Street Through A Corner
SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 3448, Prefabricated Metal Buildings and Components
Single Source Det.  ☐ Yes  ☒ No  If Yes, Affiliated Source AI:

Source-wide Limit  ☒ Yes  ☐ No  If Yes, See Section 4, Table A

28 Source Category  ☐ Yes  ☒ No  If Yes, Category:

County: Franklin
Nonattainment Area  ☒ N/A  ☐ PM10  ☐ PM2.5  ☐ CO  ☐ NOX  ☐ SO2  ☐ Ozone  ☐ Lead
   If yes, list Classification:

PTE* greater than 100 tpy for any criteria air pollutant  ☒ Yes  ☐ No
   If yes, for what pollutant(s)?
      ☐ PM10  ☐ PM2.5  ☐ CO  ☐ NOX  ☐ SO2  ☒ VOC

PTE* greater than 250 tpy for any criteria air pollutant  ☒ Yes  ☐ No
   If yes, for what pollutant(s)?
      ☐ PM10  ☐ PM2.5  ☐ CO  ☐ NOX  ☐ SO2  ☒ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP)  ☒ Yes  ☐ No
   If yes, list which pollutant(s): Glycol Ethers, Isophorone, Toluene, Xylene

PTE* greater than 25 tpy for combined HAP  ☒ Yes  ☐ No

*PTE does not include self-imposed emission limitations.

Description of Facility:
Nucor Insulated Panel Group, LLC (Nucor) owns and operates a manufacturing plant in Frankfort, Kentucky that processes specialized finished metal panels, corner units, and other miscellaneous parts for building construction.

Products are produced using a process that consists of the following steps: Pre-painted coils are shaped with Component, I-Mill, Liner, and Profile roll-form production lines. Then, the coils are then shaped, bent, punched, and cut to various angles to make the desired final formed unit. Mitered panels are grinded (removal of burrs) and glued (e.g., Metal-Weld adhesive) to make a complete corner unit. After the units are glued, they are grinded again to remove any excess adhesive and provide the metal with a smooth finish. Units are then cleaned with a solvent to prepare for touch-up surface coating as needed (i.e., painting along cut edges due to grinding). Units are then loaded onto racks and rolled into the single paint booth for touch-up surface coating operations. After spray coating is complete, racks are rolled back out of the spray booth to allow for air-drying. Dried corner units are then transferred to the trim area for packaging and shipping.
SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: F-22-024 Activities: APE20220001

Received: February 8, 2022 Application Complete Date(s): April 24, 2022

Permit Action: ☐ Initial ☒ Renewal ☐ Significant Rev ☐ Minor Rev ☐ Administrative

Construction/Modification Requested? ☒ Yes ☐ No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action ☐ Yes ☒ No

Description of Action:
Nucor submitted a permit application on February 8, 2022, to renew their existing Conditional Major permit F-17-034 R1. With this permit renewal F-22-024, the following changes have been made to the permit. No other changes have been requested by Nucor.

- Added a third HVLP spray gun and increased maximum throughput from 5.94 gal/hr to 8.91 gal/hr. The spray booth (EP 01) is currently equipped with two high volume low pressure (HVLP) spray guns. Nucor is requesting authorization to use a third HVLP spray gun via this renewal application. The third spray gun will not increase actual paint or thinner usage, but instead offer alternative spray patterns to those available with the current HVLP spray guns. However, consistent with past permitting efforts, Nucor has increased the maximum hourly and annual usage of paint and thinner in Process IDs 1-3 by 50% to account for increasing the number of available HVLP spray guns from 2 to 3.

- Added a 100-gallon gasoline tank (EP T101). This tank is used to dispense fuel into various types of gasoline combustion equipment primarily for landscaping equipment. The tank has negligible emissions. However, EP T101 is subject to the requirements of 40 CFR 63, Subpart CCCCCC and has been added to SECTION B of the permit.

- Removed the Formabond Process (EP 02), which is no longer in operation.

- Re-designated insignificant activity “Mineral Oil Storage Drum” as “MEK and IPA Storage Drum(s)” as these are stored on-site for use as thinner/solvent clean-up.

