TECHNICAL FACT SHEET

January 8, 2025

Purpose and Summary

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), is proposing to act on Permit to Install (PTI) application No. APP-2024-0157 from EES Coke Battery, LLC (EES Coke) located at 1400 Zug Island Rd in River Rouge, Michigan (Figure 1). The permit application is a request to install and operate a secondary coke screener and associated equipment. The proposed project is subject to permitting requirements of the Department's Rules for Air Pollution Control. Before acting on this application, the AQD is holding a public comment period and a hybrid (both in-person and virtual) public hearing to allow all interested parties the opportunity to comment on the proposed PTI. All relevant information received during the comment period and at the public hearing will be considered by the decision maker before taking final action on the application.

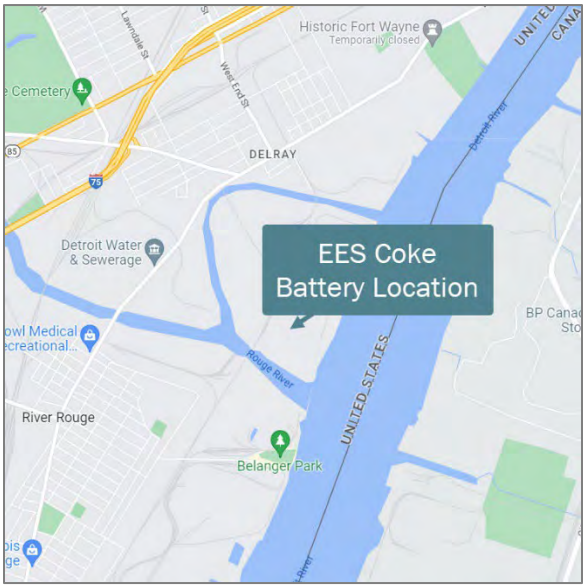

Figure 1: Location of EES Coke Battery

Background Information

The coke oven battery began operation in 1992. National Steel Corporation (NSC) - Great Lakes Division originally owned and operated the battery and the steel-making operations on Zug Island. In 1997, NSC sold the battery to EES Coke but continued to manage the coke operations. In 2003, the U.S. Steel Corporation (US Steel) acquired the iron and steel assets from the National Steel Corporation, and in 2004, EES Coke assumed sole responsibility for the coke operations. EES Coke (State Registration No. P0408) and US Steel (State Registration No. A7809) are considered to be the same stationary source.

The coke making operations include a by-product recovery coke oven battery consisting of eighty-five, six-meter high ovens with an integral heating system; a by-product recovery plant; and a coke oven gas flare. The coke oven battery converts coal into metallurgical coke for the iron and steel industry. The by-product recovery coke oven battery, the by-product recovery plant and the material handling processes are all currently operating under PTI No. 51-08C, and the source (US Steel and EES Coke) has a Renewable Operating Permit (ROP) identified as No. 199600132d.

Facility and Present Air Quality

The purpose of the secondary screener is to separate the nut coke (medium pieces) from the breeze coke (small pieces) at EES Coke instead of it being processed in another facility on Zug Island. The proposed project consists of the following equipment:

- A secondary coke screener to sift the coke.
- A loading bin underneath the secondary screener.
- Conveyors to transport coke.
- A sump hopper for loading coke.

The following process flow diagram shows both EES Coke's existing process (in blue) and the proposed equipment (in green):

