DELAWARE
COASTAL ZONE ACT
PERMIT

NUMBER: 420

ISSUED TO: Praxair, Inc.

TO PERMIT: The construction and operation of a carbon dioxide purification and liquefaction unit and a nitrogen separation unit at the Delaware City Refinery.

SITE LOCATION: 4550 Wrangle Hill Road, Delaware City

Conditions Incorporated and made part of this Permit:

1. This permit is conditional upon the Permittee's compliance with all other applicable permit requirements, regulations and laws of the State of Delaware and Secretary's Order No. 2015-CZ-0034.

2. Issuance of this permit does not relieve the Permittee of the legal obligation of complying with all building permits, subdivision and other applicable code requirements of the county or municipality wherein the permitted project is located.

3. Based on assertions in the permit application and the determination made in the Environmental Assessment Report, issuance of this permit is granted contingent upon the existing CO2 manufacturing operation, currently under contract to the Delaware City Refinery (DCR), ceasing operations upon the expiration of their contract in 2016, or when the applicant's facility begins to receive the DCR feedstock of by-product gases as explained in the permit application. Should the current CO2 refining by Air Liquide not cease operations for any reason, this permit is null and void. Some short overlap of operations as described in the permit application is acceptable.

4. The production limit for this permit for manufacturing nitrogen is 28,000 lbs. per hour of ambient air.

5. If there are significant deviations from the plan and operations approved by the Secretary, the Permittee shall notify the Secretary as soon as possible. This permit may be revoked and a new permit application required if the Secretary deems the deviation to substantially change the nature or scale of the project and to be of actual or probable harm to the purposes of the Coastal Zone Act.

Signature: _____ Date: 9/3/15

David S. Small, Secretary
Department of Natural Resources & Environmental Control

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

OFFICE OF THE
SECRETARY

PHONE: (302) 739-9000
FAX: (302) 739-6242

Secretary's Order No. 2015-CZ-0034

Re: Application of Praxair, Inc. for a Coastal Zone Act Permit for Manufacturing Carbon Dioxide and Nitrogen at 4550 Wrangle Hill Road, New Castle, New Castle County (CZA Project No. 420P)

Date of Issuance: **September 3, 2015**
Effective Date: **September 3, 2015**

Under the authority granted the Secretary of the Department of Natural Resources and Environmental Control ("Department") pursuant to *7 Del. C. Chap. 60*, the *Coastal Zone Act* ("CZA"), *7 Del. C. Chap. 70*, the Department's *Regulations Governing Delaware's Coastal Zone*, *7 DE Admin. Code 101*, ("Regulations") and other relevant authority, the following findings of fact, reasons and conclusions are entered as an Order of the Secretary following a public hearing on the CZA permit application ("Application") submitted by Praxair, Inc. ("Applicant").

Background and Procedural History

On May 8, 2015, the Department received the Application for permission for new manufacturing in the Coastal Zone[1] ("Project"). The Project would produce carbon dioxide ("CO_2") and nitrogen ("N_2") on land owned by Delaware City Refining Company, LLC at its petroleum refinery at 4550 Wrangle Hill Road, New Castle, New Castle County ("Refinery").[2]

[1] The CZA defines this area, which includes an area in Delaware waters and along the Delaware coastline landward at various widths based upon roads, bays and canals.
[2] New Castle County tax parcel 12-008.00-014.

On May 13, 2015, the Department had published public notice of the receipt of the Application. On June 11, 2015, the Department approved the Secretary's Environmental Assessment Report, which determined that the Application was administratively complete based upon a review of the Application, including Applicant's proposed offset of the Project's negative impacts. On July 1, 2015, the Department had published notice of the completed Application, and that on July 22, 2015 the Department would hold a public hearing on the Application at the Department's Lukens Drive office in New Castle.

At the public hearing, the Department's presiding hearing officer, Robert P. Haynes, received public comment from several speakers and the public comment period ended at the conclusion of the public hearing.

Following the public hearing, Mr. Haynes requested technical assistance from the Department's CZA experts within the Division of Energy and Climate, Coastal Zone Act Program, which on August 27, 2015 provided a Technical Response Memorandum ("TRM") that responded to public comments and recommended the issuance of a CZA permit. The CZA Program also provided a draft permit attached to the TRM should the Secretary decide to issue a CZA permit. In the attached Hearing Officer's Report ("Report"), Mr. Haynes recommends approval of the Application and the issuance of a CZA permit consistent with the CZA Program's recommendation and its draft permit.

