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# **Indeck Niles, LLC**

## **RESPONSE TO COMMENTS DOCUMENT**

**January 4, 2017**

**PERMIT No. 75-16**

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**Rick Snyder, Governor**

### **Air Quality Division Michigan Department of Environmental Quality**

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## I. PUBLIC PARTICIPATION PROCESS

Permit to Install (PTI) application No. 75-16, for Indeck Niles, LLC (Indeck), proposes installation and operation of a natural gas fired combined-cycle power plant for location at 2200 Progressive Drive, Niles, Michigan. The public participation process involved providing information for public review including a Fact Sheet, a Proposed Project Summary, and proposed permit terms and conditions. It also involved a public comment period, an informational meeting, a public hearing, and the receipt of written and verbal public comments on the Air Quality Division's (AQD's) analysis of the application and the proposed permit.

On November 7, 2016, copies of the Notice of Air Pollution Comment Period and Public Hearing, the Fact Sheet, the Proposed Project Summary, and the draft terms and conditions were placed on the Michigan Department of Environmental Quality (MDEQ or Department), AQD Home Page (<http://www.michigan.gov/air>). Also on that date, the AQD mailed 46 letters to persons who had expressed interest on the previously proposed applications by Indeck and had provided a complete address. In addition, a notice announcing the Public Comment Period, Public Informational Meeting, and Public Hearing was placed in the *Niles Daily Star*. The notice provided pertinent information regarding the proposed action; the locations of available information; a telephone number to request additional information; the date, time, and location of the Public Informational Meeting and Public Hearing; the closing date of the Public Comment Period; and the address where written comments were being received.

The Informational Meeting was held on December 14, 2016, at Northside Child Development Center, 2020 North 5<sup>th</sup> Street, Niles, Michigan. This location was selected due to its proximity to the facility and the size of the room. Approximately 75 people attended the Informational Meeting. A panel of representatives from the AQD provided information and answered questions regarding the proposed project. The meeting began at 6:00 p.m. and concluded at approximately 7:00 p.m.

The Public Hearing was held on December 14, 2016, at Northside Child Development Center, 2020 North 5<sup>th</sup> Street, Niles, Michigan. The hearing began at 7:00 p.m. with Kameron Jordan as the Hearings Officer and Lynn Fiedler as the decision maker. Only comments on the proposed permit action were received. In addition, staff of the AQD was available outside the room to answer questions. Approximately 75 people were in attendance at the Public Hearing with 13 providing oral comments. The Public Hearing concluded at approximately 7:45 p.m.

A total of approximately 153 written comments were received during the Public Comment Period and the hearing.

The remainder of this document is a listing of the significant comments received during the public comment period and hearing regarding the proposed permit and the Department's response. The first section discusses the comments received that resulted in changes to the final permit terms and conditions and the basis for each change. The last section discusses the Department's response to all other significant comments that did not result in changes to the final permit.

## II. SUMMARY OF COMMENTS RESULTING IN CHANGES TO THE PERMIT

### Comment

On page 11, the term “NMHC” is not defined. Please define this term in the permit.

### AQD Response

This is correct, NMHC was not defined. NMHC is the acronym for nonmethane hydrocarbon.

### Condition Change

**The AQD has added a footnote defining NMHC to both locations it appears, pages 11 and 16.**

## III. SUMMARY OF SIGNIFICANT COMMENTS

### **A. Public Health and Environment Concerns**

#### Comment

To give perspective, compare the number of motor vehicles it would take to equal the same amount of emissions from this proposed power plant.

#### AQD Response

Comparing motor vehicle emissions to emissions from a stationary source involves a number of variables and is not an apples-to-apples comparison. These variables include the emissions profile of cars, the amount of miles driven by the car, and the speed at which it is driving. Even accounting for these variables, the calculations would only account for the magnitude of emissions, not their dispersion. Emissions from the power plant will enter the ambient air at heights well above ground level and further spread out, lessening the impacts at any one point.

Currently, the typical car on the road in the U.S. is 11.5 years old. Using emission factors for model year 2005 and assuming a speed of 60 miles per hour, the emissions of nitrogen oxides (NO<sub>x</sub>) from a single car are 0.0265 lb/hr. The emission limit for each combustion turbine generator (CTG)/heat recovery steam generator (HRSG) train during baseload conditions is 38.1 lb/hr of NO<sub>x</sub>. Therefore, roughly 1,440 cars may equate to a single CTG/HRSG, all operating for an entire hour. Using the same assumptions, the carbon monoxide (CO) emissions from a single car are 0.529 lb/hr. The emission limit for each CTG/HRSG train during baseload conditions is 24.7 lb/hr of CO. Therefore, roughly 47 cars may equate to a single CTG/HRSG, all operating for an entire hour.

#### Comment

There were some concerns about the term “major source of air pollutants” and what that means to the residents of the area. In particular 2,000 tpy of CO was called out as a pollutant of concern. It was also commented that the emissions need to be looked at for when they are not operating at baseload all of the time, because that may not be their reality.

