between Sunoco receiving one plan approval and applying for the next one in others. (T. 392; S.Ex. 53.)

250. Sunoco has planned and developed the work covered by Plan Approvals 1 through E and RFD 5236 in close succession in time. (A.Ex. 6-11, 29-34; C.Ex. 15, 16; S.Ex. 53.)

251. Projects 1, A, B, C, D, and E and RFD 5236 are all part of Sunoco's common plan to convert the refinery into a full service NGL processing, storage, and shipping facility. (T. 29-41, 179-80, 220, 278-79; A.Ex. 2, 3, 4.)

252. Projects 1, A, B, C, D, and E and RFD 5236 are all geared toward fractionating, storing, and shipping out NGLs. (T. 29, 35-36, 117, 144-46, 220; A.Ex. 6-11, 18-24, 29-34, 84.)

253. With Plan Approvals 1 through E, the Marcus Hook facility is capable of storing, fractionating, and distributing all of the products from an NGL stream of C3+. (T. 144-46.)

254. Projects 1, A, B, C, D, and E and RFD 5236 are all operationally and technically interdependent. (T. 35-36, 93-95, 99, 143-44, 211-20, 229, 358, 372, 393, 594-95, 864; A.Ex. 6-11, 18-24, 29-34; C.Ex. 2, 15, 16.)

255. Projects 1, A, and C were all part of what Sunoco called Project Mariner, which prepared the facility for receiving NGLs from Mariner East 1. (T. 34; A.Ex. 6, 7, 9.)

256. Sunoco and the Department linked Project A and Project C “due to the economic and technical dependency between these two projects.” (T. 371-73; A.Ex. 9, 32.)

257. The cooling tower installed as part of Project C was designed to provide cooling water to the deethanizer installed as part of Project A. (T. 33-34, 372; A.Ex. 9.)

258. Project D was a revision to the scope of Project Mariner, to increase its capacity due to the additional volumes of NGLs coming from the Mariner East 2 pipeline. (T. 35-36, 138-39.)

259. Project D was an expansion on Projects 1, A, and C. (T. 35-36, 137-39, 210-11.)

260. Sunoco aggregated Projects 1, A, C, and D in its application for Project D, incorporating the emissions from the previous projects into Project D. (T. 37; A.Ex. 10.)

261. Projects 1, A, C, and D share much common equipment. (T. 134-37, 147-48, 201-04, 357-58, 393; A.Ex. 6, 7, 9, 10, 18, 20, 21; C.Ex. 2.)

262. Sunoco’s permitting consultant believed that Projects 1, A, C, and D were all similar and involved similar processes. (T. 36.)

263. In its technical review memo for Project D, which installed four new storage tanks (one ethane, one butane, and two propane), the Department stated that one cryogenic ethane tank and one cryogenic propane tank shown on the process diagram had been previously permitted under Plan Approval 1. (A.Ex. 21.)

264. The Department linked additional equipment in Project 1 to Project D, stating that “[t]he previously permitted air-assisted cold flare (see plan approval 23-0119) will be redesigned to include controlling any failures from the new tanks in this project.” (A.Ex. 21.)

265. The Project D dehydration system is similar in general process to the Project A dehydration system. (T. 133.)

266. Project D uses the deethanizer installed as part of Project A, which continues to be used for separating out ethane, although Sunoco intends to repurpose it as a demethanizer. (T. 134-36, 201-04.)

267. Project D uses the same amine treatment system installed as part of Project A. (T. 137.)

268. Projects D and E handle and process NGLs from the Mariner East 2 pipeline. (T. 35-36, 67-68, 132-33, 138-39, 190-91; A.Ex. 3, 10, 11.)

269. Project E separates out propane (C3) and butane (C4) from C3+ to produce a C5+ natural gasoline stream that will utilize the same tanks for storage as Project B. (T. 41, 93-96, 143.)

270. Project B then has the capability of taking the natural gasoline in those tanks and removing the pentane from it. (T. 143-44.)

271. At least in part, the ethane, propane, and butane storage for Plan Approval E will use the cryogenic tanks associated with the work done under Plan Approvals 1 and D. (T. 96-99, 140-42; A.Ex. 24.)

272. One of the fractionation towers that Sunoco built as part of Project A and renamed as part of Project D was up for consideration for use as part of Project E, but there was concern with the threat that if Sunoco reused that tower the Department would aggregate Project Mariner (Projects 1, A, and C) with Project E. (T. 41-45.)

273. Sunoco then decided to use a different fractionation tower for the Plan Approval E work. (A. Ex. 11.)

274. As part of Project E, Sunoco offers its customers the service of separating a propane/butane mixture that is created by Project D. (T. 229.)

275. RFD 5236 constructed spherical storage tanks that function to store the C3+ feedstock for Project E. (T. 38, 142-43.)

276. In determining whether to aggregate emissions from various smaller projects, the Department considers future projects that the permittee admits are planned. (T. 337, 859-60, 863-64.)

277. As part of its circumvention analysis, the Department considers past and future planned projects and their dependency on one another, installation over short periods of time, how the project affects the business economically or in terms of productivity, the use of common equipment, and whether new sources were installed to meet new customer demand. (T. 335, 451-54, 542-43, 863-64.)

278. The Department appeared to consider as part of its circumvention analysis whether feedstock for the various projects came from trucks, rails, or pipeline. (T. 358-60.)

279. The potential to emit permit limit for the boilers that was decreased in connection with Plan Approval B was selected to accommodate future projects. (A.Ex. 19, 20.)

280. When the Department determines that multiple plan approvals concern a single project, it goes back and looks at the projects as a whole for purposes of the New Source Review analysis. (T. 386-87.)

281. For example, as the Department determined that Plan Approval C was linked to an earlier project, it added up the emissions from the linked projects for the purpose of going through the NSR evaluation process. (T. 376; A.Ex. 20.)

282. The Department's regulatory interpretation is that a physical or operational change in a source is not a "modification" if any increased emissions resulting from the change do not cause the source to exceed its existing permit limits. (T. 760-62, 787-88, 844-49, 856-59.)

283. Project D uses or reuses the fractionation tower, the amine treatment system, and the dehydration system that were built as part of Project A. (T. 393.)

284. Sunoco uses the same boilers for Projects A, B, D, and, E. (T. 147, 344, 347, 864; A.Ex. 7, 8, 10, 11, 18, 19, 21, 24.)

285. Sunoco uses the same 15-2B cooling tower (Source No. 139) for Projects B and E. (T. 147-48; A.Ex. 8, 11, 19, 24.)

286. Sunoco uses the same ethane storage tank for Projects 1, A, D, and E. (A.Ex. 6, 7, 10, 11, 18, 21, 24; C.Ex. 2.)

287. Sunoco uses the same propane storage tank for Projects 1, A, D, and E. (A.Ex. 6, 7, 10, 11, 18, 21, 24; C.Ex. 2.)

288. Sunoco uses loading docks 2A, 3A, and 3C and associated equipment (e.g. loading arms, vapor return line) for Projects 1, B, and D. (A.Ex. 6, 8, 10, 19, 21; C.Ex. 2.)

289. Sunoco uses the same cold flares for Projects 1, A, and D. (A.Ex. 6, 7, 10, 18, 21; C.Ex. 2.)

290. Sunoco uses the same ethylene complex flare for Projects B and E. (T. 147; A.Ex. 8, 11, 19, 24.)

291. Sunoco uses the same amine and CO₂ (removes hydrogen sulfide) treatment system for Projects A, C, and D. (T. 393; A.Ex. 7, 9, 10, 18, 20, 21.)