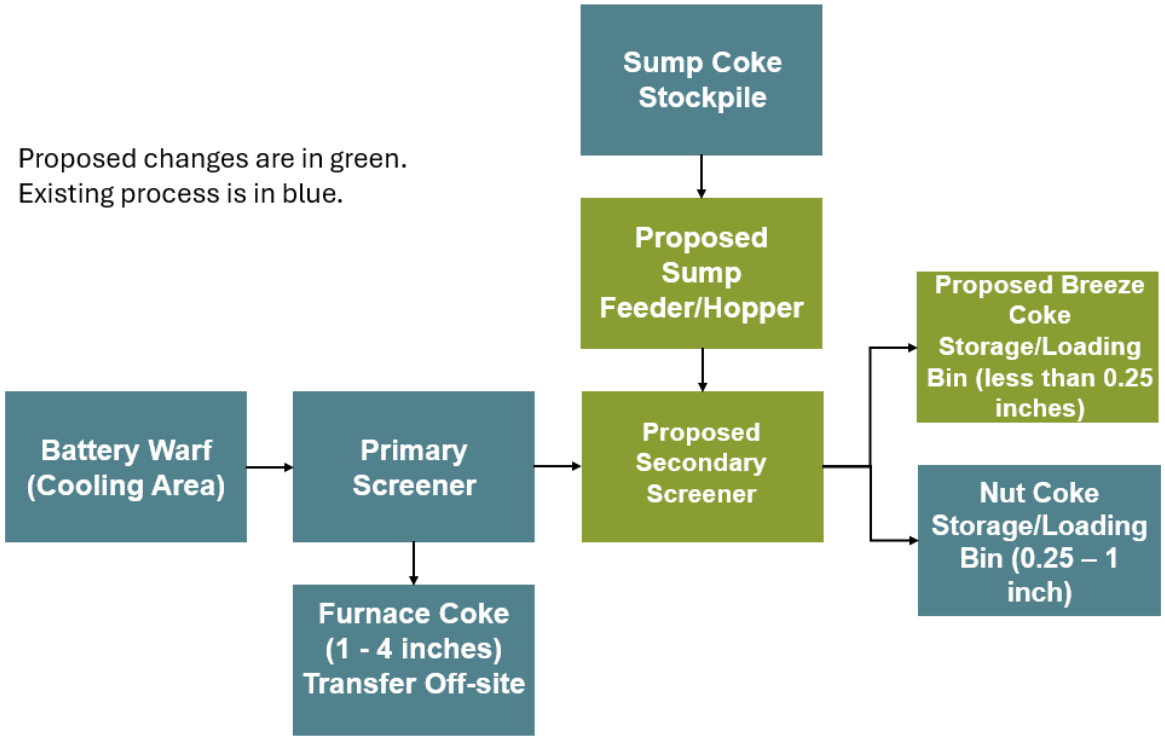

Figure 2: Process Flow Diagram

The proposed secondary screener will be operated within an enclosed building. In addition, a foam suppressant will be sprayed onto the coke to help control particulate emissions.

EES Coke is located in the portion of Wayne County that currently meets all of the National Ambient Air Quality Standards (NAAQS) set by the United States Environmental Protection Agency (USEPA), except for sulfur dioxide (SO_2). The air quality standards are for particulate matter less than or equal to 10 microns in diameter (PM10), particulate matter less than or equal to 2.5 microns in diameter (PM2.5), carbon monoxide (CO), nitrogen dioxide (NO_2), SO_2, ozone, and lead. The NAAQS are set at levels designed to protect public health, including sensitive populations.

The AQD operates 11 air monitoring station(s) in Wayne County, 7 of which are in the City of Detroit and within 5 miles of EES Coke. The closest monitoring station is the Detroit SW station located 1.25 miles north of EES Coke. The Detroit SW station measures NO_2, PM10, PM2.5, SO_2, volatile organic compounds (VOCs), metals, black carbon, and carbonyls. The purpose of the air monitoring stations is to assess the regional or area-wide air quality and is not used to determine if a specific source is in compliance with their air permit.

Pollutant Emissions

EES Coke is requesting to install a secondary screener and associated equipment at their facility that is currently classified as an existing major source under both the Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR) regulations. Under the PSD regulations, the facility is a major source for CO, oxides of nitrogen (NOx), PM, PM10, PM2.5, and VOCs. Under the NNSR regulations, the facility is a major source for SO_2. Any modification at a PSD major source where the emissions of a regulated pollutant increase by more than the Significant Emission Rate (SER) results in the modification being subject to the PSD regulations for that pollutant. Any modification at a NNSR major source where the emissions of a nonattainment pollutant increase by more than the SER results in the modification being subject to the NNSR regulations for that pollutant.

As the following table shows, emissions from the proposed project will be below the SER for all regulated pollutants; therefore, the project is not subject to either the PSD or the NNSR regulations.

Table 1: Project Potential Emission Summary

Pollutant	Estimated Emissions (tpy*)	Significant Emission Rate (tpy)	Subject to PSD and/or NNSR
Particulate Matter (PM)	1.6	25	No
PM10	0.82	15	No
PM2.5	0.23	10	No
SO_2	0	40	No
CO	0	100	No
NO_x	0	40	No
VOCs	0	40	No

*tpy = tons per year

Key Permit Review Issues

Staff evaluated the proposed project to identify all state rules and federal regulations which are, or may be, applicable. The tables in Appendix 1 summarize these rules and regulations.