Findings of Fact

Applicant proposes to manufacture CO_2 and N_2 using 3.63 acres of the Refinery's property, which is located within the Coastal Zone. The proposed manufacturing meets the CZA's definition of manufacturing, which is "the mechanical or chemical

transformation of organic or inorganic substances into new products." *7 Del. C. §7001.* A CZA permit is required for any new manufacturing within the Coastal Zone. However, new heavy industry use[3] is not eligible for a CZA permit and may not be located in the Coastal Zone. *7 Del. C. §7003.* The Department finds that the proposed manufacturing is not a prohibited use, which is a determination based upon the Project's small size and that the Project's characteristics are not similar to those described in the CZA's definition of a "heavy industry use."

The Department properly provided public notice of: 1) its receipt of the Application, 2) the Department's determination that Application was administratively complete on June 11, 2015; and 3) a July 22, 2015 public hearing to receive public comments on the Application. The Department also provided the public with the opportunity to comment on the Application at the July 22, 2015 public hearing as required by the CZA.

The Project would produce up to 517 tons per day of commercial grade CO_2, which would be sold for use in beverages, and up to 21,840 pounds per hour of N_2, which the Refinery would use as an inert, oxygen free, gas to reduce the risk of fire hazards in storage tanks and to purge process lines.

The Project's CO_2 production would use 43,000 pounds an hour ("lb. / hr.") flow of the Refinery's byproduct gas. Currently this byproduct gas is sent to an existing CO_2 manufacturing operation owned by Air Liquide, which has a contract with the Refinery that will expire in 2016. The Refinery has entered into a contract with the Applicant to produce CO_2 and N_2 at a new manufacturing facility that would replace Air Liquide's

[3] CZA Section 7003 prohibits in the Coastal Zone a new use that is either a "heavy industry use" or an offshore "bulk product transfer facility."

manufacturing upon the expiration of the contract in 2016. The Project's CO_2 manufacturing would also require a permit under the Department's air quality regulation 1102. *7 DE Admin. Code 1102.*

The N_2 manufacturing is an air separation process using standard cryogenic distillation that could process up to 28,000 lb. /hr. of ambient air to produce up to 21,840 lb. /hr. of N_2. This manufacturing would eliminate the Refinery's reliance on purchasing liquid N_2 from suppliers and having the N_2 trucked to the Refinery at a rate of approximately 100 truckloads a month. The N_2 manufacturing process is exempted from obtaining a permit under the Department's Air Quality Regulation 1102 because the air separation process to produce N_2 does not emit any more air emissions than are already in the ambient air.

The Applicant provided the Project's proposed negative impact, which identified 179,595.27 tons of annual air emissions from the proposed CO_2 manufacturing. Applicant's proposed environmental offset for this negative impact relied on emitting 13,335.079 tons less annually than the current annual air emissions from the CO_2 manufacturing by Air Liquide, which would cease operation once the Project began operating. The Department accepted the proposed offset in the June 11, 2015 Secretary's Environmental Assessment Report. The Report was a determination that the offset satisfied Section 9.1.1 of the CZA Regulations, which requires a proposed offset to more than offset the Project's negative impacts. *7 DE Admin. Code 101.* The full record following this initial determination that accepted the proposed offset, particularly from the public comments, also supports finding that the proposed offset complies with the CZA Regulations.

A review of the public comments finds that most supported the Project based on its positive economic impact for the Refinery and on the Delaware economy as well as its reduction in air emissions in the Coastal Zone based upon the proposed offset. Only one comment raised an issue based upon the Department's acceptance of Applicant's offset. This public comment stated that the Department should consider CO_2 emissions as a negative impact in its CZA decision and require the Applicant to provide an offset for the CO_2 emissions. The Coastal Zone Program's TRM responded to this comment and explained the reasons why CO_2 emissions were not included as a negative impact or required to be offset in the Department's review of CZA permit application. This explanation stated the Department's historical CZA regulation of negative impacts has not included CO_2 or required CO_2 emissions to be offset. Moreover, the TRM noted the lack of any commercially available pollution control equipment for CO_2 emissions. The record, however, does show that the Project's CO_2 emissions would be less than the current CO_2 emissions emitted by Air Liquide's manufacturing.