292. Sunoco uses the same dehydration system (for removing water) for Projects A, C, and D. (T. 393; A.Ex. 7, 9, 10, 18, 20, 21.)

293. Sunoco uses the same deethanizer for Projects A, C, and D. (T. 393; A.Ex. 7, 9, 10, 18, 20, 21.)

294. The Plan Approval E work would not be independently viable without the previously permitted boilers, flare, cooling tower, and tanks. (T. 59, 150-51, 155-56, 600-03, 619-24, 628-31, 633-34; A.Ex. 11, 23, 24.)

295. The work done under Plan Approvals 1, A, B, C, D, and E, and RFD 5236 are all components of an overarching, cohesive NGL project at the Marcus Hook facility. (T. 29-45, 67-68, 93-99, 117-19, 132-39, 179-80, 190-91, 201-04, 210-20, 229, 278-79, 344, 347, 357-58, 371-73, 392-93, 594-95, 864; A.Ex. 2, 3, 4, 6-11, 18-24, 29-34, 45, 84, C.Ex. 2, 9, 15, 16; S.Ex. 53.)

DISCUSSION

Sunoco Partners Marketing & Terminals, L.P. (“Sunoco”) operates the Marcus Hook Industrial Complex in Delaware County. There are several air contamination sources at the facility, which are permitted under several plan approvals and Title V Operating Permit No. 23-00119. The complex, which also includes air contaminant sources located at Sunoco’s facility in the state of Delaware (permitted under Title V Operating Permit No. AQM-003/00021), is

considered by the Department of Environmental Protection (the “Department”) to be a single facility for purposes of the regulations regarding Nonattainment New Source Review (NSR), Prevention of Significant Deterioration (PSD), and Title V.

The Marcus Hook Industrial Complex was formerly a crude oil refinery. As refinery operations gradually wound down, Sunoco decided to convert the complex into a facility for the storage, processing, and shipping of natural gas liquids (NGLs). The facility continues to operate pursuant to the same Title V permit. Rather than convert the facility into an NGL storage and processing facility pursuant to one comprehensive plan approval, Sunoco has been repurposing the facility pursuant to several plan approvals and requests for determinations (RFDs). An RFD is a mechanism for determining whether a plan approval for certain work is required.

The Clean Air Council (the “Council”) has filed this appeal from the Department’s April 1, 2016 issuance of Plan Approval No. 23-0119E (“Plan Approval E”) to Sunoco. Plan Approval E authorizes Sunoco to install new air emissions units at its Marcus Hook facility. The Council’s objections boil down to two major claims. First, the Council argues that the Department erred by treating the construction being performed pursuant to Plan Approval E, which the parties also refer to as “Project E,” as a stand-alone project for purposes of determining whether the PSD and NSR programs apply. A proper applicability determination for Plan Approval E in the Council’s view would have recognized that Project E is merely one component of a much larger project involving the transformation of the Marcus Hook facility from a crude oil refinery into an NGL hub. Since it is in reality all one project, emissions from all of the nominally separate segments of the project must be combined for purposes of determining PSD/NSR applicability, and other permitting consequences may follow as well if all the work is treated as one project, the Council

argues. Secondly, the Council objects that the Department erred in determining which emission units involved in Project E were “modified,” and the Department undercounted emission increases associated with those modifications, thereby allowing Sunoco to avoid PSD and NSR requirements. Fundamentally, the Council believes that Sunoco is improperly being allowed through creative permitting to avoid the requirements that should have been imposed pursuant to the PSD and NSR programs.

The Environmental Hearing Board’s role in the administrative process is to determine whether the Department’s action was lawful, reasonable, and supported by our *de novo* review of the facts. *Logan v. DEP*, EHB Docket No. 2016-091-L, slip op. at 20 (Adjudication, Jan. 29, 2018); *Friends of Lackawanna v. DEP*, 2017 EHB 1123, 1156. In order to be lawful, the Department must have acted in accordance with all applicable statutes, regulations, and case law, and acted in accordance with its duties and responsibilities under Article I, Section 27 of the Pennsylvania Constitution.² *Ctr. for Coalfield Justice v. DEP*, 2017 EHB 799, 822; *Brockway Borough Mun. Auth. v. DEP*, 2015 EHB 221, *aff’d*, 131 A.3d 578 (Pa. Cmwlth. 2016). As a third-party appealing the issuance of the plan approval, the Council bears the burden of proof. 25 Pa. Code § 1021.122(c)(3); *Groce v. DEP*, 2006 EHB 856, 894.

In order to be successful, the Council must prove its case by a preponderance of the evidence. *United Refining Co. v. DEP*, 2016 EHB 442, 448, *aff’d*, 163 A.3d 1125 (Pa. Cmwlth. 2017); *Shuey v. DEP*, 2005 EHB 657, 691 (citing *Zlomsowitch v. DEP*, 2004 EHB 756, 780). The preponderance of evidence standard requires that the Council meet its burden of proof by showing that the evidence in favor of its proposition is greater than that opposed to it. *United Refining*, 2016 EHB 442, 449. The Council’s evidence must be greater than the evidence

² The Council has not argued in this appeal that the Department acted inconsistently with its duties under the Pennsylvania Constitution.

supporting the Department’s determination that the issuance of the plan approval was reasonable, appropriate, and in accordance with the applicable law. *Delaware Riverkeeper Network v. DEP*, EHB Docket No. 2014-142-B, slip op. at 27 (Adjudication, May 11, 2018). The evidence must be sufficient to satisfy an unprejudiced mind as to the existence of the factual scenario sought to be established by the Council. *Noll v. DEP*, 2005 EHB 505, 515.

Project Aggregation

This appeal involves the concept of project aggregation. Project aggregation is to be distinguished from a single-source determination, which analyzes whether multiple sources are located at one “facility” for permitting purposes. That determination turns on whether the pollutant-emitting activities belong to the same industrial grouping, are located on contiguous properties, and are under the control of the same person. *Nat’l Fuel Gas Midstream Corp. v. DEP*, 2015 EHB 909, 922-24, *rev’d on other grounds*, No. 116 C.D. 2016, 2017 Pa. Commw. Unpub. LEXIS 400 (Pa. Cmwlth. Jun. 2, 2017). *See also Alabama Power Co. v. Costle*, 636 F.2d 323 (D.C. Cir. 1979).

With project aggregation, it is already clear that there is only one facility. The question presented when project aggregation is involved is whether multiple, nominally separate but apparently related physical or operational changes at a facility should be deemed a single project for purposes of determining whether the facility has triggered NSR and/or PSD applicability. The issue generally comes up where, as here, an existing facility is being modified. The Department must perform an applicability determination when it receives an application for a plan approval at a major facility such as Sunoco’s. 25 Pa. Code § 127.203a; 40 C.F.R. § 52.21. The Department must calculate the total emissions “from the project” to determine whether the thresholds for when NSR and/or PSD requirements apply have been exceeded. *Id.* Thus, the

Department needs to define the boundaries of the “project.” In some cases, this may present no difficulty at all. In others, such as here, the Department needs to decide whether ostensibly separate construction activities are really all part of the same project. If they are, the emissions from all of those construction projects need to be totaled up or aggregated to see if the NSR/PSD requirements have been triggered.

