

STATEMENT OF BASIS

Nemak USA., Inc.
Sylacauga, AL
Talladega County
309-0047

This proposed Title V Major Source Operating Permit renewal is issued under the provisions of ADEM Admin. Code r. 335-3-16. The above name applicant has requested authorization to perform the work or operate the facility shown on the application and drawing, plans, and other documents attached herto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

Nemak was issued its existing Major Source Operating Permit (MSOP) on January 21, 2010 with an expiration date of December 12, 2014. Per ADEM Rule 335-3-16-.12(2), an application for permit renewal shall be submitted at least six (6) months, but not more than eighteen (18) months, before the date of expiration of the permit. Based on this rule, the application for renewal was due to the Department no later than June 12, 2014, but no earlier than June 12, 2013. An application for permit renewal was received by the Department on June 13, 2014. Additional information was deemed necessary for processing of this MSOP on January 30, 2015, and additional information was received on March 4, 2015. The proposed MSOP will expire on December 12, 2019.

Nemak USA., Inc. (Nemak) located in Sylacauga, Alabama operates a lost foam aluminum foundry and die cast operation. The facility produces cast aluminum blocks, cylinder heads, and die cast parts for the automotive industry. The high pressure die casting operation (HPDC) consists of aluminum die casting, melting and holding of aluminum, heat treatment, and machining and finishing. The lost foam casting operation (LFC) consists of lost foam pattern making, casting, melting and holding of aluminum, heat and finishing treatment, sand handling and reclaim, and facility support (boilers, etc).

The following are significant sources of air pollution for this facility:

Emissions ID	Descriptions
001	Foam Pattern Making Process
002	Casting Line #1 with Natural Gas-Fired Duct Burner with Baghouse and Thermal Oxidizer
003	Casting Line #2 with Natural Gas-Fired Duct Burner with Baghouse and Thermal Oxidizer
006	Primary Holding/Melting Furnace (80 metric ton)
007A & B	Two Natural Gas-Fired Heat Treating Furnaces (15 MMBtu/hr, each)
008	Two Sand Reclaim Silos with Baghouse

009A & B	One 35 MMBtu/hr Natural Gas-Fired Boiler and One 32.6 MMBtu/hr Natural Gas-Fired Boiler
010A & B	Four Casting Line Holding Furnaces
013	Sixteen Die Casting Lines
014	Sixteen Casting Line Holding Furnaces
015	Heat Treat Furnace
016	80 Ton Holding/Melting Furnace
017	75 Ton Holding/Melting Furnace

Renewal Notes

1. EP-005 35 metric ton holding furnace, has been removed from the site and will not be replaced
This unit was removed from the permit.
2. Two machining lines (#1 and #3) at HPDC that were previously identified as insignificant sources, have been removed from the site
These units were removed from the permit.
3. Nematik requests a facility-wide natural gas usage restriction of 1,600 million cubic feet per consecutive 12 – month period to limit potential emissions of green house gasses to less than 100,000 ton per year. This does not impact the existing restriction of natural gas usage at the Lost Foam Casting (LFC) operations.
This request was made prior to EPA’s determination that PSD major status cannot be triggered solely by GHG emissions. This limit will not be included in the permit.
4. The 80 and 75 metric ton holding/melting furnaces were previously listed as one emission point, EP016. That has been changed as these units emissions are routed through two separate points, EP016 for the 80 ton furnace and EP017 for the 75 ton furnace.
5. This facility is subject to MACT ZZZZZZ. The requirements from this subpart have been added to the Melting/Holding furnace in the Lost Foam Melting Operation. The furnaces in the Die Casting Operation are not subject to the requirements of MACT ZZZZZZ as die casting operation are exempt.