The Department has carefully considered the Project's negative environmental impacts as required by the CZA and finds that the negative impacts would be more than outweighed by the positive impacts, particularly the economic impacts. The Project will also result in improved air quality in the Coastal Zone when Air Liquide's CO_2 manufacturing ends and a hundred less trucks are needed each month to deliver N_2.

In addition to the environmental and economic impacts, the Department's experts have considered the Project's aesthetic effect on the surrounding area, and concluded that the Project will not change the aesthetics. The Project will be located within the land used by the Refinery. The number and type of supporting facilities the Project requires

has been considered, and these structures pose no significant change to the Refinery. The Project's effect on neighboring land uses will not change as the Project will be part of the Refinery. The Project will use water from a public utility and will use the Refinery's wastewater treatment and disposal system for its wastewater discharges. All solid waste produced by the Project would be removed from the Coastal Zone to a properly approved final disposal location. Finally, the Project would be consistent with the New Castle County zoning and the local comprehensive plans for development.

The record shows that the Project satisfies the requirements of the CZA and the CZA Regulations, and therefore the Department will issue Applicant the permit prepared by the CZA Program. The Department will monitor the Project's operations once the Project is completed and operating through a permit for the Project's air emissions from the CO_2 manufacturing. Similarly, the Project's usage of the Refinery's wastewater facilities for its wastewater requirements will also be monitored by the Department's existing permits for the Project's wastewater discharges that will be treated by the Refinery.

Conclusions and Reasons

Accordingly, I find and conclude that the record supports approval of Applicant's Application, and shall issue the Applicant a CZA Permit subject to certain reasonable conditions in the CZA Program's draft permit. I hereby enter the following conclusions:

1. The Department has jurisdiction and authority to issue a CZA Permit to the Applicant subject to the reasonable permit conditions deemed appropriate and consistent with the CZA's purposes included in the draft permit prepared by the CZA Program;

2. The Department provided public notice in a manner required by the law and its regulations of: 1) the receipt of the Application, 2) the determination that the Application was complete, and 3) the July 22, 2015 public hearing to receive public comments on the Application;

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

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

5. The Department carefully has considered all the factors to be considered in making a decision on a CZA permit application under the CZA and the CZA Regulations based upon an adequate record;

6. The Department shall publish legal notice this Order and otherwise provide notice as to all affected persons in a manner consistent with the public notice required by the law and the Department's CZA Regulations, and shall publish the Order on the Department's web site.

David S. Small
Secretary

HEARING OFFICER'S REPORT

TO: The Honorable David S. Small
Secretary, Department of Natural Resources and Environmental Control

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

RE: Application of Praxair, Inc. for a Coastal Zone Act Permit to Manufacture Carbon Dioxide and Nitrogen at 4550 Wrangle Hill Road, New Castle, New Castle County (CZA Project No. 420P)

DATE: August 27, 2015

I. PROCEDURAL HISTORY

This Report makes recommendations to the Secretary of the Department of Natural Resources and Environmental Control ("Department") on Praxair, Inc.'s ("Applicant") permit application ("Application") for a Coastal Zone Act[1] ("CZA") permit. The Department's Division of Energy and Climate, Coastal Zone Act Program ("CZA Program") received the Application on May 8, 2015, and had published public notice of its receipt on May 13, 2015. The Applicant seeks a CZA permit in order to manufacture carbon dioxide ("CO2") and nitrogen ("N2") at a petroleum refinery complex located at 4550 Wrangle Hill Road, Delaware City, New Castle County ("Refinery"),[2] which is within the Coastal Zone.[3]

On May 26, 2015, Delaware City Refinery Company, LLC provided a letter indicating that the existing CO2 manufacturing at the Refinery would cease in 2016.

On June 8, 2015, the Department received from the Applicant New Castle County's certification that the Project would be consistent with the County zoning regulation.

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[1] *7 Del. C. Chap. 70.*

[2] The Refinery's land use for petroleum refining has been determined to be an allowed nonconforming use pursuant to *7 Del. C. §7004(a)*. The Refinery is owned and operated by Delaware City Refining Company, LLC, a subsidiary of PBF Energy, Inc.

[3] The Coastal Zone is a geographic area defined in the CZA that includes land along the Delaware coastline, and landward at various widths based upon existing roads, bays and canals.