There is no dispute in this case that the Department has the authority to, in its words, “link” ostensibly separate projects and treat them as one aggregated project for purposes of NSR/PSD applicability. The Department has “linked” various components of Sunoco’s work subject to separate plan approvals and aggregated the emissions from those components for applicability purposes, without objection from Sunoco. Indeed, Sunoco has conceded that some of its projects subject to separate plan approvals were correctly aggregated for the applicability determination. There is also no disagreement that the Department can in an appropriate case reach back and aggregate the emissions from previously approved projects with the emissions from a project currently under review because there is only one project.

The Department performed an applicability determination in this case, and it concluded that Project E is a stand-alone project. Using its words, it did not “link” Project E with any other past or future construction work at the Marcus Hook facility. There is really only one key question, then, that must be answered to resolve this part of this appeal: Did the Department err in concluding that Project E is a stand-alone project? To be more precise, was the Department’s determination that Project E is a stand-alone project reasonable and supported by the facts? The Council has the burden of proving by a preponderance of the evidence that the Department’s conclusion was unreasonable or unsupported by the facts. We conclude that the Council has satisfied that burden. The Department’s applicability determination was neither reasonable nor

supported by the evidence because Projects 1 through E and RFD 5236 are all part of the same “project” and the emissions from all of the components of that project should have been aggregated.

The Department and Sunoco argue that the anti-circumvention regulation found at 25 Pa. Code § 127.216 has not been violated here for various reasons, including that the regulation does not apply to the PSD (as opposed to the NSR) program, the regulation only applies if a facility fails to obtain *any* permits or approvals for construction work, and the regulation only applies if it can be shown that the facility’s only purpose in fragmenting work was to deliberately avoid permitting requirements.³ However, even if all of these things are true, as noted above, no party contests the fact that the Department must nevertheless define the “project,” and that exercise sometimes involves aggregating work covered by separate plan approvals. The Department must perform that function for both the PSD and NSR programs, it must do it even though the facility has not tried to avoid obtaining any permit or approval, and it must do it even if the facility cannot be shown to be deliberately scheming to avoid permitting requirements. It must perform that function even if the prior plan approvals are otherwise administratively final, as it has done in this case, not for purposes of reopening the earlier approvals, but for purposes of defining the boundaries of the project as properly delineated for the plan approval application currently under review.⁴ Looking back at earlier plan approvals, as well as known future projects, in order to define the proper scope of the project currently under review is precisely the point of project aggregation. Allowing a facility to subdivide a project in any way it sees fit, based on its

³ 25 Pa. Code § 127.216 reads: “[A]n owner or other person may not circumvent this subchapter by causing or allowing a pattern of ownership or development, including the phasing, staging, delaying or engaging in incremental construction, over a geographic area of a facility which, except for the pattern of ownership or development, would otherwise require a permit or submission of a plan approval application.”

⁴ The Board’s authority is similarly limited to awarding relief with respect to the plan approval that has been appealed, in this case Plan Approval E.

business plan or otherwise, would render the regulatory thresholds meaningless. Without constraints, any project could be divided up in such a way that each divided part falls below the applicability thresholds.

Although there has been talk for years about promulgating regulations to better define project aggregation, no such rules have been promulgated and survived.⁵ “Project” is defined in Pennsylvania’s regulations as “a physical change in or change in the method of operation of an existing facility, including a new emissions unit.” 25 Pa. Code § 121.1. The regulation is not particularly helpful because there is obviously no question that a project is being implemented. The question we are faced with involves defining the boundaries of the project.

There is considerable room for judgment and discretion in the grouping of possibly related tasks to determine whether they together constitute one project. *United Refining Co. v. DEP*, 2008 EHB 434, 445. There is no bright-line rule to follow:

Instead, the Department must independently consider such factors as the relationship of the various tasks measured in time and space, the tasks’ operational, technical, and economic interdependence, whether the tasks are geared toward achieving a shared objective, whether the tasks were conceived originally as part of a common plan, and other relevant considerations.

Id. Closeness in timing and in space suggest that there is one project, as does integrated planning. If one phase of a phased project would not be viable without other phases, aggregation may be appropriate. Other relevant considerations might include funding information indicating one project, whether the changes are involved in the production of one product or related products, and the relationship of the changes to the overall basic purpose of the facility. No one factor is dispositive, and the list is not intended to be exclusive, although closeness in timing and functional interdependence strike us as particularly significant. A rule of thumb of three years has been proposed at the federal level, 83 Fed. Reg. 57326-31, but we are not ready to adopt such

⁵ For the most recent development of which we are aware, *see* 83 Fed. Reg. 57324 (Nov. 15, 2018).

a rebuttable presumption. Instead, the Department should evaluate all relevant and objective criteria specific to a case to determine if multiple changes at a facility should be aggregated as a single project for purposes of the applicability determination. Ultimately, it is a judgment call, and we must decide whether the Department's judgment call was reasonable and supported by the facts. Ultimately, we should not lose sight of the fact that the Legislature created and adopted the NSR program to ensure that new significant emissions do not slow progress toward cleaner air, and the PSD program is designed to ensure that new emissions do not cause air quality to deteriorate significantly and will continue to obtain air quality standards. 42 U.S.C. §§ 7470, 7503(a). Here, the facts simply do not support the Department's determination.

The parties refer to the construction work at issue here that potentially needs to be aggregated with Plan Approval E as Projects 1, A, B, C, and D, and RFD 5236.⁶ We have described these projects in great detail in our Findings of Fact, but by way of summary, in February 2013, the Department issued Sunoco a plan approval to construct one storage tank for ethane and one for propane (Plan Approval 23-0119). This is Project 1. In September 2013, the Department issued Sunoco a separate plan approval to construct a deethanizer to separate the ethane-propane mix delivered to the facility into its constituent parts for storage in the same tanks constructed as part of Project 1 (Plan Approval 23-0119A). This is Project A. In January 2014, the Department issued Sunoco a separate plan approval authorizing the installation of a truck loading and offloading facility and the repurposing of equipment, including an existing fractionation tower, to fractionate (or separate a mixture into its component parts) natural gasoline (another type of NGL) into pentane and light naphtha and store and distribute those products (Plan Approval 23-0119B) (Project B).

⁶ Future projects will be discussed below.

In November 2014, the Department issued a separate plan approval to Sunoco to install a cooling tower to facilitate the water cooling that is part of the deethanization process previously constructed as part of Project A (Plan Approval 23-0119C) (Project C). In February 2015, the Department issued a separate plan approval to Sunoco to construct one storage tank for ethane, two for propane, and one for butane, and to convert a deethanizer permitted as part of Plan Approval A to a demethanizer (Plan Approval 23-0119D) (Project D). In April 2016, the Department issued a separate plan approval for the development of two fractionation systems, made up of two depropanizers and one debutanizer and associated piping and “fugitive components.” The project also involved installing a new sub-header for Marcus Hook’s ethylene complex flare (located in Delaware), using cooling water from what is identified as the 15-2B cooling tower, and using steam from auxiliary boilers at the facility (Plan Approval 23-0119E) (Project E). It is from this plan approval that the Council filed this appeal. Finally, in August 2015, the Department issued an RFD to Sunoco authorizing two new 50,000-barrel sphere tanks to store propane and butane materials (RFD 5236). Our review leaves us with no doubt that all of these phased construction projects are part of the same project for applicability purposes, based upon the considerations that follow.