AQD Response

Documents were made available that discussed the review completed for the application. Within these documents, the term “major source of air pollutants” was used. Also within these documents, total potential emissions from the proposed plant were provided.

Air regulations do not set firm upper bounds for the most a facility could propose to emit; they do, however, provide thresholds which change the severity of the review required. The term “major source of air pollutants” denotes that the proposed plant has crossed one of those thresholds and has triggered a more severe and intensive review. It does not mean that level of emissions will be considered hazardous to human health. The thresholds and how the emissions are reviewed against health-based standards are discussed in more detail below.

Fossil fuel-fired steam electric plants of more than 250 million British Thermal Units per hour (MMBTU/hr) heat input have a threshold of 100 tons per year (tpy) to trigger the Prevention of Significant Deterioration (PSD) rules. Only one new source review pollutant over this threshold is required to trigger PSD review. Below is a table demonstrating this:

**Table 1: Proposed Emissions Evaluated Against Initial PSD Triggering Threshold**

Pollutant	Estimated Emissions (tpy)	Subject to PSD?
NO <sub>x</sub>	494	Yes
CO	2,009	Yes
Particulate Matter (PM)	91.2	No
Particulate Matter less than 10 microns in diameter (PM10)	181	Yes
Particulate Matter less than 2.5 microns in diameter (PM2.5)	181	Yes
Sulfur Dioxide (SO <sub>2</sub> )	103	Yes
Lead	0.00363	No
Volatile Organic Compounds (VOCs)	948	Yes
Sulfuric Acid Mist (H <sub>2</sub> SO <sub>4</sub> )	40.2	No

Once a location is determined to either be an existing location with potential emissions over the triggering threshold of 100 tpy or if the project triggers the location to be over the triggering threshold, the threshold is lowered to a new triggering threshold, known as the PSD Significant Emission Rate. Below is the table evaluating this for the other new source review pollutants:

**Table 2: Proposed Emissions Evaluated Against PSD Significant Values**

Pollutant	Estimated Emissions (tpy)	PSD Significant Emission Rate (tpy)	Subject to PSD?
PM	91.2	25	Yes
Lead	0.00363	0.6	No
H <sub>2</sub> SO <sub>4</sub>	40.2	7	Yes
GHGs as CO <sub>2</sub> e*	4,302,486	75,000	Yes

\* A recent decision by the Supreme Court (*Utility Air Regulatory Group v. U.S. EPA*), No. 12-1146 (June 23, 2014) determined that PSD review for GHGs is only required if one or more of the other regulated new source review pollutants exceeds a PSD threshold.

The values shown in Table 1 for NO<sub>x</sub>, CO, and VOCs all include startup and shutdown emissions. All potential emissions and operating scenarios must be evaluated by the company. Indeck is proposing to operate this facility as a baseload plant, which means that they plan to be operating most of the time with occasional shutdowns. NO<sub>x</sub>, CO, and VOCs will be emitted from the CTG/HRSG trains. Startup and shutdown emissions are generally higher than baseload emissions because both the process and/or control equipment may not be operating at peak performance and the control technology may not yet be operational. Indeck proposed a total of 500 hours for startup and shutdown events, using the worst case emission rate between startup and shutdown for the calculations. The following table shows the difference between baseload operation all year round (8,760 hours per year) and 500 hours of startup and shutdown with the rest in baseload operation (8,260 hours per year).

**Table 3: Comparison Between Estimated Emissions in Different Operation Types for the CTG/HRSG Trains Only**

Pollutant	Baseload Emissions at 8,760 hours/year (tpy)	Startup/Shutdown Emissions at 500 hours/year (tpy)	Baseload Emissions at 8,260 hours/year (tpy)	Total Emissions Including Startup/Shutdown Emissions (tpy)
NO <sub>x</sub>	318	143	300	443
CO	207	1,769	195	2,009
VOCs	118	832	111	948

The more stringent review that the emissions triggered includes a demonstration that the proposed emissions will meet the applicable National Ambient Air Quality Standards (NAAQS). These standards define the maximum concentration of certain air emissions in the breathing zone that would protect the health of the most sensitive individuals, including those with heart, respiratory, neurological, and asthma problems. The emissions from the proposed facility were evaluated, compared to the standards, and found to be below them (see Table 4 below).

**Table 4: NAAQS Analysis**

Pollutant	Averaging Period	NAAQS (µg/m <sup>3</sup> )	Facility + Offsite Sources Maximum Concentration (µg/m <sup>3</sup> )	Secondary (µg/m <sup>3</sup> )	Background Concentration (µg/m <sup>3</sup> )	Total Concentration** (µg/m <sup>3</sup> )	Below NAAQS?
NO <sub>2</sub>	1-Hour	<b>188</b>	84.9	--	76.4	<b>161.3</b>	Yes
	Annual	<b>100</b>	7.2	--	15.7	<b>22.9</b>	Yes
CO	1-Hour	<b>40,000</b>	6,764.6	--	2,320.0	<b>9,084.6</b>	Yes
	8-Hour	<b>10,000</b>	1,742.3	--	1,508.0	<b>3,250.3</b>	Yes
PM10	24-Hour	<b>150</b>	10.1	--	29.0	<b>39.1</b>	Yes
PM2.5*	24-Hour	<b>35</b>	5.8	1.31	22.6	<b>29.7</b>	Yes
	Annual	<b>12</b>	1.1	0.05	9.6	<b>10.8</b>	Yes
SO <sub>2</sub>	1-Hour	<b>196</b>	15.4	--	27.1	<b>42.5</b>	Yes
	3-Hour	<b>1,300</b>	504.7	--	24.6	<b>529.3</b>	Yes