Foam Pattern Making Process (EP001)

Process Description:

Plastic beads containing polystyrene polymer and pentane (approximately 93% and 7% by weight, respectively) are partially expanded by conveying them through a steam heated pre-expansion unit followed by storage in silos for aging. After aging, the beads are placed in the metal mold of a foam pattern making machine. The mold is the shape, or portion of the shape, of the desired casting. There are separate sets of pattern-making machines for head cells and block cells. The back of the mold cavity containing polystyrene beads is then injected with steam. The steam causes the polystyrene beads to expand and fuse into a foam pattern taking the shape of the mold.

Applicability:

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “Major Source Operating Permits”.
- This unit has an enforceable limit in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration].”

Emission Point	PSEU Control Device?	PSEU Subject to Limit or Standard?	PSEU Potential Pre-Control Major?	PSEU Potential Post-Control Major?	PSEU Subject to CAM?
EP001	No	Anti PSD	No – VOC<100 TPY	No – VOC<100 TPY	<i>No</i>

Emissions Standards:

- VOC
 - VOC emissions from the foam pattern making process shall not exceed the Anti-PSD limit of 39.82 tons in any consecutive 12-month period. (*ADEM Admin Code r. 335-3-14-.04*)

Expected Emissions

- The expected volatile organic compound emissions from this process are 8.05 lbs/hr or 35.26 TPY. These emissions are based on material balance, average pentane content of 6.2% for incoming polystyrene, and operating 8,760 hour a year.

Compliance and Performance Test Methods and Procedures:

N/A

Emission Monitoring

This unit is not subject to 40 CFR 64 “*Compliance Assurance Monitoring*”.

Recordkeeping and Reporting Requirements:

- The facility shall monitor and maintain records of the amount of VOC’s emitted. The facility must keep records showing monthly and 12 month rolling total of all VOCs emitted, expressed in tons. The records shall be kept in a form suitable for inspection for a period of at least 5 years. (*ADEM Admin Code r. 335-3-16-.05(c)*)

Casting Line #1 with Natural Gas-Fired Duct Burner (8.5 MMBtu/hr) with Baghouse and Thermal Oxidizer (EP002)

Process Description:

Molten aluminum from the casting line holding furnace is directed to the molten dip well via robotic transfer. From the dip well, molten aluminum is poured into the flask and the foam pattern is replaced and vaporized upon contact with the molten aluminum. After the molten aluminum is poured into the flask, the unit continues through a hooded cooling conveyor. Upon completion of initial cooling, the casting are removed from the flask and placed into a water quench by robotic transfer. The remaining flask contents (i.e. sand) are emptied onto the conveyor. After removal from the water bath, excess metal is removed using a degating saw. The casting is sent to the heat treatment and finishing department. The excess metal is returned to the melting furnace. Emissions from the casting line are controlled by a thermal oxidizer. To prevent the exhaust gases from condensing in the duct work before reaching the oxidizers, duct burners are used to keep the gas temperature high. Emissions from the combustion of natural gas in the duct burners are emitted through the baghouse/oxidizer.

Applicability:

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.
- This source is subject to ADEM Admin. Code r. 335-3-4-.04(1), “Control of Particulate Emissions for Process Industries – General”.
- This unit is subject to ADEM Admin. Code r. 335-3-4-.01(1), “Control of Particulate Emissions – Visible Emissions”.
- This unit has an enforceable limit in order to prevent it from being subject to the provisions of ADEM Admin Code r. 335-3-14-.06, “Requirement for Control Technology Determinations for Major Sources in Accordance with Clean Air Act Section 112(g).”
- This unit has an enforceable limit in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration].”

CAM Analysis:

Emission Point	PSEU Control Device?	PSEU Subject to Limit or Standard?	PSEU Potential Pre-Control Major?	PSEU Potential Post-Control Major?	PSEU Subject to CAM?
EP002	Baghouse	The lesser of Anti PSD or allowable set by ADEM Admin Code R. 335-3-4-.04(1)	No – PM<100 TPY	No – PM<100 TPY	<i>No</i>

Emission Standards

- Opacity
 - ADEM Admin Code r. 335-4-.01(1)(a)(b), states no person shall discharge particulate emissions of an opacity greater than that designated as twenty (20%) percent opacity, as determined by a six (6) minute average. During one six (6) minute period a person may discharge into the atmosphere from any source of emission forty (40%) percent opacity.