On June 11, 2015, the Department approved the Secretary's Environmental Assessment Report that reviewed the Application, including the Project's environmental impacts and offset, and determined that the Application was complete.

On July 1, 2015, the Department had published a public notice of the Application, and that a July 22, 2015 public hearing would be held at the Department's Lukens Drive office in New Castle in order to receive public comments on the Application.

On July 22, 2015, I presided over the public hearing on the Application and seven persons provided written or oral public comments. The public comment period ended at the conclusion of the hearing.

On July 29, 2015, the Applicant provided a response to a question asked at the hearing, and on August 26, 2015 provided me with a response to my questions.

I requested the Department's experts in the CZA Program for their technical advice and recommendation. On August 27, 2015, Phil Cherry, Director of the Department's Division of Energy and Climate, provided the attached Technical Response Memorandum ("TRM") along with a draft permit should the Secretary decide to issue a CZA permit. I consider the record complete, as established below, and I find that the record supports a decision to issue the permit prepared by the CZA Program.

II. SUMMARY OF THE RECORD

This Report is based upon the following record: 1) the documents introduced as exhibits at the public hearing and identified below, 2) the forty-seven page verbatim transcript of the public hearing, and 3) the information in this Report and the documents and information identified herein based upon my review of the Department's files and discussions with Department experts.

At the public hearing, Kevin Coyle, the CZA Program's Principal Planner, submitted the following documents[4] from the Department's files, which were marked as exhibits:

DNREC Exhibit 1-Application for a Coastal Zone Act Permit, dated May 8, 2015, and received by the CZA Program on May 8, 2015;

DNREC Exhibit 2-Affidavit of Publication announcing the receipt and availability of the Coastal Zone Act Permit application published in *The News Journal on* May 13, 2015;

DNREC Exhibit 3-Affidavit of Publication announcing the receipt and availability of the Coastal Zone Act Permit application, published in the *New Castle Weekly*, May 13, 2015;

DNREC Exhibit 5-a May 26, 2015 letter from John Deemer to Kevin Coyle providing the information on the transition from the existing CO2 manufacturer to Applicant's proposed manufacturing in 2016;

DNREC Exhibit 5-June 8, 2015 e-mail from Applicant's consultant, Rick Beringer of Duffield Associates to Kevin Coyle, DNREC, providing New Castle County's zoning certification that the proposed manufacturing would be consistent with the New Castle County HI zoning district;

DNREC Exhibit 6- Secretary's Environmental Assessment Report, signed June 11, 2015;

DNREC Exhibit 7- Affidavit of Publication in *The News Journal*, dated July 1, 2015 of the public notice of a completed Application and that a public hearing would be held July 22, 2015; and

DNREC Exhibit 8- Affidavit of Publication in the *New Castle Weekly*, dated July 1, 2015 of the public notice of a completed Application and that a public hearing would be held July 22, 2015.

In addition, a copy of the Delaware state public meeting calendar announcing the public hearing is included in the record as DNREC Ex. 9.

Following the CZA Program's presentation, Dave Copeland, Applicant's Corporate SH&E Environmental Manager, made a presentation. He described the Applicant as Fortune 250 industrial gas company that produces atmospheric gases, process gases, specialty gases, and

[4] The Department provides documents for the record at the public hearing solely to assist the public in making public comments. The Department does not have a burden of proof to develop a record during the public hearing.

surface technology. He stated that Applicant had global sales of $12.3 billion in 2014, and employs 27,000 persons in fifty countries. He stated that the Applicant has been on the Dow Jones Sustainability Index for the past twelve years, which is longer than any other chemical company. He described Applicant's CO2 production capacity nation-wide was over 5,000 tons per day at over twenty plants. He noted nearby CO2 plants in Hopewell, Virginia and Marmet, West Virginia. He stated that 50% of the CO2 that Applicant produces is used for food and beverages, 30% is used for manufacturing and water treatment, 10% is used to make dry ice, and 10% is used in chemical and oil and gas refining. He described the Project's manufacturing locations and how they would use approximately 3 acres zoned heavy industrial.

He described the manufacturing process that begins by compressing the Refinery's byproduct gas that contains 85% or greater of CO2, and 5-15% water and small amounts of contaminants. He described the manufacturing process that will purify the byproduct gas to produce the beverage grade CO2 that has to have the highest purity level. This process also would produce air emissions that he described, along with the proposed water and wastewater usage. He also described the N2 manufacturing process and how it will avoid the reliance of trucks to deliver the N2 to the Refinery.