Physical Proximity

In evaluating physical proximity, a picture is worth a thousand words, and that picture is reproduced above at Finding of Fact No. (“FOF”) 245.⁷ That aerial depiction of the site clearly shows that all of the components of Projects 1 through E and RFD 5236 are physically proximate to each other. The physical proximity is not surprising given the functional interdependence of the various components and the fact that various of the components are literally linked by common infrastructure. Reference to Sunoco’s aerial depiction quickly reveals the close

⁷ The Board performed a site view in this case.

proximity of points 1 through 20, all parts of Projects 1 through E, all parts of what is in reality one project.

Temporal Proximity

Where, as here, a facility submits multiple plan approval applications within a relatively short period, it is strong evidence that there is a single project that should be addressed cumulatively in permitting. Sunoco essentially concedes the point. (Sunoco Brief at 63 n.16: “Although arguably, Project E is temporally proximate to the pre-Plan Approval E projects...”)

The Department acknowledges that the plan approval applications were “definitely” submitted over a “short period of time.” (T. 358, 391-92.)

The timeline for Projects 1 through E weighs heavily in favor of aggregation. In November 2012, Sunoco submitted its application for Project 1, which was granted on February 5, 2013 (storing ethane and propane). (T. 29-30.) Only one month later, Sunoco submitted its application for Project A (the deethanizer). (T. 30-31.) The Department granted a plan approval for Project A on September 5, 2013. During that same month, September, Sunoco submitted its application for Project B (natural gasoline). (T. 31-32.) On January 30, 2014, the Department granted the plan approval for Project B. Less than three months later, Sunoco submitted its application for Project C (the cooling tower). (T. 33.) The Department granted a plan approval for Project C on November 19, 2014. Two months before the Department granted a plan approval for Project C, Sunoco submitted its application for Project D. (T. 34-35.) On February 26, 2015, the Department granted a plan approval for Project D (increased storage). Less than six months later, Sunoco submitted RFD 5236 (more storage). (T. 38.) Within one week, the Department approved RFD 5236. About one month later, Sunoco submitted its application for Project E (depropanizers and debutanizer). (T. 38-41.) On April 1, 2016, the Department granted

the plan approval for Project E. The engineering and construction periods for the various components of Sunoco’s phased projects overlap to a significant degree, as shown on Sunoco’s Plan Approval Summary reproduced at FOF 247. Clearly there can be no reasonable dispute that the sequenced projects at issue indeed occurred in relatively quick succession.

Interdependence of Phased Projects

The fact that nominally separate construction projects are in fact operationally, technically, and economically interdependent strongly supports a finding that the projects should be considered to be one project for purposes of PSD/NSR applicability. We are struck by the contrast between the detailed analysis of interdependence set forth in the Council’s brief, and the near complete lack of any substantive response by Sunoco or the Department on the facts regarding the showing of that interdependence.⁸ In truth, Sunoco and the Department would have been hard pressed to mount a meaningful response because the interdependence of Project E with earlier projects is clear and persuasive.

Sunoco argues that Project E must be *independently* linked to each of the other projects for each of those projects to be aggregated. It criticizes the Council for trying to “daisychain” the projects, which we understand to mean that Project 1, or any other project, cannot be *indirectly* linked to Project E to support aggregation, but Project E must be linked to each other project individually. This attempt at a distinction strikes us as rather artificial. Ultimately, the

⁸ Sunoco argues that the Council is unable to establish the technical and operational interdependence of the projects because the Council did not have any expert witness testimony. Sunoco posits that fractionating NGLs is inherently scientific, and explaining the interrelation among the projects requires specialized understanding of, e.g., organic chemistry and chemical engineering. However, we do not think expert testimony or specialized knowledge is necessary to make the connections that the Council has made and established through substantial evidence from Sunoco’s own plan approval applications and the Department’s own plan approval review memos. *Cf. Casey v. DEP*, 2014 EHB 439, 453 (expert testimony not necessarily needed when testimony of witnesses involved in permit application and its review can potentially show that permit does not satisfy the requirements of the law). As discussed *infra*, the interdependence of the projects is obvious and overwhelming based on the evidence.

issue is whether there is really only one project, and if so, what are the components of that project. We see no reason why, e.g., Project 1 cannot be included in the overall “project” for aggregation applicability purposes because the connection between Project 1 and E goes through or is enabled through, e.g., Project A. Sunoco’s proposed prohibition against “daisy chaining” is inconsistent with the notion that we ought to be examining the realities of the situation using common sense, not elevating form over substance.

For example, Sunoco acknowledges that Projects 1 and C are parts of the same project. (Sunoco Brief at 42-43.) It even refers to it as Project 1/C. (Sunoco Brief at 43.) The record certainly supports this aggregation. It would seem, then, that even under Sunoco’s construct (that Project E must be linked with each of the other projects separately), the “other project” is not 1 or C but Project 1/C. Meanwhile, the Department acknowledges that Project C and Project A are parts of the same project. (DEP Brief at 32-33; T. 371-73.) Sunoco does not seem to dispute that point. One of its representatives even testified that Project C was a “design optimization” of Project A. (T. 594-95.) The record certainly supports this aggregation. Sunoco could not store separated NGLs in the Project 1 tanks without the transmix separation capability provided by the Project A equipment. The Department expressly concedes, and we agree, that Projects A and C needed to be aggregated. (DEP Brief at 33.) It determined that Project C, installation of a new cooling tower, was technically and economically linked to Project A because it was being constructed to provide cooling water for the deethanizer unit permitted in Plan Approval A. Based on the technical and economic relatedness of Projects A and C, the Department linked the projects together as one project. (DEP Brief at 33.) In light of the Department and Sunoco’s concessions, it would seem that we ought to be referring to Project 1/A/C.

While the aggregation of Project 1/A/C makes perfect sense, we have trouble understanding the Department's rationale for not aggregating other Marcus Hook projects. For example, Project D uses the marine vessel docks permitted in Project 1, and it also redesigns the cold flare permitted in Project 1. Project D uses the amine treatment system and dehydration unit from Project A. It also uses the deethanizer unit permitted in Project A, repurposing it as a demethanizer. Plan Approval D creates storage for the use of the amine treatment and dehydration system permitted as Plan Approval A, while also expanding storage permitted as Plan Approval 1. Sunoco's plan approval application even stated that it was fully incorporating all sources and emissions increases associated with Projects 1, A, and C. (A.Ex. 10.) Yet, the Department did not aggregate Project D with any other project.

Multiple plan approvals that involve the same emissions units are strong evidence of a single project. The Department gets it exactly wrong when it says that separate projects that use the same equipment demonstrates that the projects are unrelated. (T. 392.) Here, Project E and the other construction work rely on common equipment. The flares and cooling towers serve multiple projects. Project E uses the 15-2B cooling tower that was permitted in the facility's Title V permit. The 15-2B cooling tower is also used by Project B. We are not sure why this interconnection is so different from the Project C cooling tower that was being constructed to provide cooling water for the Project A deethanizer, projects which the Department told us clearly needed to be aggregated. Projects B and E also use the same boilers and the same ethylene complex flare. The deethanizer (Plan Approval A), depentanizer (Plan Approval B), and depropanizers and debutanizer (Plan Approval E) all depend upon and require the steam produced by the auxiliary boilers, as does Project D. Projects 1, A, and B use many of the same piping components. Many of the same storage tanks serve multiple projects, as do the off-

loading facilities. Multiple projects use the dehydration units and amine treatment system. The fractionation towers are integrated into the process chain for multiple projects. We have great difficulty understanding the Department's conclusion that Project E is a stand-alone project in light of these interconnections.