- Particulate Matter
 - Particulate matter emissions from the stack associated with the casting line no. 1 shall not exceed the lesser of the Anit-PSD limit of 3.0 lbs/hr as required by ADEM Admin Code r. 335-3-14-.04

OR

the allowable set by ADEM Admin Code r. 335-3-4-.04(1), which states no person shall cause or permit the emission of particulate matter in excess of the amount for the process weight per hour allocated to such source accomplished by use of the equation:

$$E = 3.59 (P)^{0.62} \text{ (P less than 30 tons per hour)}$$

$$E = 17.31 (P)^{0.16} \text{ (P greater than 30 tons per hour)}$$

Where E = Emissions in pounds per hour
 P = Process weight per hour in tons per hour

- VOC
 - The VOC emissions from this unit shall not exceed the Anti-PSD limit of 2.05 lb/hr as required by ADEM Admin Code r. 335-3-14-.04.

- NO_x
 - Natural gas usage for the entire Lost Foam Operation shall not exceed the Anit-PSD limit of 1,374.12 X 10⁶ ft³ during any consecutive 12 month period as required by ADEM Admin Code r. 335-3-14-.04 .

- Styrene
 - Styrene emissions from this unit shall not exceed 0.68 lbs/hr. This limit was requested to avoid a 112(g) review. (*ADEM Admin Code r. 335-3-14-.06*)

Expected Emissions

The maximum expected emissions are as follows:

Pollutant	Expected Emissions (lb/hr)	Expected Emissions (TPY)
PM	.64	2.80
SO₂	.0038	.012
NO_x	.637	2.05
CO	.536	1.72
VOC	.02	.0876
Styrene	.38	1.66

The PM, VOC, and Styrene emissions were based on an emission test performed on January 10, 2002. SO₂, NO_x, and CO emissions were based on AP-42 emissions factors and operating 8,760 hours.

Compliance and Performance Test Methods and Procedures:

- If testing is required, particulate matter(PM) emissions shall be determined in accordance with Method 5 of 40 CFR 60, Appendix A. (*ADEM Admin.Code r. 335-3-1-.05*)
- Method 9 of 40 CFR 60, Appendix A, or an equivalent method approved by the Department shall be used in the determination of the opacity of the stack emissions. (*ADEM Admin.Code r. 335-3-1-.05*)
- If testing is required, VOC emissions shall be determined in accordance with Method 25a of 40 CFR 60, Appendix A. (*ADEM Admin Code r. 335-1-.05*)
- If testing is required, Styrene emissions shall be determined in accordance with Method 18 of 40 CFR 60, Appendix A. (*ADEM Admin Code r. 335-1-.05*)

Emission Monitoring:

- Particulate Matter
 - The facility shall perform a visual check, once per day, of the baghouse stack associated with this unit. This check shall be performed by a person familiar

with method 9. If the instantaneous opacity of emissions in excess of 10% are noted, and are not corrected within a period of 1 hour, then a method 9 must be performed within 4 hours of the observations. Maintenance shall be performed as needed. Any repairs or observed problems shall be recorded (*ADEM Admin. Code r. 335-3-16-.05*)

- The facility shall monitor and record the pressure drop across the baghouse once per day. Corrective action must be performed if the pressure drop falls out of the range that is established by the facility. (*ADEM Admin. Code r. 335-3-16-.05*)
- VOC
 - The thermal oxidizer of this unit shall be properly maintained, controlled, and operated to achieve 95% or greater destruction efficiency of all inlet volatile organic compounds. A proper control and operation limit on the thermal oxidizer operating temperature, as measured at the exit of the combustion chamber, shall be set based upon data from the initial performance test. The thermal oxidizer shall be operated so that the 3-hour temperature is greater than or equal to the temperature demonstrated during the latest compliance test, which showed compliance with the VOC limit, minus 50 °F.
If additional compliance test is performed on this unit, the facility must receive written permission from the Department to modify the thermal oxidizer temperature set point. If this additional performance test revealed that the VOC emissions were approaching to the permit limit, the Department would have the authority not to grant the additional 50 °F.
- This unit is not subject to 40 CFR 64 “*Compliance Assurance Monitoring*”.