- **Minor/Major Modification Determination for Attainment Pollutants**
  The facility is an existing PSD major stationary source. A modification at the facility where the emissions of any regulated pollutant will increase by more than the SER for that pollutant results in the modification being subject to the PSD requirements for that pollutant. EES Coke is located in the portion of Wayne County, which is currently in attainment for all regulated pollutants, except for SO_2. As is shown above in Table 1, the proposed increase of each regulated pollutant is less than its respective SER and therefore is not subject to PSD for any pollutant.

- **Minor/Major Modification Determination for Nonattainment Pollutants**
  The facility is an existing NNSR major stationary source. A modification at the facility where the emissions of any nonattainment pollutant will increase by more than the SER for that pollutant results in the modification being subject to the NNSR requirements for that pollutant. EES Coke is located in the portion of Wayne County which is currently in nonattainment for SO_2. As shown above in Table 1, the proposed increase of SO_2 is less than its respective SER and therefore is not subject to NNSR for SO_2.

- **Federal NESHAP Regulations**
  National Emission Standards for Hazardous Air Pollutants (NESHAP) were established under 40 CFR Parts 61 or 63. There are no NESHAPs applicable to the proposed secondary coke screener and associated equipment.

- **Rule 225 Toxics Analysis**

  EGLE Rules for Air Pollution Control require the ambient air concentration of toxic air contaminants (TACs) be compared against health-based screening levels. Per Rule 229(2) (b), the AQD has determined that for TACs reasonably anticipated to exist as a particulate in ambient air, in lieu of setting a screening level, the primary NAAQS for PM10 and PM2.5 are reasonable and appropriate health protective levels. As TAC emissions will be particulate from the proposed secondary screener and associated equipment, the AQD's Toxics Unit determined that the primary NAAQS for PM10 and PM2.5 should be used as the acceptable Rule 225 screening levels. The TAC PM10 and PM2.5 impacts were found to be below their respective NAAQS values and therefore considered to be meeting Rule 225, as reviewed under Rule 227.

- **Criteria Pollutants Modeling Analysis**
  EES Coke conducted, and the AQD verified, computer dispersion modeling to predict the impacts of PM10 and PM2.5 from the secondary screener. Emissions were evaluated against both the NAAQS and the PSD increments.

  The first step in this evaluation is to determine the predicted pollutant impacts from the proposed project. After the impacts are determined, they are compared to the applicable Significant Impact Levels (SIL). For pollutants with impacts less than the SIL, the emissions are presumed to comply with both the NAAQS and the PSD Increments, and no further review is required.

  As shown in Table 2, the predicted impacts for all pollutants and all averaging times are under their respective SILs.

Table 2: Preliminary Modeling Impacts from the Secondary Screener

Pollutant	Averaging Time	Significant Impact Level (µg/m^3)	Predicted Impact (µg/m^3)	Percent of SIL	Additional Modeling Needed?
PM10	24-hr	5	3.39	68%	No
PM10	Annual	1	0.445	45%	No
PM2.5	24-Hr	1.2	0.60	50%	No
PM2.5	Annual	0.13	0.093	72%	No

Because the modeling passed the SIL for all pollutants at all averaging times, modeling against the NAAQS and PSD increment was not required or performed.

Key Aspects of Draft Permit Conditions

- **Emission Limits**
  The proposed permit limits visible emissions from the secondary screener and associated equipment to a maximum of 10% opacity.

- **Usage Limits**

  The proposed permit limits how much coke may be processed in the secondary screener on an hourly and an annual operating basis.

- **Process/Operational Restrictions**

  The proposed permit requires EES Coke to develop and implement an updated fugitive dust control plan. This plan will ensure fugitive dust emissions from the material handling operations, storage piles, and roadways within the facility will be minimized to the greatest extent possible.

  The proposed permit requires use of a spray foam dust suppressant system whenever the secondary screener is in operation.

Conclusion

Based on the analyses conducted, the proposed project would comply with all applicable state and federal air quality requirements. The project, as proposed, would not violate the federal NAAQS or the state and federal PSD Increments.