\* Includes secondary PM2.5 formation from precursors of NO<sub>x</sub> and SO<sub>2</sub>.

\*\* This is the total impact from the facility plus background.

The NAAQS analysis was performed using the worst-case scenarios. Indeck's worst-case potential emissions may be over 2,000 tpy of CO; however, the analysis determined that the impacts would still comply with the NAAQS at about 23 percent of the 1-hour standard and about 33 percent of the 8-hour standard. Even with the higher emissions during startup and shutdown, the evaluation for all criteria pollutants shows that public health is protected.

The permit conditions reflect this review and contain federally enforceable restrictions on the amount of hours for startup and shutdown. Indeck would be out of compliance if they exceeded the 500 hour restriction.

## **B. Emergencies and Safety Concerns**

### Comment

Questions were raised about the inherent dangers of the plant.

### AQD Response

There are no expected dangers associated with a combined-cycle natural gas plant. However, if you feel there is a pollution emergency, in addition to your local police and fire departments, you may call the MDEQ Pollution Emergency Alerting System (PEAS) at 1-800-292-4706. This telephone number is staffed 24 hours per day and the information received is quickly forwarded to the appropriate agencies.

## **C. Dispersion Modeling and Air Toxics**

### Comment

Comments were received discussing the local areas temperature inversions. There was concern that the meteorological data used in the modeling was not representative of the local area, and that the emissions would come right back down to the ground instead of dispersing as predicted. A year of monitoring meteorological data in the area was requested. Comments about the impact of steam or water vapor and visibility on local plant growth, nearby schools, people driving cars, and the airport were also received.

### AQD Response

The burning of natural gas creates steam or water vapor. By definition, neither is considered to be a visible emission. The amount of steam or water vapor produced is dependent upon the temperature of the gas. The hotter the gas, the more water vapor it can contain. The exhaust gas exits the stack at elevated temperatures, and when it meets the cooler ambient air, some of the water vapor condenses. As the exhaust gas and ambient air further mingle, the moisture content and temperature of the air equilibrates and the condensed moisture becomes invisible water vapor again, dissipating the visible moisture that condensed.

To demonstrate that the United States Environmental Protection Agency (EPA) model is accurately handling localized inversions, MDEQ modified the 5-year South Bend meteorology data to lock in a low level permanent inversion height of 60 meters, which is just a few feet higher than the proposed turbine stacks. The South Bend data is collected between 15 and 20 miles from the Indeck facility and the wind patterns are considered representative of the Niles area. South Bend meteorology data is considered high quality because it captures the extreme low wind speeds associated with inversion episodes. The data collected at other area airports, further away than South Bend, do not capture the lower wind speeds.

The new modeled results showed little difference between worst case impacts, using the modified data, versus the unmodified data with actual inversion layer heights. As such, it is demonstrated that air quality impact model is working, as designed, and that the worst case impacts, considering all natural and unrealistic meteorological conditions, will not cause or contribute to any violation of air quality standards. Nor is it anticipated that there will be any visibility impairment as a result of the facility.