Recordkeeping and Reporting Requirements:

- The facility shall maintain a record of all inspections, to include visible observations and Method 9 observations performed to satisfy the requirements of periodic monitoring. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of 5 years.
- If a visible emission observation is required using the 40 CFR, Part 60, Appendix A, Method 9, the results will be documented using an ADEM visible emissions observation report and the cause and corrective action taken will be documented in a form suitable for inspection.
- Maintenance records for the thermal oxidizer will be recorded. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of 5 years.

- The 3-hour average combustion chamber temperature of the thermal oxidizer will be recorded. Each record shall be maintained for a period of 5 years.
- The facility shall maintain a record of the pressure drop across the baghouse required under “Emission Monitoring”. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of 5 years.
- The facility must keep records showing monthly and 12 month rolling total of all natural gas used from the entire Lost Foam Operation. Each record must be contained for a period of 5 years.

**Casting Line #2 with Natural Gas-Fired Duct Burner (8.5 MMBtu/hr) with
Baghouse and Thermal Oxidizer (EP003)**

Process Description:

Molten aluminum from the casting line holding furnace is directed to the molten dip well via robotic transfer. From the dip well, molten aluminum is poured into the flask and the foam pattern is replaced and vaporized upon contact with the molten aluminum. After the molten aluminum is poured into the flask, the unit continues through a hooded cooling conveyor. Upon completion of initial cooling, the casting are removed from the flask and placed into a water quench by robotic transfer. The remaining flask contents (i.e. sand) are emptied onto the conveyor. After removal from the water bath, excess metal is removed using a degating saw. The casting is sent to the heat treatment and finishing department. The excess metal is returned to the melting furnace. Emissions from the casting line are controlled by a thermal oxidizer. To prevent the exhaust gases from condensing in the duct work before reaching the oxidizers, duct burners are used to keep the gas temperature high. Emissions from the combustion of natural gas in the duct burners are emitted through the baghouse/oxidizer.

Applicability:

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “Major Source Operating Permits”.
- This source is subject to ADEM Admin. Code r. 335-3-4-.04(1), “Control of Particulate Emissions for Process Industries – General”.
- This unit is subject to ADEM Admin. Code r. 335-3-4-.01(1), “Control of Particulate Emissions – Visible Emissions”.
- This unit has an enforceable limit in order to prevent it from being subject to the provisions of ADEM Admin Code r. 335-3-14-.06, “Requirement for Control Technology Determinations for Major Sources in Accordance with Clean Air Act Section 112(g).”
- This unit has an enforceable limit in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration].”

CAM Analysis:

Emission Point	PSEU Control Device?	PSEU Subject to Limit or Standard?	PSEU Potential Pre-Control Major?	PSEU Potential Post-Control Major?	PSEU Subject to CAM?

EP003	Baghouse	The lesser of Anti PSD or allowable set by ADEM Admin Code R. 335-3-4-.04(1)	No – PM<100 TPY	No – PM<100 TPY	<i>No</i>
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Emission Standards

- Opacity
 - ADEM Admin Code r. 335-4-.01(1)(a)(b), states no person shall discharge particulate emissions of an opacity greater than that designated as twenty (20%) percent opacity, as determined by a six (6) minute average. During one six (6) minute period a person may discharge into the atmosphere from any source of emission forty (40%) percent opacity.