Where, as here, multiple plan approvals relate to the same process, it is evidence of a single project. Project E will produce export grade propane, mixed butanes, and natural gasoline. The propane produced by Project A (which uses tanks from Project 1) is available for further processing by Project E. The propane and butane mixture produced by Project D can be separated by Project E. Storage for the ethane, propane, or butane will be either in existing caverns or the cryogenic storage tanks permitted under Plan Approvals 1 and D. The 50,000-barrel sphere tanks approved with RFD 5236 to store propane and butane feedstock entering the facility are also available for processing by the depropanizers and debutanizers constructed with Project E. Storage for the natural gasoline will be in existing floating roof tanks permitted in Plan Approval B (Source Nos. 188, 190, 192, 212). (A.Ex. 21.) At least Sources 188 and 212 are the feedstock tanks for Project B (A.Ex. 19), which means that the natural gasoline produced by Project E is available for further processing by the Project B depentanizer. This is further evidence of interdependence between B and E. The fact that all of the feedstock for Project B may not derive from Project E and all Project E product will not go to Project B equipment shows just how interconnected the various product streams are at the facility. Without the storage provided by sources permitted under Plan Approvals 1, B, and D, and RFD 5236, Project E as designed would not be viable, and cryogenic product storage is at the heart of the service that the Marcus Hook facility provides.

As confirmed by Sunoco's senior director of terminal engineering and construction, with Plan Approvals 1 through E, the Marcus Hook facility is capable of receiving, storing, fractionating, and distributing all of the products from an NGL stream of C3+. (T. 144-46.) Plan Approval E is integrated into the overarching process of handling NGLs at Marcus Hook and it shares equipment with the plan approvals that preceded it. There is no question that Plan Approval E is a component of a larger project from an operational standpoint.

Common Plan and Shared Objective

In *United Refining, supra*, 2008 EHB 434, we spoke of tasks being geared toward achieving a shared objective and being implemented as part of a common plan. Although these considerations are more subjective than close timing and interconnectedness, they reflect the fact that even a facility developer sees the various construction phases as part of one project. Here, the evidence of a common plan and shared objective supports our conclusion that there is actually only one true project.

The common objective of Projects 1 through E and RFD 5236 is to take the NGLs that are delivered from the Mariner East pipelines and other sources, fractionate those NGLs into individual products, and store and ship those products offsite. The purpose of all of the equipment, working together, is to convert mixed NGLs into their marketable subparts. Projects 1 through E operating together can process a wide array of NGLs into all of their component constituents. Sunoco's effort to distinguish the objectives of the various phases strikes us as somewhat contrived as illustrated by its argument that the objective of one project was to store ethane and propane but the objective of another project was to store "additional quantities" of ethane and propane. (Sunoco Brief at 58.)

There is some evidence of record to show that Sunoco had a plan to develop its facility in such a way as to deliberately avoid triggering PSD/NSR requirements. For instance, one of the fractionation towers that Sunoco built as part of Project A and renamed as part of Project D was up for consideration for use as part of Project E, but Sunoco was concerned that if it reused that tower the Department would aggregate Projects 1, A, and C with Project E, so Sunoco decided to use a different tower for Project E. (T. 41-45; A.Ex. 11.) In any event, such a deliberately evasive plan is not a prerequisite to a finding that nominally separate projects are actually parts of a larger project whose emissions should be aggregated for applicability purposes. There is no question that Sunoco *did* have a plan to make all the adjustments necessary to turn the Marcus Hook facility into a comprehensive NGL hub, and Project E is simply one part of that plan.

There is substantial evidence of planned integration. For example, the permit limits for the auxiliary boilers were changed as part of Plan Approval B to a level well beyond what was needed or would ever be needed for Project B or the previously permitted projects by themselves. Future expansion was clearly anticipated. The Department has relied heavily on that fact in support of its argument that the boilers were not modified as part of Project E, but for current purposes we see it as strong evidence of coordinating what is in reality a single project.

We are unable to credit the suggestion that Sunoco planned anything less than a facility designed to store, fractionate, and export multiple components of NGLs. Although Sunoco began by permitting two tanks for ethane and propane (Project 1), we cannot credit the notion that Sunoco ever thought that would be the end of site development. We do not believe that, when Sunoco decided to install a deethanizer (Project A), its plan was to stop there. The same point maintains through and including the equipment permitted under Plan Approval E. The fact

that the details of the project may have changed over time does not change the reality that it has all been part and parcel of one project from the beginning.

Sunoco's own public announcements support a finding of a common plan and a shared objective. For example, Sunoco has referred to Projects 1, A, and C as all parts of the "SXL Project Mariner." In its press release for its open season for the Mariner East 1 pipeline, Sunoco advertised a comprehensive natural gas liquids takeaway solution for its customers, through the Mariner East pipeline to the terminal at the Marcus Hook facility:

**SUNOCO LOGISTICS PARTNERS L.P. ANNOUNCES SUCCESSFUL
OPEN SEASON FOR PROJECT MARINER EAST**

Second Phase in Development Based on Significant Interest

PHILADELPHIA, Sept. 26, 2012 – Sunoco Logistics Partners L.P. (NYSE: SXL) announced today a successful open season for Mariner East, **a pipeline project to deliver propane and ethane from the liquid-rich Marcellus Shale areas in Western Pennsylvania to Sunoco, Inc.'s facility in Marcus Hook, Pennsylvania, where it will be processed, stored, and distributed to various domestic and waterborne markets.** Binding commitments for all of the pipeline capacity offered have been received from shippers enabling the project to move forward. Mariner East, along with the previously announce Mariner West project which will deliver ethane to the Sarnia, Ontario market by mid-2013, **will provide Marcellus Shale basin producers with a comprehensive natural gas liquids takeaway solution.** Sunoco Logistics is projecting to invest over \$600 million for the Mariner projects.

(A.Ex. 2 (emphasis added).) Sunoco further stated in the press release,

Brian P. McDonald, Chairman and Chief Executive Officer of Sunoco, Inc., and Chairman of Logistics, said: "Mariner East is an important project in two ways. It supports the continued development of the Marcellus Shale, one of Pennsylvania's most important resources, by offering producers an outlet for valuable products. **Mariner East also represents a significant step in repurposing the former Marcus Hook refinery site and creating a world-class facility with a promising future based on natural gas liquids.**

(*Id.* (emphasis added).)

In its open season for Mariner East 2, Sunoco advertised a second pipeline to transport NGLs to the Marcus Hook facility:

**SUNOCO LOGISTICS ANNOUNCES BINDING
OPEN SEASON FOR PROJECT MARINER EAST 2**

PHILADELPHIA, December 4, 2013 – Sunoco Logistics Partners L.P. (NYSE: SXL) today announced that it will commence a binding Open Season for its Mariner East 2 project. **This Open Season is for a pipeline that will transport natural gas liquids** from processing facilities built in the liquid-rich Marcellus and Utica Shale areas in Western Pennsylvania, West Virginia and Eastern Ohio **to Sunoco Logistics’ Marcus Hook Industrial Complex on the Delaware River**, approximately 300 to 400 miles from the production region. The Mariner East 2 pipeline is expected to be operational in early 2016.