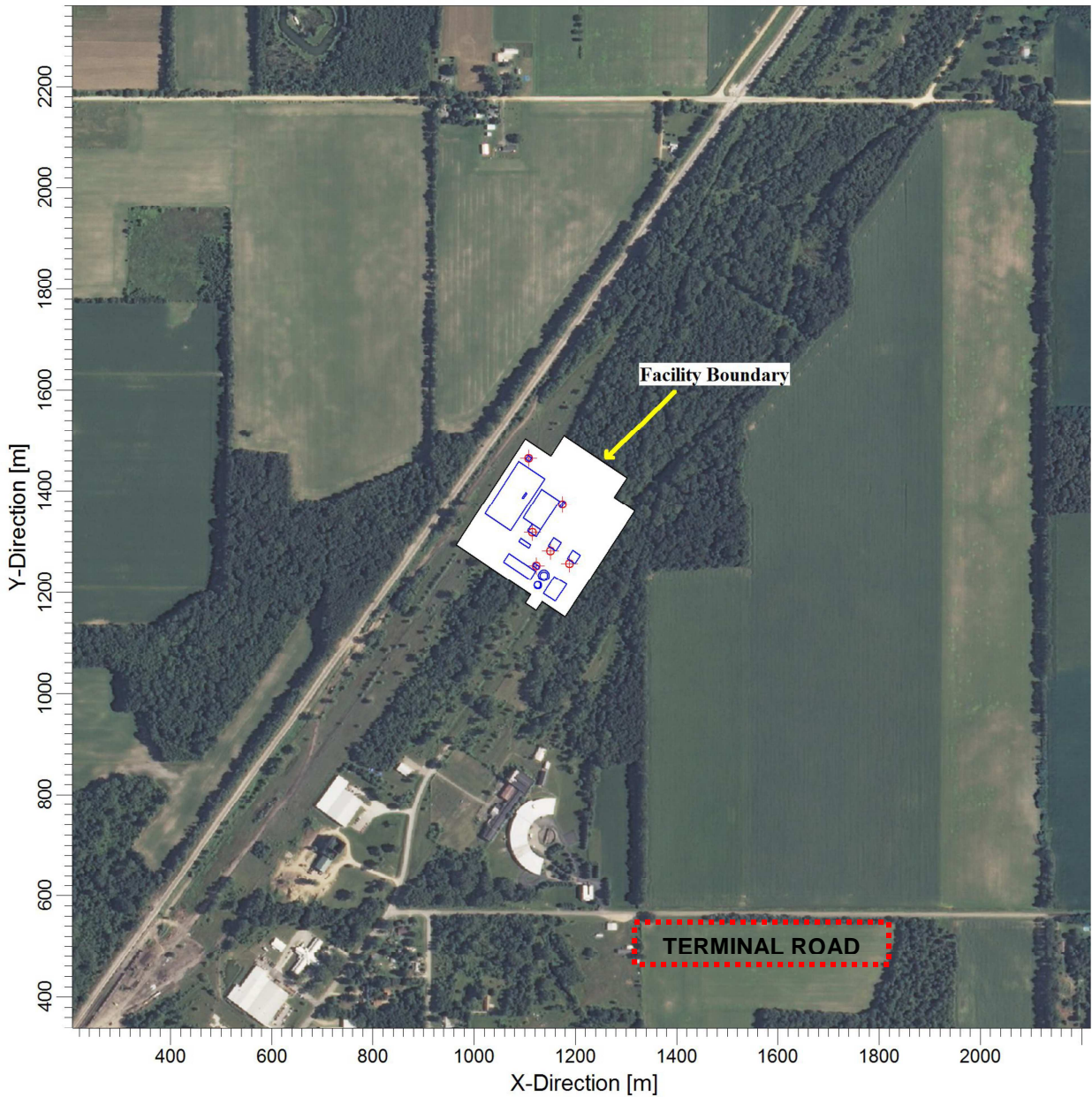
#### Comment

What is the plot of land it is going to sit on, will it shift at all? Will it go more toward White Street or be more toward the high school and the airport?



AQD Response

Indeck has already purchased its proposed location at 2200 Progressive Drive. Their application included dispersion modeling based upon this location and specific building and exhaust stack designs. Any changes to the location and/or designs would result in Indeck needing to submit a new application to the AQD. Below is a map of the proposed site:



### Comment

A commenter lives east of the site of the plant and believes that with prevailing NW winds the air quality of their community will be affected negatively. The white paint of the house gets dirty, which they believe is from Chicago pollution. Other plants also have to comply with the same rules, but they are still emitting particulate matter that is spreading over their area.

### AQD Response

There are multiple kinds of particulate matter. The larger, filterable particulate matter is known as PM and does not have a NAAQS. PM is typically particulate matter that is visible. It not only comes from industrial facilities, but can also be produced in other ways such as farming or dust from roadways. Since the proposed plant is a natural gas plant, effects of PM are expected to be minimal.

The other kinds of particulate matter are smaller and usually not visible; they are less than 10 microns in size (PM10) and less than 2.5 microns in size (PM2.5). Because of their small size, they are able to infiltrate deeper into the lungs, and are therefore more of a concern than PM when inhaled. The NAAQS have been set to protect public health with these issues in mind. They define the maximum concentration of certain air emissions in the breathing zone that would protect the health of the most sensitive individuals, including those with heart, respiratory, neurological and asthma problems. Both the PM10 and PM2.5 evaluations for the proposed facility meet the NAAQS and demonstrate that public health is protected.

## **D. Air Toxics and Risk Assessment**

### Comment

Not only should criteria pollutants be reviewed, but also hazardous air pollutants, especially formaldehyde and benzene, which are two known human carcinogens. During air inversions, the pollutants are deposited within a short geographic region around the plant and can cause some serious environmental, as well as human health, concerns. These should be addressed by the MDEQ.

### AQD Response

Other than the criteria pollutants, the AQD reviewed formaldehyde, benzene, and other air contaminants potentially emitted from the facility.