He noted the economic impact from the Project would be an estimated $11 million in construction supplies and services, and the employment averaging 30 workers and up to 50 employees during the construction. He said there would be four full-time positions for the operations, and six to eight truck drivers. He stated that the Applicant would like to commence construction by October 1, 2015 following receipt of the CZA permit. He explained the environmental offsets would be based upon the replacement of the existing CO2 manufacturing, which would provide a demonstrated decrease in air emissions. Applicant's document with the presentation was marked as Applicant Ex. 1.

The first member of the public to speak was Bill Stout, Vice-President of Atlantic Constructors, which Applicant retained to be the construction manager for the Project. He spoke of how involved Applicant and his company are with safety, and confirmed the construction workers that Applicant stated would be used. He mentioned that his company also was the construction manager for Applicant's Hopewell project.

The second public speaker was Peggy Schultz, who spoke on behalf of the League of Women Voters of Delaware. Her comments were on the absence of CO2 emissions in the Application. She commented on how the Department never has required CO2 to be set forth in a CZA application or subject of any offset despite CO2 being a major greenhouse gas. She also commented on the Project's proposed use of electricity, which she indicated would be 2.69 Megawatt ("Mw") demand for the CO2 manufacturing and 1.104 Mw demand for the N2 manufacturing, for a total of approximately 4 Mw for the Project. She indicated that the Project's electricity usage would produce 20,000 tons of CO2 emissions a year, which she compared to the annual 6 tons CO2 emitted by an average American car. Her statement was marked as League of Women's Voters Ex. 1.

The third public speaker was Robert Carl, Vice-President of the Delaware Building Construction Trades Council, who supported approval of the Application based upon the Project's environmental and economic benefits. He also provided a written statement from Jim Maravelias, Vice President of the Delaware Building Construction Trades Council, which was marked as Delaware Building Construction Trades Council Ex. 1. This statement supported the Project as a "win-win" opportunity based upon its economic impact, which would also improve the environment in the Coastal Zone.

The fourth public speaker was Martin Willis, who voiced his support for the Application. He stated that his review of the 131 page Application found that it set the benchmark for a CZA

application and that he had attended four CZA application hearings in the past year. He noted the decreased emissions of several contaminants totaling almost 13,000 tons a year. He also mentioned the benefit from not having 100 trucks a month deliver N2 to the Refinery. He proceeded to review each of the Project's proposed impacts and that the Applicant had justified a CZA permit.

The fifth public speaker was Vincent Ascione, District Manager for Operating Engineers Local 542 and a representative of the Delaware Building Trades Council, who spoke how the Application would clean the environment. He supported the jobs that the Project would create.

The sixth public speaker was Elias Margonis, who asked about whether the air emissions were calculated or measured numbers. He also stated that it was his understanding that the CO2 proposed manufacturing and Air Liquide's would not really change.

Following the hearing the Applicant provided a July 29, 2015 an email response to the public comment that asked about the source of the Project's hydrogen emissions. The response stated that 95.6 tons per year was based on a maximum raw gas feed of 517 tons per day for 365 days based upon 1% hydrogen content by volume, or 506.6 ppm by weight. This email added that factual gas samples taken at the Refinery demonstrated that the raw gas had less than 1% hydrogen.

In an August 26, 2015 email, the Applicant responded to my request for further information on the N production, and when the current CO2 manufacturing would end, which is expected to occur by May 15, 2016.

I requested assistance from the Department's CZA experts, and the CZA Program provided the attached TRM that recommends issuance of a draft permit that the CZA Program prepared should the Secretary decide to issue a CZA permit for the Project.

III. DISCUSSION OF FINDINGS AND REASONS

A review of the record finds that it supports the issuance of a CZA permit for the Project, subject to the reasonable conditions recommended by the CZA Program in its draft permit. This decision is based primarily upon the Application, which provides all the information required by the CZA Regulations, including identifying all appropriate CZA required analysis of the Project's environmental impact and providing an environmental offset that more than offset the Project's negative impact from air emissions.