(A.Ex. 3 (emphasis added).) Sunoco stated further,

“We are pleased to launch the Open Season for Mariner East 2,” said Michael J. Hennigan, president and chief executive officer. “We are bullish on the production growth from the Marcellus and Utica Shales. **We are proceeding with the Open Season as we have received considerable market interest to develop this project to provide producers with several marketing options for their expanding production.** We believe the market is long NGLs as the supply will continue to outpace demand. As a result, Mariner East 2 would provide the highest value option for producers in this region as an export solution on the East Coast. **We will continue to add storage and expand our Marcus Hook complex to be a world class NGL facility on the East Coast. In addition, the 800-acre Marcus Hook site is well positioned for further NGL processing.**”

(*Id.* (emphasis added).) In its open season for Mariner East 2X, Sunoco offered the capacity to receive and process C3+ and other feedstocks, thereby expanding the range of capacity for NGLs:

MARINER EAST 2 EXPANSION PROJECT

NOTICE OF OPEN SEASON

Sunoco Pipeline L.P. (“SPLP”) held successful open seasons, Project Mariner East and Project Mariner East 2, in 2012 and 2013, respectively, **for pipeline transportation of propane, butane and ethane** from origin points in Houston, PA, Seto, OH, via Hopedale, OH, and Follansbee Jct., WV (the “NGLs Origin Points”) **to the Sunoco Partners Marketing & Terminals L.P. terminal in Marcus Hook, PA and Claymont, DE (the “SPMT Terminal”).**

Shippers have expressed interest in an expansion of Project Mariner East 2 to (i) **increase the capacity available for transportation of propane and butane** from the NGLs Origin Points **to the SPMT Terminal**, (ii) **increase the capacity available for transportation of ethane** from Houston, PA **to the SPMT Terminal**, and (iii) **provide capacity for transportation of C3+, natural gasoline and condensate** from some or all of the NGLs Origin Points to the SPMT Terminal (Project Mariner East 2, as so expanded the “Mariner East 2 Expansion Project”).

(A.Ex. 4 (emphasis added).) It further stated,

Highlights of Mariner East 2 Expansion Project

Potential Priority Service Shippers would have the ability to make a volume commitment to the Mariner East 2 Expansion Project **for ethane, propane, butane, C3+, natural gasoline or condensate or any combination of such products.**

....

It is anticipated that the Mariner East 2 Expansion Project would be in-service for the transportation of ethane, propane, butane, C3+ and natural gasoline in 2017 and for condensate in 2017/2018.

(*Id.*) These announcements support our finding that there has been one common plan from the beginning. The details will change continuously, but that does not mean there was not a common plan.

Other Relevant Factors

Sunoco says it could have developed Project E at some remote facility instead of at Marcus Hook, but the record does not support that. Project E is dependent on a cooling tower that was not built or reactivated as part of Project E. The same goes for the boilers and the flare, existing pipes and storage, and shipping facilities. Project E would have looked much different at a remote facility. Sunoco makes a striking concession in its brief acknowledging Project E’s dependence on other elements of the facility: “[Sunoco], however, would have needed to acquire new space and construct or acquire various pieces of new equipment (e.g., cooling tower and boilers) to support the project, as opposed to using space and equipment that already existed at

[Marcus Hook].” (Sunoco Brief at 63.) This is precisely the point. The operation of Project E is dependent upon equipment that was permitted previously. But for the cooling tower and boilers, Project E would not be able to function on its own. Although the cooling tower and boilers were carried through from the former refinery’s Title V permit, it is still compelling evidence that the facility is functioning as one cohesive, interdependent project. Further, as noted, the permitted boiler capacity was adjusted with Plan Approval B.

Sunoco expresses the concern that the entire facility’s redevelopment plans could get roped into a single project for applicability purposes. The Department will need to consider on remand whether the project that encompasses Projects 1 through E should also include Sunoco’s other known construction projects, but if it turns out that the project is in fact a rather big one, it would seem that that is precisely the sort of project that the Legislature intended to capture in the PSD and NSR permitting programs. We see nothing inherently improper in considering multiple sources at a single facility holistically, even if it is a large facility.

Both Sunoco and the Department rely on the existence of “new customers” as a basis for not aggregating Project E with the other projects. We have virtually no evidence regarding these purported new, unidentified customers. We are not entirely clear whether the “new customers” refer to companies shipping NGLs to the site, to companies purchasing final products, or both. It should be noted that the Department had no evidence of its own of “new customers.” It seemed willing to make an important regulatory decision with no evidence other than Sunoco’s vague assurances. (T. 395-96.) Sunoco was in a better position to provide background on these “new customers,” but it failed to do so. It instead ambiguously refers to, e.g., “evolving business opportunities and other variables” and “divergent purposes and customer needs.” (Sunoco Brief at 6, 12, 13, 26, 55, 59.) Without any details or specifics, we are unable to credit these claims or

the testimony that was offered to support them. There is some vague, apparently hearsay evidence of a new supply, (T. 597-98), but we simply do not have enough evidence to support a finding that new customers justify treating Project E as a stand-alone project entirely separate from the other construction phases.

In any event, we do not understand why the existence of new customers should weigh so heavily in the aggregation analysis. Indeed, the Department seems to think it is virtually dispositive. (DEP Brief at 32-33.) It offers almost nothing else in support of its conclusion to treat Project E as a stand-alone project. It does not strike us as particularly significant that a processing and storage facility finds new suppliers of raw materials or new customers of finished products. The existence of new buyers of the same finished product seems entirely irrelevant. As to new suppliers of the raw materials to be processed, those suppliers, whoever they may be, are all supplying mixed NGLs for storage, processing, and shipping. Sunoco obviously solicited customers through its various open seasons, so it does not seem that the arrival of “new customers” was a deviation from Sunoco’s plan for the facility or that “new customers” were coming as some great surprise to Sunoco.

The Department says Sunoco is providing “different services,” but the service strikes us as exactly the same, with only slight differences depending upon the nature of the mixed feedstock involved. The Department mentions new ways the raw material comes into the facility (e.g. trucks versus pipeline), but again, it fails to explain why that is significant, particularly in the context of evaluating air emissions. It does not impress us as particularly relevant that raw material is shipped to the site by blue trucks versus red trucks, or railcars versus pipelines. The Department pays lip service to the *United Refining* factors, but seems instead to have relied on new factors of its own invention without any explanation of why its factors should weigh

materially if at all in the determination of whether phased construction projects are all part of one project for project aggregation applicability purposes.

Sunoco attempts to distinguish *United Refining* by asserting that each of the projects from 1 through E achieve their “own, separate objective, ranging from storing quantities of ethane and propane to fractionating natural gasoline into products to storing additional quantities of ethane and propane and storing butane to transferring a cooling load between cooling towers.” (Sunoco Brief at 58.) Sunoco accuses the Council of taking an overly broad view of the projects’ objectives in contending that all of the projects are geared toward making the Marcus Hook facility an NGL processing, storage, and distribution hub. On the contrary, as evidenced by Sunoco’s unconvincing attempt to distinguish the projects’ objectives, we believe that Sunoco has taken an overly narrow view.