Michigan was one of the first states in the United States to develop rules for regulating air toxics, and its rules have been used as a model by other states. The AQD maintains a list of health-based screening levels for some air contaminants, and evaluates others on a site-specific basis. Below is a table specifically for benzene and formaldehyde:

**Table 5: TAC Impacts and Screening Levels**

<b>TAC</b>	<b>Averaging Period (µg/m<sup>3</sup>)</b>	<b>Screening Level (µg/m<sup>3</sup>)</b>	<b>Screening Level Type</b>	<b>PAI (µg/m<sup>3</sup>)</b>	<b>Percent of Screening Level</b>
Benzene	Annual	0.1	IRSL	2.1E-03	2.09%
Formaldehyde	24-hr	30	ITSL	3.1E-01	1.05%
	Annual	0.08	IRSL	2.3E-02	28.78%

No air contaminant was determined to be higher than 55 percent of its health-based screening level, and the air contaminant with the highest percentage was evaluated in a highly conservative manner.

**E. Odor Concerns**

Comment

What type of odors will be made by the burning of natural gas and what is its anticipated impact zone? Concerns were also raised about odor impacting quality of life.

AQD Response

Typically, there is no distinct odor from the burning of natural gas. Odor is purposely added to natural gas to help detect leaks. If a natural gas odor is detected, then the local natural gas supplier should be contacted to help determine the source of the potential leak.

If an odor other than that of natural gas is detected, then please contact Ms. Amanda Chapel of the MDEQ, AQD, Kalamazoo District Office. During business hours, she can be reached at 269-567-3551. During non-business hours, one should contact the PEAS at 1-800-292-4706.

**F. Best Available Control Technology (BACT) Review**

Comment

The draft permit proposes BACT limits for the natural gas-fired combustion turbine generators with a heat recovery steam generator for NO<sub>x</sub> at 3 parts per million (ppm) at 15 percent oxygen on a 24 hour rolling average and CO and VOC at 4 ppm at 15 percent oxygen on a 24 hour rolling average. A review of EPA's RACT/BACT/LAER Clearinghouse (RBLC) provides examples of recently issued PSD permits with BACT limits for NO<sub>x</sub> at 2.0 ppm and CO/VOC at 2.0 ppm.

The Fact Sheet did not provide the substantive rationale as to why MDEQ selected a NO<sub>x</sub> and CO/VOC limit that is higher than what is currently being permitted by similar sources with similar control technology. Indeck appears to be claiming that a reduction in the BACT limit to what is being permitted by other permitting authorities is not economically feasible. EPA believes that Indeck has failed to demonstrate this. In the absence of unusual circumstance, the presumption is that sources within the same category are similar in nature, and that cost and other impacts that have been borne by one source may be borne by another similar source. A PSD permit recently issued to Virginia Electric and Power Company- Greenville Power Station on June 17,

2016, has a NO<sub>x</sub> BACT limit of 2.0 ppm at 15 percent oxygen on a one-hour average, and 1.6 ppm CO BACT limit and 1.4 ppm VOC limit. The Virginia facility would experience analogous incremental increases in costs as the BACT limits are reduced, and moreover, the permitting authorities in these situations have found these costs and operational conditions to be feasible.

Indeck claimed lower NO<sub>x</sub>, CO, and VOC limits cannot be selected as BACT because it has not been demonstrated that the limits can be consistently and economically achieved over the life of the units. However, the absence of emissions data over the complete life cycle of a project is not a sufficient reason to eliminate an option as BACT. While the response cites several instances of NO<sub>x</sub> non-compliance at a similar facility, the applicant has not indicated how the source differs from other facilities listed in the RBLC that have operated in compliance with the lower limits.

Therefore, MDEQ should reduce the BACT limits for NO<sub>x</sub> to 2.0 ppm on a one-hour average, and at least 1.4 ppm for VOC and 1.6 ppm for CO emissions.

#### AQD Response

A BACT review is a vital component of a PSD analysis and must be performed by the applicant according to the Top-Down BACT approach, contained in the U.S. EPA Draft New Source Review Workshop Manual – Prevention of Significant Deterioration and Nonattainment Area Permitting (October 1990) (hereafter, the Manual).

The 5 steps of the Top-Down BACT approach are as follows:

1. Identify All Control Technologies
2. Eliminate Technically Infeasible Options
3. Rank Remaining Control Technologies by Control Effectiveness
4. Evaluate Most Effective Controls and Document Results
5. Select BACT

Steps 1-4 mainly deal with the selection of control technology, though some discussions about emission limits may relate. Step 5 is the conclusion of what technology was chosen and what emission limit corresponds to the specific equipment at the specific location.

Indeck followed the Top-Down BACT approach to determine their site-specific results. They concluded that dry low NO<sub>x</sub> burners with selective catalytic reduction (SCR) were appropriate for NO<sub>x</sub> control and an oxidation catalyst was appropriate for CO and VOC control. Both were the highest ranking technology under Step 3. Indeck did not rank the same control technology multiple times with different emission rates; the technology was ranked based upon accepted reduction efficiencies.