The Application shows that the Project's CO2 manufacturing would use a 304' by 493' area, and would require four enclosed structures, one approximately 6,200 square feet, two approximately 550 square feet each, and a small electrical enclosure. This would be within the oil refining complex and would not result in any material change in the land use or appearance. This manufacturing would use the Refinery's byproduct gas that contains at least 85% CO2, with 5-15% water and small levels of contaminants. The manufacturing process would purify the Refinery's byproduct gas in order to produce up to 517 tons per day of commercial grade liquid CO2, which would be sold: 1) for use in beverages, 2) for use to make dry ice, and 3) other industrial purposes such as at the Refinery. This proposed manufacturing would replace Air Liquide's existing CO2 manufacturing operations at the Refinery.

The Application indicates that the proposed N manufacturing would operate in an area 75' by 110,' and the manufacturing equipment would not be enclosed in any building. Instead, only a trailer-style building would be installed for a control room and office space. This manufacturing would use a standard cryogenic distillation process using up to 28,000 pounds per hour ("lb./hr.") of ambient air to produce up to 21,840 lb./hr. of N2. The Refinery uses N2 to provide an oxygen free gas to reduce the risk of fire in storage tanks and when purging pipes.

The Refinery now receives N2 in liquid form transported to the Refinery by approximately one hundred trucks a month. This source of N2 would no longer be needed with the Project's manufacturing of N2. Hence, the Project would reduce air emissions from the trucks traffic that deliver N2 to the Refinery, which would no longer need the approximately one hundred truck deliveries a month once the Project's N2 production begins to operate.

Based upon the Project's proposed manufacturing, I find that it is allowed under the CZA because it is not a prohibited use, which is either a "heavy industry use" or a use that is a "bulk products transfer." The Project's use of approximately three acres is well less than the twenty acres the CZA describes as a characteristic of a "heavy industry use." The Project also will not have most of the other heavy industry characteristics identified in the CZA, which include "smokestacks, tanks, distillation or reaction columns, chemical processing equipment, scrubbing towers, pickling equipment and waste treatment lagoons." The Project's few small storage tanks and exhaust vents are not comparable to the types of "heavy industry use" the CZA cites as examples, such as oil refineries and basic steel manufacturing plants. The CZA allows the Department to evaluate all the project's characteristics in making a determination of the type of manufacturing. On a whole, I find that the Project does not represent characteristics that are consistent with a heavy industry use.

The CZA requires consideration of the Project's environmental impact. The Project's environmental impact entails numerous considerations and these were fully reviewed in the Secretary's Environmental Assessment Report. Nothing in the record supports any change to this determination, as discussed in greater detail below.

The most significant negative impact from the Project would be from the CO2 manufacturing's air emissions. The CZA Regulations require that if the Project "will result in any negative impact," then Applicant is required to provide "an offset proposal that must more

than offset the negative environmental impacts associated with the proposed project or activity requiring a permit." *7 DE Admin. Code 101 §9.1.1*

Applicant voluntarily provided a proposed offset, which the Department accepted in the Secretary's Environmental Assessment Report on June 1, 2015. The proposed offset is based upon the lower air emissions in the Coastal Zone as a result of the Project displacing the air emissions from the current CO2 manufacturing by Air Liquide, which is expected to no longer operate because Delaware City Refining Company' contract will expire May 15, 2016 and Delaware City Refining Company wants to have Applicant produce the CO2 based upon the Project.

The Project's projected annual amounts of air emissions from the CO2 manufacturing and the proposed offset based upon the current CO2 manufacturing are set forth below:

pollutant	Tons/yr		
	Project's Proposed Emissions	Current Emissions	Project's reductions from current air emissions
Raw gas	179,398	192,194	12,796
Hydrogen	95.6	530.81	435
Carbon monoxide	20.08	107.56	87
Non-VOC	76.48	87.82	11
HAPs	2.48	4.52	2
VOC	2.63	6.79	4
Hydrogen sulfide	0.0	0.079	0.079
total	179,595.27		13,335.079

Thus, the proposed change in manufacturing from Air Liquide's manufacturing to the Project's would result in 13,335.079 tons less air emissions of pollutants in the Coastal Zone, which would improve the Coastal Zone's air quality.

The Applicant did not provide any offset for the N2 production, but then none is needed because N production does not harm the air quality from what already is in the ambient air. The Department recognizes that any air emissions from the separation of gases in ambient air do not require regulation by a permit issued under the Department's Air Quality Regulation 1102. Moreover, the elimination of air emissions from the monthly truck traffic from one hundred trucks delivering N2 means that the Project's N2 manufacturing process will improve the air quality within the Coastal Zone.