Based on these analyses, AQD staff have developed proposed permit terms and conditions to ensure that the facility's process design and operation are enforceable. Additionally, EES Coke would perform sufficient monitoring, recordkeeping, and reporting requirements to determine compliance with these terms and conditions. If the permit application is deemed approvable, the delegated decision maker may determine a need for additional or revised conditions to address issues raised during the public participation process.

If you would like additional information about this proposal, please contact Grace Knauss, at KnaussG@Michigan.gov or 517-643-6174.

Appendix 1

STATE AIR REGULATIONS

State Rule	Description of State Air Regulations
R 336.1201	Requires an Air Use Permit for new or modified equipment that emits, or could emit, an air pollutant or contaminant. However, there are other rules that allow smaller emission sources to be installed without a permit (see Rules 336.1279 through 336.1290 below). Rule 336.1201 also states that the Department can add conditions to a permit to assure the air laws are met.
R 336.1205	Outlines the permit conditions that are required by the federal Prevention of Significant Deterioration (PSD) Regulations and/or Section 112 of the Clean Air Act. Also, the same types of conditions are added to their permit when a plant is limiting their air emissions to legally avoid these federal requirements. (See the Federal Regulations table for more details on PSD.)
R 336.1224	New or modified equipment that emits toxic air contaminants must use the Best Available Control Technology for Toxics (T-BACT). The T-BACT review determines what control technology must be applied to the equipment. A T-BACT review considers energy needs, environmental and economic impacts, and other costs. T-BACT may include a change in the raw materials used, the design of the process, or add-on air pollution control equipment. This rule also includes a list of instances where other regulations apply and T-BACT is not required.
R 336.1225 to R 336.1232	The ambient air concentration of each toxic air contaminant emitted from the project must not exceed health-based screening levels. Initial Risk Screening Levels (IRSL) apply to cancer-causing effects of air contaminants and Initial Threshold Screening Levels (ITSL) apply to non-cancer effects of air contaminants. These screening levels, designed to protect public health and the environment, are developed by Air Quality Division toxicologists following methods in the rules and U.S. EPA risk assessment guidance.
R 336.1279 to R 336.1291	These rules list equipment to processes that have very low emissions and do not need to get an Air Use permit. However, these sources must meet all requirements identified in the specific rule and other rules that apply.
R 336.1301	Limits how air emissions are allowed to look at the end of a stack. The color and intensity of the color of the emissions is called opacity.
R 336.1331	The particulate emission limits for certain sources are listed. These limits apply to both new and existing equipment.
R 336.1370	Material collected by air pollution control equipment, such as dust, must be disposed of in a manner, which does not cause more air emissions.
R 336.1401 and R 336.1402	Limit the sulfur dioxide emissions from power plants and other fuel burning equipment.

State Rule	Description of State Air Regulations
R 336.1601 to R 336.1651	Volatile organic compounds (VOCs) are a group of chemicals found in such things as paint solvents, degreasing materials, and gasoline. VOCs contribute to the formation of smog. The rules set VOC limits or work practice standards for existing equipment. The limits are based upon Reasonably Available Control Technology (RACT). RACT is required for all equipment listed in Rules 336.1601 through 336.1651.
R 336.1702	New equipment that emits VOCs is required to install the Best Available Control Technology (BACT). The technology is reviewed on a case-by-case basis. The VOC limits and/or work practice standards set for a particular piece of new equipment cannot be less restrictive than the Reasonably Available Control Technology limits for existing equipment outlined in Rules 336.1601 through 336.1651.
R 336.1801	Nitrogen oxide emission limits for larger boilers and stationary internal combustion engines are listed.
R 336.1901	Prohibits the emission of an air contaminant in quantities that cause injurious effects to human health and welfare, or prevent the comfortable enjoyment of life and property. As an example, a violation may be cited if excessive amounts of odor emissions were found to be preventing residents from enjoying outdoor activities.
R 336.1910	Air pollution control equipment must be installed, maintained, and operated properly.
R 336.1911	When requested by the Department, a facility must develop and submit a malfunction abatement plan (MAP). This plan is to prevent, detect, and correct malfunctions and equipment failures.
R 336.1912	A facility is required to notify the Department if a condition arises which causes emissions that exceed the allowable emission rate in a rule and/or permit.
R 336.2001 to R 336.2060	Allow the Department to request that a facility test its emissions and to approve the protocol used for these tests.
R 336.2801 to R 336.2804 **Prevention of Significant Deterioration (PSD) Regulations** **Best Available Control Technology (BACT)**	The PSD rules allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the National Ambient Air Quality Standards (NAAQS). The regulations define what is considered a large or significant source, or modification. In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing the BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities. In its permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant's determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.