Further discussion of what emission rate is achievable was provided in Step 5. Indeck proposed 3 ppm at 15 percent oxygen for NO<sub>x</sub> on a 24-hour rolling average, 4 ppm at 15 percent oxygen for CO on a 24-hour rolling average, and 4 ppm at 15 percent oxygen for VOC. They proposed to use Continuous Emission Monitoring Systems (CEMS) to demonstrate compliance with the NO<sub>x</sub> and CO emission limits and to test on a periodic basis to demonstrate compliance with the VOC emission limit. Indeck stated that compliance with a lower limit may not be practical due to limitations on CEMS accuracy at low concentrations. If a concentration

is below what can be detected through an emissions test or CEMS, then it would be impossible to demonstrate compliance. Generally, it is also advisable that companies do not take emission limits exactly at their optimal lowest emitting rate because of small variations in statistical evaluation of test data and normal variations in operation. The AQD found their proposed limits and explanation to be consistent with other Michigan permits and to be reasonable from a practical standpoint.

The same discussion points used for determining the appropriate control technology may also be used to determine the appropriate emission limit. BACT does not have to match the most stringent reduction, but may take other factors into consideration.

On page B.7 of the Manual, EPA states that in cases where the level of control in a permit is not expected to be achieved in practice (e.g., a source has received a permit but the project was canceled, or every operating source at that permitted level has been physically unable to achieve compliance with the limit), and supporting documentation showing why such limits are not technically feasible is provided, the level of control (but not necessarily the technology) may be eliminated from further consideration.

Indeck provided information showing that most plants with lower emission limits were not in operation or had not yet done a compliance demonstration. Of the four that were operating, two had potential exceedances and the other two may not have all the data reported yet.

The statement that follows the above in the Manual is that a permit is usually sufficient justification. The key word is *usually*, which was left out of the commenter's quote. "Usually" leaves room for a case-by-case analysis and the ability to logically remove a RBLC entry from consideration.

EPA also quoted a line from the Manual about costs being borne by one source also being borne by another source. This statement is in reference to Step 4, meaning that if one facility installed a control technology that would cost \$4,000 per ton of reduced pollutant, then another facility must not rule out a \$4,000 per ton of reduction for the same pollutant based upon only economic means. If the number one ranked control technology is chosen, then the economic, energy, and environmental impacts of that control technology need not be reviewed. Those impacts are used to rule out the number one ranked control technology and to justify selecting a lower ranked technology. Indeck proposed the number one ranked control technology for NO<sub>x</sub>, CO, and VOC; and therefore, did not review those impacts for the control technology. However, as stated above, that does not mean that they cannot utilize those discussion points for picking an appropriate emission limit.

Indeck was not attempting to determine that a control alternative was inappropriate; however, they were stating that lowering the emission limit below what was proposed would have other consequences (such as increased ammonia emissions and added expense) and might not even be achievable. By selecting the top control option, they have already accepted the cost borne by other similar facilities.

Indeck received vendor quotes from three different turbine manufacturers, and all three guaranteed 3 ppm for NO<sub>x</sub> and 4 ppm for CO and VOC over multiple operating temperatures. In Example 1 for Simple Cycle Gas Turbines on page B.64 of the Manual, the applicant established an emission limit based upon discussions with SCR vendors.

Indeck is proposing to use “H” or “J” class turbines, which fire at higher temperatures than many recently installed and existing turbines (“F” class). A higher firing temperature will yield higher uncontrolled NO<sub>x</sub> emissions. Even if the control technology achieves the same percent reduction for both class types, a higher inlet emission rate will yield a higher outlet emission rate. Some of the RBLC entries with lower emission rates are for “F” or “G” class turbines; therefore, merely looking at the MW output of the plant or the MMBtu heat input for the turbines is not a deep enough comparison to justify a more stringent emission rate.

As part of the applicant’s review, and the AQD’s verification of that review, the EPA-maintained RBLC is checked to compare what other companies are doing across the country. When a PSD permit is issued, it is required that the permitting authority add the permit entry to the RBLC. A RBLC search represents a snapshot of the data that has been submitted and is available at that time. The AQD reviewed the RBLC right before going out to public comment for any additions to what was previously reviewed. It was not until after the close of the public comment period for Indeck that the information on the Virginia facility became publicly available in the RBLC.

The most recently issued turbine permit in the RBLC went through lowest achievable emission rate (LAER) for NO<sub>x</sub>. It is for Stonegate Power, LLC – Middlesex Energy Center, LLC, RBLC ID NJ-0085. It is a smaller emitting project, with smaller sized equipment. Its NO<sub>x</sub> LAER limit is 2.0 ppmvd at 15 percent oxygen on a 3-hour rolling average based on 1-hour blocks; CEMS required. This limit is LAER, and yet, it has a less stringent averaging time than the BACT limit the commenter proposed. The CO limit is 2.0 ppmvd at 15 percent oxygen on a 3-hour rolling average based on 1-hour blocks; however, it is associated with a VOC LAER limit of 2.0 ppmvd at 15 percent oxygen on a 3-hour rolling average based on 1-hour blocks. CO and VOC are both products of incomplete combustion and they are similarly controlled on equipment such as this. If VOC must meet LAER, then CO will be lower as well, which means that the BACT limit for CO may be artificially lower than would have been chosen had VOC not been LAER.