The Project's impact on the CZA's water supply supports finding that the Project will not harm the Coastal Zone's water supply. The Project's would require a peak use of 53 gallons per minute ("gpm"), which would be provided by a public water utility that does not use supply from the Coastal Zone. Hence, the Project would not have an impact on the Coastal Zone's water supply.

The Project's impact of the Coastal Zone's water quality from wastewater discharges also supports finding that the peak wastewater flow of 31.4 gallons per minute would not adversely impact the Refinery's wastewater treatment plant's ability to treat the Project's wastewater discharge to allowed limits that would not harm the Coastal Zone's water quality. The Project would use only 0.32 percent of the treatment plant's capacity, and this discharge of treated effluent to water quality standards would not have any material impact on the water quality in the Coastal Zone. The Project will provide improved stormwater management by constructing bio retention basins, which will provide better water quality discharges than the discharges from the

current CO2 plant. Thus, the Project will result in an improved water quality in the Coastal Zone by controlling stormwater better and thereby reducing its runoff.

The record shows that all waste materials associated with the Project will be disposed of outside the Coastal Zone at appropriate facilities/locations, which means the Project will not impact the Coastal Zone with any solid or hazardous waste disposal.

The record shows that the Project poses no threat to any natural habitat or any wildlife or fisheries.

The Secretary previously approved the Environmental Assessment Report, which is a preliminary decision on the impacts prior to hearing from the public. The public comments at the public hearing were all in favor of the Project except for the comment from the League of Women's Voters of Delaware, which wanted CO2 emissions to be included as a negative impact and be included as an offset and one person who asked questions. The Department's CZA experts reviewed this comment that sought to include CO2 emissions as a negative impact and determined that the Department's history of CZA regulation supported continued regulation that did not reflect CO2 emissions as a negative impact that should be offset. I find CZA Program's administration of the determination of negative impacts and offsets should not be disturbed in this proceeding. I further find that the CZA grants the Department discretion in the administration of the CZA in determining the negative impacts. Applicant provided an offset to the Department recognized negative impacts, and the Department accepted this offset. Nothing in the public comments warrants changing this determination as a proper administration of the CZA.

The CZA's second consideration is after the above environmental impact is the proposed economic effect. The Project will have a considerable immediate economic benefit with the anticipated October 1, 2015 commencement of construction and continuing through October

2016. The Project will have an estimated $11 million in construction budget, and will employ an average of thirty workers during the construction period with peak employment of fifty workers. When manufacturing begins, then the Project will require four full-time employees and seven truck drivers and the economic benefit from their wages and salaries, and the personal, corporate and gross receipt taxes. I find the positive economic benefit justifies a CZA permit as consistent with the CZA's purposes, which recognizes the economic benefit from new manufacturing in the Coastal Zone subject to the CZA environmental safeguards, as determined by the Department in the permit process. There was considerable public support for the economic benefits from the Project.

The third CZA consideration is aesthetics. The Project will be part of the existing Facility so there will be no real change in the appearance. Thus, the Project satisfies this CZA consideration.

The fourth CZA consideration is the number and type of supporting facilities required and their impacts on all other factors. The Project will require no support facilities.

The fifth consideration is the effects on neighboring land uses, and the Applicant states that there would be no adverse impacts on the closest residential property. I agree based upon the overall distances and lack of any change the Project from the existing Refinery's operations.

The sixth consideration is that Project will be consistent with county and municipal comprehensive plans, which Applicant satisfied by providing proof of New Castle County's approval of the Project's use consistent with local planning regulation.

Therefore I find that the Department should issue Applicant the CZA permit because the Project will allow a permitted manufacturing use that will result in reduced air emissions in the Coastal Zone. The approved manufacturing will allow the current CO2 manufacturing to end, which will reduce air emissions by over 13,000 tons annually that will improve the air quality in

the Coastal Zone. I find that a CZA permit should be issued, subject to the reasonable permit conditions included by the CZA Program in its draft permit to ensure that the permit is consistent with the CZA, and the Department's regulations and policies.