- Added 33 stationary natural gas-fired space heaters totaling 5.25 MMBtu/hr (EP 07) to SECTION C - INSIGNIFICANT ACTIVITIES.

- Added one natural gas-fired water heater rated at 0.075 MMBtu/hr (EP 08) to SECTION C - INSIGNIFICANT ACTIVITIES.

- Added one 300-gallon diesel tank to SECTION C - INSIGNIFICANT ACTIVITIES.

- The Division updated and made formatting changes throughout the permit to be consistent and clear.
## F-22-024 Emission Summary

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>(1) 2021 Actual (tpy)</th>
<th>(2) PTE F-22-024 (tpy)</th>
<th>(3) Allowable (tpy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>---</td>
<td>2.64</td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>---</td>
<td>3.15</td>
<td></td>
</tr>
<tr>
<td>PT</td>
<td>0.0005</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>PM10</td>
<td>0.0005</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>PM2.5</td>
<td>0.0005</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>SO2</td>
<td>---</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>VOC</td>
<td>0.57</td>
<td>507.94</td>
<td>&lt; 90</td>
</tr>
<tr>
<td>Lead</td>
<td>---</td>
<td>0.00002</td>
<td></td>
</tr>
</tbody>
</table>

**Greenhouse Gases (GHGs)**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>(1) 2021 Actual (tpy)</th>
<th>(2) PTE F-22-024 (tpy)</th>
<th>(3) Allowable (tpy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Dioxide</td>
<td>---</td>
<td>3,753</td>
<td></td>
</tr>
<tr>
<td>Methane</td>
<td>---</td>
<td>0.07</td>
<td></td>
</tr>
<tr>
<td>Nitrous Oxide</td>
<td>---</td>
<td>0.007</td>
<td></td>
</tr>
<tr>
<td>CO2 Equivalent (CO2e)</td>
<td>---</td>
<td>3,757</td>
<td></td>
</tr>
</tbody>
</table>

**Hazardous Air Pollutants (HAPs)**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>(1) 2021 Actual (tpy)</th>
<th>(2) PTE F-22-024 (tpy)</th>
<th>(3) Allowable (tpy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Benzene</td>
<td>0.011</td>
<td>6.44</td>
<td>&lt; 9</td>
</tr>
<tr>
<td>Glycol Ethers</td>
<td>---</td>
<td>12.88</td>
<td>&lt; 9</td>
</tr>
<tr>
<td>Isophorone</td>
<td>---</td>
<td>32.23</td>
<td>&lt; 9</td>
</tr>
<tr>
<td>Toluene</td>
<td>0.087</td>
<td>21.48</td>
<td>&lt; 9</td>
</tr>
<tr>
<td>Xylene</td>
<td>0.022</td>
<td>21.48</td>
<td>&lt; 9</td>
</tr>
<tr>
<td>Combined HAPs</td>
<td>0.37</td>
<td>94.60</td>
<td>&lt; 22.5</td>
</tr>
</tbody>
</table>

(1) Based on 2021 KYEIS report.
(2) This includes control devices as required by the permit.
(3) Source-wide limits of 90 tpy or less, 9 tpy or less for single HAP, and 22.5 tpy or less for combined HAPs to remain a conditional major source.
## SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

### EP 01: Spray Booth and Clean-up

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Limit or Standard</th>
<th>Regulatory Basis for Emission Limit or Standard</th>
<th>Emission Factor Used and Basis</th>
<th>Compliance Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opacity</td>
<td>20% Opacity</td>
<td>401 KAR 59:010, Section 3(1)(a)</td>
<td>N/A</td>
<td>Qualitative observations on a weekly basis</td>
</tr>
</tbody>
</table>
| PM        | • $P \leq 0.5$ ton/hr = 2.34 lb/hr  
          | • $0.5 < P \leq 30$ ton/hr = 3.59$x^{0.62}$ lb/hr  
          | • $P > 30$ ton/hr = 17.31$x^{0.16}$ lb/hr       | 401 KAR 59:010, Section 3(2)  | 1.724 lb/gal uncontrolled; Manufacturer | Assumed to be in compliance when control equipment is properly operated and maintained. |

**Initial Construction and/or Modification Date:** 1/1/1981; modified: 4/30/2022

### Process Description:
The spray booth (and associated drying activities) that is used to touch-up corner parts that have undergone grinding. Spray coating operations and the associated drying and clean-up activities all take place within one booth at the facility (EP01). Corner parts are sprayed using a 50:50 mix of paint and thinner in the EP01 paint booth. The spray booth is equipped with fabric filters with 98.5% control efficiency in order to capture the particulate matter (PM) and target metal hazardous air pollutant (HAP) emissions that result from overspray in the paint booth.