- Particulate Matter
 - Particulate matter emissions from the stack associated with the casting line no. 1 shall not exceed the lesser of the Anti-PSD limit of 3.0 lbs/hr as required by ADEM Admin Code r. 335-3-14-.04

OR

the allowable set by ADEM Admin Code r. 335-3-4-.04(1), which states no person shall cause or permit the emission of particulate matter in excess of the amount for the process weight per hour allocated to such source accomplished by use of the equation:

$$E = 3.59 (P)^{0.62} \text{ (P less than 30 tons per hour)}$$

$$E = 17.31 (P)^{0.16} \text{ (P greater than 30 tons per hour)}$$

Where E = Emissions in pounds per hour
P = Process weight per hour in tons per hour

- NO_x
 - Natural gas usage for the entire Lost Foam Operation shall not exceed the Anti-PSD limit of 1,374.12 X 10⁶ ft³ during any consecutive 12 month period as required by ADEM Admin Code r. 335-3-14-.04 .

- VOC
 - The VOC emissions from this unit shall not exceed the Anti-PSD limit of 2.05 lb/hr as required by ADEM Admin Code r. 335-3-14-.04.

- Styrene
 - Styrene emission from this unit shall not exceed 0.68 lbs/hr. This limit was requested to avoid a 112(g) review. (ADEM Admin Code r. 335-3-14-.06)

Expected Emissions

The maximum expected emissions are as follows:

Pollutant	Expected Emissions (lb/hr)	Expected Emissions (TPY)
PM	.64	2.80
SO₂	.0038	.012
NO_x	.637	2.05
CO	.536	1.72
VOC	.02	.0876
Styrene	.38	1.66

The PM, VOC, and Styrene emissions were based on an emission test performed on January 10, 2002. SO₂, NO_x, and CO emissions were based on AP-42 emissions factors and operating 8,760 hours.

Compliance and Performance Test Methods and Procedures:

- If testing is required, particulate matter(PM) emissions shall be determined in accordance with Method 5 of 40 CFR 60, Appendix A. (ADEM Admin.Code r. 335-3-1-.05)
- Method 9 of 40 CFR 60, Appendix A, or an equivalent method approved by the Department shall be used in the determination of the opacity of the stack emissions. (ADEM Admin.Code r. 335-3-1-.05)
- If testing is required, VOC emissions shall be determined in accordance with Method 25a of 40 CFR 60, Appendix A. (ADEM Admin Code r. 335-1-.05)
- If testing is required, Styrene emissions shall be determined in accordance with Method 18 of 40 CFR 60, Appendix A. (ADEM Admin Code r. 335-1-.05)

Emission Monitoring:

- Particulate Matter
 - The facility shall perform a visual check, once per day, of the baghouse stack associated with this unit. This check shall be performed by a person familiar with method 9. If the instantaneous opacity of emissions in excess of 10% are noted, and are not corrected within a period of 1 hour, then a method 9 must be performed within 4 hours of the observations. Maintenance shall be performed

as needed. Any repairs or observed problems shall be recorded (*ADEM Admin. Code r. 335-3-16-.05*)

- The facility shall monitor and record the pressure drop across the baghouse once per day. Corrective action must be performed if the pressure drop falls out of the range that is established by the facility. (*ADEM Admin. Code r. 335-3-16-.05*)
- VOC
 - The thermal oxidizer of this unit shall be properly maintained, controlled, and operated to achieve 95% or greater destruction efficiency of all inlet volatile organic compounds. A proper control and operation limit on the thermal oxidizer operating temperature, as measured at the exit of the combustion chamber, shall be set based upon data from the initial performance test. The thermal oxidizer shall be operated so that the 3-hour temperature is greater than or equal to the temperature demonstrated during the latest compliance test, which showed compliance with the VOC limit, minus 50 °F.
If additional compliance test is performed on this unit, the facility must receive written permission from the Department to modify the thermal oxidizer temperature set point. If this additional performance test revealed that the VOC emissions were approaching to the permit limit, the Department would have the authority not to grant the additional 50 °F.
- This unit is not subject to 40 CFR 64 “*Compliance Assurance Monitoring*”.