In *United Refining*, we upheld a Department decision to aggregate emissions from different phases of a single project. A petroleum refinery had submitted various plan approval applications to the Department over the span of several years that were aimed at complying with EPA rules regarding the removal of sulfur from the gasoline produced at the facility. A plan approval issued in 2002 was for the production of low sulfur gasoline. A subsequent plan approval issued in 2007 (and subject of the permittee’s appeal) was for the production of ultra low sulfur gasoline. We determined that both of these projects shared a common objective in allowing the permittee to produce gasoline in compliance with the EPA’s Tier 2 fuel standards. We found that the low sulfur gas project was dependent upon the ultra low sulfur gas project because the two gas streams were blended to produce gas that complied with the EPA standards; the gas streams were not independently marketable. The two projects were operationally interconnected—the permittee received a single stream of feedstock, produced two separate

streams of gasoline, processed each stream separately, and then combined them back together to meet the low sulfur gasoline requirements. There was no doubt that these two projects were in reality two components of an overarching project.

The case before us is closer to *United Refining* than Sunoco is willing to admit. Indeed, Sunoco's own brief essentially concedes the point. Again, we do not understand why, for instance, Sunoco's assertion that "storing quantities of ethane and propane" and "storing additional quantities of ethane and propane" is evidence that the various Marcus Hook projects are *not* related. (Sunoco Brief at 58.) As discussed in detail above, all of the projects are dependent upon or interrelated with other projects at least in part to fulfill their objectives. Project E is dependent upon the tanks from Projects 1 and D, the products produced by Projects A and D, and the previously permitted cooling tower, flare, and boilers (re-permitted with Project B) to achieve its objective of fractionating a C3+ stream into propane, butane, and natural gasoline. Although some of the products from the individual projects may be independently marketable like in *United Refining*, the overall process for receiving, storing, processing, and distributing NGLs is wholly integrated to serve a common objective. Marcus Hooks receives NGL feedstocks and directs those feedstocks to the appropriate arm of its fractionation operation using common tanks, pipes, and ancillary equipment. It is a more complex process chain than in *United Refining*, but that complexity does not belie an underlying coherence to the entire project.

In conclusion, it is the *combination* of factors here that convinces us that Project E should have been aggregated with the earlier projects. Geographic and temporal proximity, operational interdependence, and the common plan are all compelling evidence of a single project. Sunoco and the Department offer little, and nothing persuasive, to convince us otherwise.

Modifications

Now that we have decided that there is only one “project” for at least the equipment permitted under Plan Approvals 1 through E and RFD 5236, the Department may need to reconsider on remand what sources if any have been “modified” as that term is used in the PSD and NSR programs, and the consequences of any such modifications.

Determining whether a source has been “modified” is one of the most contentious parts of air pollution law and it is complicated and highly fact-specific. A modification is defined as follows:

Modification – A physical change in a source or a change in the method of operation of a source which would increase the amount of an air contaminant emitted by the source or which would result in the emission of an air contaminant not previously emitted, except that routine maintenance, repair and replacement are not considered physical changes. An increase in the hours of operation is not considered a modification if the increase in the hours of operation has been authorized in a way that is Federally enforceable or legally and practicably enforceable by an operating permit condition.

25 Pa. Code § 121.1. *See also* 40 CFR 52.21(b)(52) (defining “project” the same way). Not all modifications trigger new source review. For example, it depends in part upon whether there has been an increase in pollutant emissions from the project. 25 Pa. Code § 127.203a.

It is not entirely clear how the Department should address the modification of emission units in a *post facto* project aggregation situation such as that presented here. For example, the Department determined that the boilers were not modified as part of Project E because they were modified as part of Project B.⁹ The 15-2B cooling tower was determined not to have been modified as part of Project E but it may have been modified if one considers RFD 5597, which

⁹ It is ironic that the Department essentially argues that Projects B and E can be considered together for modification purposes but not for purposes of deciding whether one project is involved for applicability purposes.

immediately followed Project E. We believe the Department should be afforded the opportunity to decide in the first instance on remand how to address this problem.

The Council has raised a few issues that are likely to persist on remand. In determining whether an emissions unit has been modified, there is an open issue in a case like this (where multiple emission units are attached to each other), where one emission unit ends and a different emission unit begins. We have not been referred to any helpful statutory, regulatory, or precedential language or guidance on point. The Department eventually decided in support of its conclusion that the boilers, cooling tower, and flare were not modified as part of Project E and that the external pipes leading into the boilers, cooling tower, and flare (or their headers) are not part of the boilers, cooling tower, and flare themselves, but it has not been entirely consistent on this point. Secondly, there is as an open issue of how emissions attributable to modified and unmodified sources need to be calculated for purposes of the PSD/NSR applicability determinations. Although the Department designated the flare, cooling tower, and boilers as unmodified existing sources when it reviewed the application for Plan Approval E, Sunoco and the Department nevertheless acknowledge that there will be increased emissions from those sources as a direct result of Project E. They refer to these increases as “incremental emissions.” They included the “incremental emissions” from the flare and the cooling tower, but not from the boilers, in their totals for seeing if PSD/NSR thresholds were triggered. The way the Department has handled the boiler increases is irreconcilably inconsistent with the way it has handled the flare and cooling tower increases. It does not explain the inconsistency. We have been provided with very little guidance on the use of “incremental emissions” from existing nonmodified sources. There is passing reference to an unidentified “EPA guide.” (T. 668.) Sunoco refers to two hearsay EPA memos that are not in the record and upon which we are not willing to rely

without a sponsoring witness or any record explanation. We note that the two memos are the only sources Sunoco cites for the practice of including “incremental emissions” from nonmodified existing sources, which arguably suggests there is no controlling statutory or regulatory law on point. The Department is all but silent on the issue.

The Department and Sunoco say that incremental emissions must be counted toward the PSD/NSR triggers. Although it makes logical sense, there is no citation to any authority for that proposition. They say the emissions that count are emissions that are “attributable to the project” or “related to the project.” Once again, we have no legally binding authority to back that up. It is curious that emission increases from *modified* sources depend on an elaborate process involving, *inter alia*, baseline actual emissions (BAE), but emission increases from *nonmodified* sources simply need to be shown to be “related to the project.” We are not necessarily questioning the standard; we are simply wondering where it comes from.

Next, the Department apparently in some cases, albeit not necessarily consistently, considers existing permit limits as a factor in determining whether a source has been modified for applicability purposes. The Department does not cite any authority for its practice of considering existing permit limits when it decides whether something is a modification. The operative regulations regarding modifications do not say that something that is otherwise a modification is not a modification if existing permit limits can accommodate the physical or operational change. The regulations do *not* say that an operator can make any physical or operational changes it wants and it will not be a modification if existing permit limits can still be satisfied, yet the Department repeatedly says that in its brief. As just one such example, on page 42 it says, “If there were no emission increases above the permitted levels, there was no modification regardless of whether there were any changes made.” The operative regulations say

that whether something is a modification turns on a physical change or change in operation method that causes an increase in emissions, not that necessitates an increase in permit limits. We have not been referred to any case law that supports the Department's approach, but our independent review of federal cases finds no support under current law for the increase-within-permit-limits requirement. *See e.g., New York v. EPA*, 443 F.3d 880 (D.C. Cir. 2006) ("any" physical change that increases emissions means just that: *any* change).