- Max. Paint Usage: 4.455 gal/hr
- Max. Thinner Usage: 4.455 gal/hr
- Max. Clean-up Solvent Usage: 8.91 gal/hr
- Control Equipment: Baghouse

### Applicable Regulation:
**401 KAR 59:010, New process operations.** This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.

**401 KAR 63:002, Section 2(4)(iiiiii), 40 C.F.R. 63.11169 through 63.11180, Table 1 (Subpart HHHHHHHH).** National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources, applies to area sources of HAP and that performs spray application of coatings that contain the target HAP, as defined in 40 CFR 63.11180, to a plastic and/or metal substrate on a part or product, except spray coating applications that meet the definition of facility maintenance or space vehicle in 40 CFR 63.11180.

### Comments:
Emissions are calculated using the worst-case paint constituent for each pollutant, and a transfer efficiency of 65%.

The Nucor primary SIC code is 3448 which is not one of the nine source categories listed in 40 CFR 63.11514(a)(1) through (9). Therefore, the requirements of 40 CFR 63, Subpart XXXXXXX, Nine Metal Fabrication and Finishing Source Categories at Area Sources is not applicable to the source.
EP 01: Spray Booth and Clean-up

The metal coil surface coating operations regulated by 40 CFR 60 Subpart TT, Metal Coil Surface Coating, are specific to prime coat and finish coat operations. The only “coating” applied to metal coils at the Nucor is lubricating/evaporating oil applied during the roll forming process, which is performed on prepainted panels. Therefore, 40 CFR 60, Subpart TT does not apply to operations at Nucor.

Historically, Nucor has used paints containing the target HAPs identified in 40 CFR 63, Subpart HHHHHH, and accordingly the provisions of Subpart HHHHHH were incorporated into the permit. Currently, NIPG does not use paints containing the target HAPs that would make them subject to this regulation, however, Nucor has opted to maintain the provisions in the permit as an applicable regulation and continue to comply with them, so that they are not restricted on the paints they can apply for and use.

EP T101: 100-Gal Gasoline Tank

Initial Construction Date: 4/30/2022

Process Description:
One 100 gallon gasoline dispensing tank with variable monthly throughput, with a facility total of less than 10,000 gallons per month.

Maximum Throughput: 5,200 gal/yr
Control Equipment: None

Applicable Regulation:
401 KAR 63:002, Section (2)(4)(ddddd), 40 C.F.R. 63.11110 to 63.11132, Tables 1 to 3 (Subpart CCCCCC), National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, applies to each gasoline dispensing facility that is located at an area source.

Comments:
VOC and HAP emissions are calculated using emission factors from TankESP.
SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

**Testing Requirements\Results**

The source, at the time of permit F-22-024, has not been required to perform any emissions testing.
SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

<table>
<thead>
<tr>
<th>Emission and Operating Limit</th>
<th>Regulation</th>
<th>Emission Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 tpy of VOC emissions</td>
<td>To preclude 401 KAR 52:020, Title V permits</td>
<td>Source-wide</td>
</tr>
<tr>
<td>9.0 tpy of individual HAP emissions</td>
<td>To preclude major source status for HAP</td>
<td>Source-wide</td>
</tr>
<tr>
<td>22.5 tpy of combined HAP emissions</td>
<td>To preclude major source status for HAP</td>
<td>Source-wide</td>
</tr>
</tbody>
</table>

Table B - Summary of Applicable Regulations:

<table>
<thead>
<tr>
<th>Applicable Regulations</th>
<th>Emission Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>401 KAR 59:010, New process operations</strong>, applies to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR Chapter 59, commenced on or after July 2, 1975.</td>
<td>01</td>
</tr>
<tr>
<td><strong>401 KAR 63:002, Section 2(4)(iiiii), 40 C.F.R. 63.11169 through 63.11180, Table 1 (Subpart HHHHHHH), National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources</strong>, applies to area sources of HAP and that performs spray application of coatings that contain the target HAP, as defined in 40 CFR 63.11180, to a plastic and/or metal substrate on a part or product, except spray coating applications that meet the definition of facility maintenance or space vehicle in 40 CFR 63.11180.</td>
<td>01</td>
</tr>
<tr>
<td><strong>401 KAR 63:002, Section (2)(4)(ddddd), 40 C.F.R. 63.11110 to 63.11132, Tables 1 to 3 (Subpart CCCCCC), National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities</strong>, applies to each gasoline dispensing facility (GDF) that is located at an area source.</td>
<td>T101</td>
</tr>
</tbody>
</table>

Table C - Summary of Precluded Regulations:

N/A

Table D - Summary of Non Applicable Regulations:

N/A

Air Toxic Analysis

N/A

Single Source Determination

N/A
**SECTION 5 – PERMITTING HISTORY**

<table>
<thead>
<tr>
<th>Permit</th>
<th>Permit Type</th>
<th>Activity#</th>
<th>Complete Date</th>
<th>Issuance Date</th>
<th>Summary of Action</th>
<th>PSD/Syn Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-01-022</td>
<td>Renewal</td>
<td>APE20050001</td>
<td>7/3/2001</td>
<td>10/4/2001</td>
<td>Permit Renewal</td>
<td>N/A</td>
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<tr>
<td>F-06-032</td>
<td>Renewal</td>
<td>APE20060001</td>
<td>9/1/2006</td>
<td>2/10/2007</td>
<td>Permit Renewal</td>
<td>N/A</td>
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<tr>
<td>F-11-078</td>
<td>Renewal</td>
<td>APE20110001</td>
<td>3/7/2012</td>
<td>8/17/2012</td>
<td>Permit Renewal</td>
<td>N/A</td>
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<tr>
<td>F-11-078 R1</td>
<td>Adm. Amendment</td>
<td>APE20140001</td>
<td>12/23/2013</td>
<td>2/10/2014</td>
<td>Relocation of EP01</td>
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<td>F-17-034</td>
<td>Renewal</td>
<td>APE20170001</td>
<td>4/24/2017</td>
<td>8/8/2017</td>
<td>Permit Renewal</td>
<td>N/A</td>
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<td>F-17-034 R1</td>
<td>Adm. Amendment</td>
<td>APE20210001</td>
<td>8/23/2021</td>
<td>9/3/2021</td>
<td>Change of name/ownership from Centria to Nucor Insulated Panel Group</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**SECTION 6 – PERMIT APPLICATION HISTORY**

N/A

**APPENDIX A – ABBREVIATIONS AND ACRONYMS**

- AAQS – Ambient Air Quality Standards
- BACT – Best Available Control Technology
- Btu – British thermal unit
- CAM – Compliance Assurance Monitoring
- CO – Carbon Monoxide
- Division – Kentucky Division for Air Quality
- ESP – Electrostatic Precipitator
- GHG – Greenhouse Gas
- HAP – Hazardous Air Pollutant
- HF – Hydrogen Fluoride (Gaseous)
- MSDS – Material Safety Data Sheets
- mmHg – Millimeter of mercury column height
- NAAQS – National Ambient Air Quality Standards
- NESHAP – National Emissions Standards for Hazardous Air Pollutants
- NOx – Nitrogen Oxides
- NSR – New Source Review
- PM – Particulate Matter
- PM<sub>10</sub> – Particulate Matter equal to or smaller than 10 micrometers
- PM<sub>2.5</sub> – Particulate Matter equal to or smaller than 2.5 micrometers
- PSD – Prevention of Significant Deterioration
- PTE – Potential to Emit
- SO<sub>2</sub> – Sulfur Dioxide
- TF – Total Fluoride (Particulate & Gaseous)
- VOC – Volatile Organic Compounds