Recordkeeping and Reporting Requirements:

- The facility shall maintain a record of all inspections, to include visible observations and Method 9 observations performed to satisfy the requirements of periodic monitoring. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of 5 years.
- If a visible emission observation is required using the 40 CFR, Part 60, Appendix A, Method 9, the results will be documented using an ADEM visible emissions observation report and the cause and corrective action taken will be documented in a form suitable for inspection.
- Maintenance records for the thermal oxidizer will be recorded. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of 5 years.
- The 3-hour average combustion chamber temperature of the thermal oxidizer will be recorded. Each record shall be maintained for a period of 5 years.

- The facility shall maintain a record of the pressure drop across the baghouse required under “Emission Monitoring”. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of 5 years.
- The facility must keep records showing monthly and 12 month rolling total of all natural gas used from the entire Lost Foam Operation. Each record must be contained for a period of 5 years.

Primary Holding/Melting Furnace (80 metric ton) (EP006)

Process Description

The primary holding furnace receives molten aluminum from an off-site source or melts internal scrap aluminum or raw aluminum ingots/sows and maintains the molten temperature in preparation of pouring.

Applicability:

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “Major Source Operating Permits”.
- This source is subject to ADEM Admin. Code r. 335-3-4-.04(1), “Control of Particulate Emissions for Process Industries – General”.
- This unit is subject to ADEM Admin. Code r. 335-3-4-.01(1), “Control of Particulate Emissions – Visible Emissions”.
- This unit has an enforceable limit in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration].”
- Since this facility is considered an area source of HAPs and meets the criteria given in §63.11544, this source must comply with the applicable requirements of 40 CFR Part 63 Subpart ZZZZZZ, “National Emission Standards for Hazardous Air Pollutants for Aluminum, Copper and other Nonferrous Foundries”.

Emission Point	PSEU Control Device?	PSEU Subject to Limit or Standard?	PSEU Potential Pre-Control Major?	PSEU Potential Post-Control Major?	PSEU Subject to CAM?
EP006	No	The lesser of Anti PSD or allowable set by ADEM Admin Code R. 335-3-4-.04(1)	No – <100 TPY	No – <100 TPY	<i>No</i>

Emission Standards

- Opacity

- ADEM Admin Code r. 335-4-.01(1)(a)(b), states no person shall discharge particulate emissions of an opacity greater than that designated as twenty (20%) percent opacity, as determined by a six (6) minute average. During one six (6) minute period a person may discharge into the atmosphere from any source of emission forty (40%) percent opacity.
- Particulate Matter
 - Particulate matter emissions from the stack associated with this unit shall not exceed the lesser of the Anit-PSD limit of 6.0 lbs/hr as required by ADEM Admin Code r. 335-3-14-.04
 - OR
 - the allowable set by ADEM Admin Code r. 335-3-4-.04(1), which states no person shall cause or permit the emission of particulate matter in excess of the amount for the process weight per hour allocated to such source accomplished by use of the equation:

$$E = 3.59 (P)^{0.62} \text{ (P less than 30 tons per hour)}$$

$$E = 17.31 (P)^{0.16} \text{ (P greater than 30 tons per hour)}$$
 Where E = Emissions in pounds per hour
 P = Process weight per hour in tons per hour
- NO_x
 - Natural gas usage for the entire Lost Foam Operation shall not exceed the Anti-PSD limit of 1,374.12 X 10⁶ ft³ during any consecutive 12 month period as required by ADEM Admin Code r. 335-3-14-.04 .
- Cover or enclose each melting furnace that is equipped with a cover or enclosure during melting to the extent practicable as required by 40 CFR §63.11550(a)(1).
- Purchase only metal scrap that has been depleted aluminum foundry HAP, except metal scrap purchased specifically for its HAP metal content in alloying or to meet specification for casting as required in Subpart ZZZZZZ (a)(2).