IV. CONCLUSIONS

I find and conclude that the record supports approval of the Application and issuance of the CZA permit, as prepared by the CZA Program, and recommend that the Secretary adopt the following concluding paragraphs:

1. The Department has jurisdiction and statutory authority to issue a CZA Permit to the Applicant subject to reasonable permit conditions included in the draft permit deemed appropriate and consistent with the CZA's purposes;

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

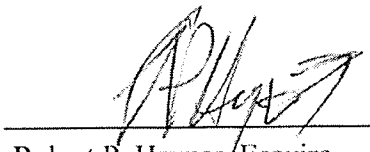
3. The Department held a public hearing in a manner required by the law and its regulations;

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

5. The Department shall issue a permit to the Applicant in the form and manner proposed by the CZA Program in its draft permit;

6. The Department carefully has considered all the factors to be considered in making a decision on a CZA permit application under the CZA and its regulations; and

7. The Department shall publish legal notice of this Order and otherwise provide notice to all affected persons in a manner consistent with the public notice required by the law and regulations, and shall publish the Order on the Department's web site.



Robert P. Haynes, Esquire
Senior Hearing Officer

Technical Response Memorandum

Praxair, Inc. Coastal Zone Permit

TO: Robert P. Haynes, Esq., Senior Hearing Officer

FROM: Philip J. Cherry, Director, Division of Energy and Climate

DATE: August 27, 2015

You have asked for a Technical Response Memorandum specifically addressing concerns expressed by the League of Women Voters, by Peggy Schultz.

In her testimony at the public hearing, Ms. Schultz observed that carbon dioxide emissions were not declared in Praxair's CZA permit application. Ms. Schultz also references that "....Section 9.1.1 of the Regulations require offsets for any negative environmental impacts. It is clear that carbon dioxide emissions are themselves negative environmental impacts. It is imperative that the Coastal Zone Act be implemented in a manner that includes carbon dioxide as a harmful pollutant. This is not a policy decision. It's simply a matter of enforcement of law of the land."

Response: I have either directly administered the Regulations Governing Delaware's Coastal Zone or supervised other staff who served as the Coastal Zone Act Administrator for the past 15 years. I was the principal author of the regulations back in 1998 that were ultimately adopted by the Coastal Zone Industrial Control Board. I have personal knowledge of all but a few Coastal Zone permits and status decisions that have been issued since the regulations were adopted. Since that time, DNREC has never required offsets for Carbon Dioxide (CO_2), as we typically do for other criteria pollutants such as Oxides of Nitrogen (NOx), Sulfur Dioxide (SO_2), Particulates (PM) or Volatile Organic Compounds (VOC's). This is due to several reasons as follows:

A. CO_2 was not legally considered a contaminant at the time the regulations were adopted and the concept of offsets was developed.

B. CO_2 was not considered in the goals and indicators effort conducted in the late 1990's, nor was climate change or Sea Level Rise (SLR).

C. While it's clear CO_2 is now considered a contaminant of global significance, its release in Delaware's air is not a health concern for Delaware and does not significantly impact air or water quality in Delaware's Coastal Zone, or attainment of national or state air quality standards. Its release into the environment has no effect on the immediate surrounding community, as is the case for pollutants like NOx, SO_2, PM and VOC's. The Coastal Zone program, therefore, treats CO_2 differently than other pollutants, and has since the regulations were adopted.

D. We fully recognize that CO_2 emissions contribute to global warming, ocean acidification, SLR and other Climate concerns, some of which can impact our Coastal Zone; however, to make a change now, 17 years since promulgation of the regulations, would require a formal amendment of the regulations, and we are reluctant to take that action at this time.

E. Unlike many other contaminants for which we require offsets, there is no commercially available treatment technology for CO_2, making it difficult for industries in the Coastal Zone to impact their CO_2 emissions, other than to reduce the combustion of fuels, which may or may not be possible.

STATE OF DELAWARE
DIVISION OF ENERGY & CLIMATE
1203 COLLEGE PARK DRIVE, SUITE 101
DOVER, DELAWARE 19904

Office of the Secretary
David S. Small

Phone: (302) 735-3480
Fax: (302) 739-1840

MEMORANDUM

TO: David S. Small, Secretary

THRU: Philip J. Cherry, Director

FROM: Kevin F. Coyle, AICP CEP, Principal Planner KFC

DATE: August 27, 2015

SUBJECT: Praxair, Inc. CZA Permit Application

The Coastal Zone Act Program has reviewed the file and the public comments submitted regarding the CZA Permit Application from Praxair, Inc. The Program has no further comments or concerns. We recommend that the CZA Permit be issued.