The next most recently issued turbine permit in the RBLC is the Virginia Electric and Power Company facility that was referenced in the comment. The heat input for the turbine and the duct burner is less than that permitted for Indeck. Control technology achieves a percent reduction of the incoming pollutant loading. If the uncontrolled emissions are higher, then it would stand to reason that the outlet emissions would also be higher. With more heat input, NO<sub>x</sub>, CO, and VOC are predicted to have a higher inlet emission rate.

Neither of these two facilities has been built. Generally, it takes 2-3 years to get a plant of this size from permitting to initial operation. Part of the BACT analysis is to select technology that has been demonstrated in practice. The control technologies have been demonstrated in practice, but the lower emission limits have not on a consistent basis.

The RBLC entries do not show a turbine of the same class and size that is in operation and demonstrating compliance with the lower emission rates. RBLC entries also do not always have all the information needed to make perfect comparison. Many of the other entries have lower heat inputs, which would greatly affect the uncontrolled emission rates. Also, the other companies may have received vendor quotes, which may be how they proposed their BACT emission limits; however, those units may be different class types. It is difficult to tell by the information provided.

In conclusion, Indeck followed the Top-Down BACT approach and provided justification for their conclusions. The AQD believes that Indeck provided adequate case-by-case justification that the limits in the permit are appropriate for this facility.

## **G. Permit Requirements**

### **Testing**

#### Comment

The draft permit does not specify test methods for determining compliance with the various permit limits. Each applicable permit condition should specifically identify the respective test method that the source will use to demonstrate compliance with each emission limit in the permit.

#### AQD Response

Test methods change over time and some specific situations require that alternate test methods be used.

Specifying test methods in the permit conditions could lead to a situation where a company has to modify the permit in order to use a better test method. This could result in non-compliance if the permit modification cannot be processed in time for the test to be conducted within the specified timeframe.

The permit requires Indeck to submit test plans to the AQD for approval prior to conducting emission testing. In this way, the AQD ensures that the most up to date and appropriate test methods will be used in order to properly determine compliance with the emission limits.

The AQD is reevaluating including specific test methods in the permit conditions and flexible language that will address these concerns.

#### Comment

EPA has concerns about only "test protocol" being given as the time period/operating scenario in the draft permit. An emission limit of pounds per hour, tons per year, or grains per dry standard cubic feet are unenforceable and not protective of the environment if they are not associated with an appropriate time averaging period. Further, the Part 70 regulations found in Section 70.6(a)(3)(i)(B) and (c)(1), requires periodic monitoring, including the use of test methods, sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit when the applicable requirement does not require period testing or monitoring.

#### AQD Response

The permit contains averaging times for all emission limits that have associated continuous recordkeeping compliance methods. Test protocol is only used for emission limits where testing is the method of compliance. Averaging times and test protocol are both listed for emission limits that have a required test and associated continuous recordkeeping compliance methods.

Test methods vary in the time period needed to do the test, and not all of them are easily quantifiable. For example, certain PM10 and PM2.5 test methods are based upon the volume of exhaust gas rather than a set period of time.

All tests for test-only compliance demonstrations have an initial test deadline and are also required to be repeated once every five years. The repeat test was intended to comply with the required periodic monitoring for the Part 70 regulations. Every test, whether initial only or repeated, will have to comply with an AQD-approved test method, and test protocol is associated with the footnote: Test Protocol shall specify averaging time. For example, one standard is three one-hour tests, but low concentration gases may require a longer time period for the collection of a valid sample. In these cases, specifying an averaging time in the permit conditions that may not match the sampling time of the test method being used would lead to an inability to determine compliance with the emission limit on the averaging time specified in the permit conditions.

Specifying averaging times in the permit conditions could lead to a situation where a company has to modify the permit to change the averaging time to match the test method being used. This could result in non-compliance if the permit modification cannot be processed in time for the test to be conducted within the specified timeframe.

The AQD is reevaluating including specific emission limit averaging times in the permit conditions and flexible language that will address these concerns.

## **H. Enforcement**

### Comment

A commenter stated that after the plant is built, it will be too late to fix problems. They stated that violation letters or fees are not a deterrent to non-compliance for companies.

### AQD Response

A facility is required to comply with all State and Federal rules and regulations, as well as the conditions stipulated in their permit. The AQD is responsible for assuring compliance with the Clean Air Act, Public Act 451, and the rules and regulations promulgated under Act 451. The AQD takes this responsibility very seriously and through its network of district air inspectors and administrative staff endeavors to ensure that every facility is in full compliance with all applicable air regulations. This is carried out through an ongoing presence of diligent oversight including: inspections, response to citizen complaints, and office review of required company submittals. Lesser violations are handled within the district and resolved through cooperative actions. Those violations that rise to the level of High Priority Violation are referred for enforcement.



## **I. Public Participation Process**

### Comment

Questions were raised on how it was determined who would get an Interested Party letter.