State Rule	Description of State Air Regulations
R 336.2901 to R 336.2903 and R 336.2908	Applies to new "major stationary sources" and "major modifications" as defined in R 336.2901. These rules contain the permitting requirements for sources located in nonattainment areas that have the potential to emit large amounts of air pollutants. To help the area meet the NAAQS, the applicant must install equipment that achieves the Lowest Achievable Emission Rate (LAER). LAER is the lowest emission rate required by a federal rule, state rule, or by a previously issued construction permit. The applicant must also provide emission offsets, which means the applicant must remove more pollutants from the air than the proposed equipment will emit. This can be done by reducing emissions at other existing facilities. As part of its evaluation, the AQD verifies that no other similar equipment throughout the nation is required to meet a lower emission rate and verifies that proposed emission offsets are permanent and enforceable.

FEDERAL AIR REGULATIONS

Citation	Description of Federal Air Regulations or Requirements
Section 109 of the Clean Air Act – National Ambient Air Quality Standards (NAAQS)	The United States Environmental Protection Agency has set maximum permissible levels for seven pollutants. These NAAQS are designed to protect the public health of everyone, including the most susceptible individuals, children, the elderly, and those with chronic respiratory ailments. The seven pollutants, called the criteria pollutants, are carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter less than 10 microns (PM10), particulate matter less than 2.5 microns (PM2.5), and sulfur dioxide (SO_2). Portions of Michigan are currently non-attainment for either ozone or SO_2. Further, in Michigan, State Rules 336.1225 to 336.1232 are used to ensure the public health is protected from other compounds.
40 CFR 51 Appendix S **Emission Offset Interpretive Ruling**	Appendix S applies during the interim period between nonattainment designation and EPA approval of a SIP that satisfies nonattainment requirements specified in Part D of the Clean Air Act. Appendix S would apply in nonattainment areas where either no nonattainment permit rules apply or where the existing state rules are less stringent than Appendix S.
40 CFR 52.21 – Prevention of Significant Deterioration (PSD) Regulations **Best Available Control Technology** **(BACT)**	The PSD regulations allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the NAAQS. The regulations define what is considered a large or significant source, or modification. In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities. In its permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant's determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.

Citation	Description of Federal Air Regulations or Requirements
40 CFR 60 – New Source Performance Standards (NSPS)	The United States Environmental Protection Agency has set national standards for specific sources of pollutants. These New Source Performance Standards (NSPS) apply to new or modified equipment in a particular industrial category. These NSPS set emission limits or work practice standards for over 60 categories of sources.
40 CFR 63— National Emissions Standards for Hazardous Air Pollutants (NESHAP)	The United States Environmental Protection Agency has set national standards for specific sources of pollutants. The National Emissions Standards for Hazardous Air Pollutants (NESHAP) (a.k.a. Maximum Achievable Control Technology (MACT) standards) apply to new or modified equipment in a particular industrial category. These NESHAPs set emission limits or work practice standards for over 100 categories of sources.
Section 112 of the Clean Air Act **Maximum Achievable Control Technology (MACT)** **Section 112g**	In the Clean Air Act, Congress listed 189 compounds as Hazardous Air Pollutants (HAPS). For facilities which emit, or could emit, HAPS above a certain level, one of the following two requirements must be met: 1) The United States Environmental Protection Agency has established standards for specific types of sources. These Maximum Achievable Control Technology (MACT) standards are based upon the best-demonstrated control technology or practices found in similar sources. 2) For sources where a MACT standard has not been established, the level of control technology required is determined on a case-by-case basis.

Notes: An “Air Use Permit,” sometimes called a “Permit to Install,” provides permission to emit air contaminants up to certain specified levels. These levels are set by state and federal law, and are set to protect health and welfare. By staying within the levels set by the permit, a facility is operating lawfully, and public health and air quality are protected.

The Air Quality Division does not have the authority to regulate noise, local zoning, property values, off-site truck traffic, or lighting.

These tables list the most frequently applied state and federal regulations. Not all regulations listed may be applicable in each case. Please refer to the draft permit conditions provided to determine which regulations apply.