The Department alternatively or perhaps relatedly relies on exclusions for a mere increase in hours of operation within existing permit limits in the regulations defining modifications. However, the Department does not explain why the increased use of the boilers for Project E constitutes nothing more than an increase in "hours of operation." There is nothing in the record to support a finding that the increased steam demand constitutes a mere increase in hours of operation. The exclusion for a mere increase in hours of operation is a limited exclusion. *See Wisconsin Elec. Power Co. v. Reilly*, 893 F.2d 901 (7th Cir. 1990) (the exclusion for hours of operation was provided to take advantage of fluctuating market conditions, not new construction); *United States v. Cinergy Corp.*, 458 F.3d 705, 708 (7th Cir. 2006) (a physical change that enables increased production is not excluded); *Puerto Rican Cement Co. v. EPA*, 889 F.2d 292, 298 (1st Cir. 1989) (increased capacity not same as increased hours); *United States v. Ameren Mo.*, 229 F. Supp. 3d. 906, 987 (E.D. Mo. 2017) (increase of hours of operation caused or enabled by physical change must be included in PSD analysis).¹⁰

¹⁰ On the flip side, the Department says, "If, however, the increase in emissions requires an increase in the previously permitted limit, then that increase does constitute a modification." (DEP Brief at 35.) This also seems inconsistent with the applicability requirement that there be a physical or operational change. Whether an emission increase requires a plan approval or permit modification is one thing; whether that increase is independently a factor in PSD/NSR applicability is quite another.

Remand

The Department testified, quite correctly in our view, that known future construction projects must be considered as part of the project aggregation (or, in its words, “linking”) analysis. (FOF 276.) Neither the Council nor Sunoco dispute that point. The Department acknowledged in its brief that known future projects should be included in the aggregation analysis. (DEP Brief at 31.) Projection of future events is not at all uncommon in the air quality permitting process. *See Pa. v. Allegheny Energy, Inc.*, 2008 U.S. Dist. LEXIS 93800 at *20 (W.D. Pa. 2008) (permittees required to project future emissions to determine significant net emissions increase under PSD program). Now that projects postdating Project E have been approved in plan approvals and RFDs, those projects are obviously now known. Those certain projects include RFD 5597 and Projects F through I. The Department will need to decide on remand whether any of that construction work should be considered part of the same project that includes Project 1 through Project E for its revised applicability determination for Project E.

We have concluded that the emissions from the equipment permitted under Plan Approval E must be aggregated with the emissions from equipment permitted under Plan Approvals 1 through D and RFD 5236, and on remand, possibly from the equipment permitted in postdated RFDs and plan approvals. The Council has attempted to show us that such aggregation will necessarily result in total emissions that trigger the PSD and NSR programs, and therefore, that Plan Approval E will need to be redone in full compliance with all PSD and NSR requirements (e.g., air quality modeling).¹¹ The Department for its part asserts that “no matter what the Board decides in this appeal,” even if every project since Project 1 is combined, it will not make any difference in the final analysis on remand regarding applicability of control

¹¹ We are aware that the Council has made this attempt at least in part to address our previously expressed hope that this appeal practically speaking should not represent a purely academic exercise.

requirements. And even if the analysis would change, Sunoco will easily be able to revise its application in such a way as to avoid PSD, the Department says. Sunoco also argues that a future project aggregation analysis, if done correctly, will not trigger PSD requirements even if Projects 1 through E are combined. The parties make essentially the same arguments with respect to the modification issue; that is, even if we decide that the Department erred with respect to what equipment was modified and how emissions were calculated from modified equipment, it will make no practical difference either with respect to PSD/NSR applicability or pollution control requirements.

There does not appear to be any dispute that the applicability determination for Project E must be redone by Sunoco and the Department in the first instance in the event of a Board remand. No party has invited us to do the determination ourselves. Indeed, the Council argues repeatedly that it would be improper for us to do so. It acknowledges that Sunoco maintains some discretion in formulating the data used in a revised application, and it says there is no one “correct” set of NSR calculations.

At this point the parties’ various predictions regarding what will happen on remand are just that: predictions. We will not attempt to add our own prediction to the mix, preferring instead that Sunoco and the Department perform the proper analysis in the first instance. Our only constraints on remand with respect to project aggregation are that (1) the emissions from Projects 1 through E must be aggregated as part of the new applicability determination for Plan Approval E, and (2) the Department must consider whether the now-known projects postdating Plan Approval E should also be aggregated with the Project E emissions as part of the new applicability determination for Plan Approval E.

The Council urges us to revoke Plan Approval E while this additional analysis is performed. It says the Department's errors are far too serious to allow construction to proceed pursuant to a defective Plan Approval E during a remand. Unfortunately, neither Sunoco nor the Department have addressed this aspect of the Council's prayer for relief. Nevertheless, the Council has not shown us that such a potentially extreme remedy is necessary or appropriate in light of any actual harm to public health or the environment. The Department and Sunoco are convinced that further study will make no practical difference, and the Council has not convinced us that they are wrong. If at any point it becomes clear to the Department that extensive additional study will be needed because, e.g., PSD applies, we will leave it to the Department to decide in the first instance whether Plan Approval E should remain in place during that study. We will not revoke the plan approval, but we instead remand it to the Department for further consideration in accordance with this Adjudication.

CONCLUSIONS OF LAW

1. The Environmental Hearing Board has jurisdiction over this matter. 35 P.S. § 4006; 35 P.S. § 7514.
2. The Department's decision must be lawful, reasonable, and supported by a *de novo* review of the facts. *Logan v. DEP*, EHB Docket No. 2016-091-L, slip op. at 20 (Adjudication, Jan. 29, 2018); *Friends of Lackawanna v. DEP*, 2017 EHB 1123, 1156.
3. The Council bears the burden of proof in this appeal. 25 Pa. Code § 1021.122(c)(3).
4. To meet its burden, the Council must prove its case by a preponderance of the evidence, meaning it must show that its evidence is greater than the evidence supporting the Department's decision. *Delaware Riverkeeper Network v. DEP*, EHB Docket No. 2014-142-B,

slip op. at 27 (Adjudication, May 11, 2018); *United Refining Co. v. DEP*, 2016 EHB 442, 448-49, *aff'd*, 163 A.3d 1125 (Pa. Cmwlth. 2017); *Shuey v. DEP*, 2005 EHB 657, 691 (citing *Zlomsowitch v. DEP*, 2004 EHB 756, 780).

5. The Department must perform a determination of whether New Source Review / Prevention of Significant Deterioration requirements apply when it receives a plan approval application for a major facility. 25 Pa. Code § 127.203a; 40 C.F.R. § 52.21.

6. To make this applicability determination, the Department must decide what constitutes the “project,” which is defined as “[a] physical change in or change in the method of operation of an existing facility, including a new emissions unit.” 25 Pa. Code § 121.1.

7. In evaluating what constitutes the project for purposes of NSR/PSD, we consider such factors as “the relationship of the various tasks measured in time and space, the tasks’ operational, technical, and economic interdependence, whether the tasks are geared toward achieving a shared objective, whether the tasks were conceived originally as part of a common plan, and other relevant considerations.” *United Refining Co. v. DEP*, 2008 EHB 434, 445.

8. Projects 1 through E and RFD 5236 constitute a single project for purposes of New Source Review and Prevention of Significant Deterioration.

9. Project E should have been aggregated with Projects 1 through D and RFD 5236, and the Department erred when it issued Plan Approval E without aggregating it with Sunoco’s former and known future projects at the Marcus Hook facility.

10. The Council’s appeal need not be dismissed due to a purported lack of proper timely corporate authorization to file the appeal. *Clean Air Council v. DEP*, EHB Docket No. 2016-073-L (Opinion and Order, Feb. 9, 2018).

s/ Steven C. Beckman

STEVEN C. BECKMAN
Judge

DATED: January 9, 2019

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