### AQD Response

Indeck originally proposed a natural gas-fired power plant starting in 2000. There was public interest at the time, and an Interested Party list was generated based upon those who provided comments and/or attended the hearing. The AQD maintains past Interested Party lists and uses the same lists for future applications, updating it each time. Since there has not been a permitting action for Indeck requiring public comment in over a decade, the Interested Party list was old, and therefore outdated. The list was updated as comments were received and based upon attendance at the Hearing.

### Comment

A hearing had to be requested. Since the permit affects those in the area, why wasn't a hearing automatically a part of the permit process?

### AQD Response

All comments received within a comment period are reviewed, regardless of whether they are received verbally at a hearing, which is only required if there is public interest for one. Since a decade had passed from the previous public comment period, it was difficult to tell if the public would have the same level of interest. This is a decision that has to be made for all applications requiring public comment, and frequently, a hearing is not requested. Hearings on location are generally outside of regular business hours and therefore require extra time and costs. Oftentimes, in order to keep expenses as low as possible, hearings are set as "if requested" and one is held only if there is public interest for one.

### Comment

One commenter stated that the State would have multiple meetings with regard to this facility, they listed water and noise as examples, and that this method was difficult for citizens to deal with. They further requested that the State do a complete environmental study to see what the total impacts are on the traffic, on the water, on other industry coming into the community, and if there would be better sites that are less populated. Other commenters raised a number of non-air related concerns. They were namely about water usage, water discharge, noise, construction traffic, safety, and jobs.

### AQD Response

The AQD believes there has been a misunderstanding with regard to the State's authority over the described issues. Air emissions are regulated on the State level in Michigan; however, noise, traffic, facility siting, and zoning are regulated at the local level. If further meetings or hearings are held with regard to local regulatory issues, it will be at the local authority's discretion.

Though the AQD does not have authority over these topics, we recognize the concerns of the citizens. We have written a letter stating the situation to the Mayor of Niles. Enclosed with the letter were the written and oral comments received about these topics. He will also have access to this document.

By law, the AQD was required to present our review of the application for the public to review and comment upon. The AQD is not allowed to base our decision upon non-air quality regulations. As part of the AQD review, an additional impact analysis was performed. The additional impact analysis evaluates the impacts from the proposed project on soils, vegetation, wildlife, visibility, and growth. The project emissions are not anticipated to have a negative impact on soils, vegetation, wildlife, or visibility, and to have minimal impact on growth once construction is completed.

## **J. Miscellaneous**

### Comment

Multiple commenters expressed a desire for a renewable energy plant rather than a natural gas-fired plant.

### AQD Response

The AQD does not set policy on what type of plants are allowed in the State of Michigan; we are tasked with ensuring that proposed facilities comply with all air quality requirements. The air permitting process involves a thorough review of the proposal and its impacts on the environment including whether or not the emissions will comply with state and federal health standards. Emissions from the plant will meet the NAAQS and the AQD health-based screening levels.

Many of the issues brought up regarding viability of a natural gas plant are all considerations that the company would consider prior to moving forward with the plant. Issuance of an air quality permit does not guarantee that a plant will be built. There are other permits and licenses that a company would need to obtain prior to moving forward.

### Comment

Some commenters stated that the money for this plant should be spent on renewable energy.

### AQD Response

Indeck is not a publicly owned entity. The AQD does not have the authority to specify how they spend their funds.

Comment

A comment was received regarding the contribution of methane to carbon dioxide equivalents (which is the quantifiable pollutant for greenhouse gases) from the drilling, extraction, and transportation of natural gas leaks.

AQD Response

Through the PTI process, the AQD may only review the proposed project. The GHGs emitted as part of the obtainment of natural gas prior to the company purchasing it is outside of the purview of this review.

The AQD does however separately regulate and permit natural gas wells and processing facilities. The MDEQ Office of Oil, Gas, and Minerals also regulates the natural gas facilities and infrastructure.

**IV. SUMMARY OF COMMENTS RECEIVED IN SUPPORT**

The following is a list of the benefits cited in the verbal testimony and letters received:

The AQD received 143 form letters of support. The letters stated that the new electric generation facility will not only employ hundreds of construction workers, but this investment will have a positive impact across the State of Michigan. This project will be built by construction workers from across Southwest Michigan, including members of the Laborers International Union of North America.

Through the use of natural gas, the plant will be a “clean” plant, reducing our reliance on other less clean energy sources, resulting in an increase in electrical power to the grid.

This project will result in an improved tax base that will enable the enhancement of our local education, public service (police, fire, and streets), and utilities.

The emissions meet the standards for Title V and NAAQS, and it is going to have CEMS. The AQD has performed an exhaustive modeling review, and has stated that standards have gotten more stringent. It certainly meets all the requirements that have been set forth.

This will be a next generation state-of-the-art energy center, proposed to be a 1,000 megawatt power plant, which is enough power for 635,000 homes and businesses. This operation is going to fill an energy need, since coal and Palisades are going down. It will generate jobs.

The comparable acreage it would take to build this plant in solar would be 7,933 acres of solar farm. That's a lot of people's property. This plant is a small area and meets the criteria.

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