Expected Emissions

The maximum expected emissions are as follows:

Pollutant	Expected Emissions (lb/hr)	Expected Emissions (TPY)
PM	3.9	17.08
SO₂	.01	.044
NO_x	2.35	10.3

CO	1.98	8.67
VOC	1.7	7.45

The PM and VOC emissions were based on stack test data performed from a similar operation at Nemak’s facility in Dickson, Tennessee. SO₂, NO_x, and CO emissions were based on AP-42 emissions factors and operating 8,760 hours.

Compliance and Performance Test Methods and Procedures:

- If testing is required, particulate matter(PM) emissions shall be determined in accordance with Method 5 of 40 CFR 60, Appendix A. (*ADEM Admin.Code r. 335-3-1-.05*)
- Method 9 of 40 CFR 60, Appendix A, or an equivalent method approved by the Department shall be used in the determination of the opacity of the stack emissions. (*ADEM Admin.Code r. 335-3-1-.05*)
- If testing is required, VOC emissions shall be determined in accordance with Method 25a of 40 CFR 60, Appendix A. (*ADEM Admin Code r. 335-1-.05*)

Emission Monitoring:

- This unit is not subject to 40 CFR 64 “*Compliance Assurance Monitoring*”.
- Particulate Matter
 - The facility shall perform a visual check, once per week, of the stack associated with this unit. This check shall be performed by a person familiar with method 9. If the instantaneous opacity of emissions in excess of 10% are noted, and are not corrected within a period of 1 hour, then a method 9 must be performed within 4 hours of the observations. Maintenance shall be performed as needed. Any repairs or observed problems shall be recorded (*ADEM Admin. Code r. 335-3-16-.05*)
- Prepare and operate pursuant to a written management practices plan as required in §63.11550(a)(3).

Recordkeeping and Reporting Requirements:

- The facility shall maintain a record of all inspections, to include visible observations and Method 9 observations performed to satisfy the requirements of periodic monitoring. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of 5 years.

- If a visible emission observation is required using the 40 CFR, Part 60, Appendix A, Method 9, the results will be documented using an ADEM visible emissions observation report and the cause and corrective action taken will be documented in a form suitable for inspection.
- The facility must keep records showing monthly and 12 month rolling total of all natural gas used from the entire Lost Foam Operation. Each record must be contained for a period of 5 years.
- The facility shall maintain the following records as required by §63.11553(c):
 - You must keep a copy of each notification that you submit to comply with the subpart and all documentation supporting those notifications
 - You must keep records to document conformance with the management practices plan.
 - You must keep records of all performance tests, inspections, and monitoring data required by §63.11551 and 63.11552.
 - If you own or operate a new or existing affected source at a small foundry that is not subject to §63.11550(b), you must maintain records to document that your facility melts less than 6,000 tpy total of copper, other nonferrous metal, and all associated alloys (excluding aluminum) in each calendar year.
 - If you use a bag leak detection system, you must keep the records specified in paragraphs (c)(5)(i) through (iii) of this section.
- If a deviation occurs during a semiannual reporting period, you must submit a compliance report to your permitting authority according to the requirements in paragraphs (e)(1) and (2) of §63.11550.

**Two Natural Gas-Fired Heat Treating Furnaces (15 MMBtu/hr, each)
(EP007A & B)**

Process Description

Cast aluminum blocks and cylinder heads are heat treated. The castings are placed in continuous heat treat furnaces, which are heated to approximately 275 °C for a specified amount of time. Each of the heat treat furnaces has maximum heat input of 15 MMBtu per hour.

Applicability:

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “Major Source Operating Permits”.
- These sources are subject to ADEM Admin. Code r. 335-3-4-.03, “Control of Particulate Emissions for Process Industries – Fuel Burning Equipment”.
- These units have an enforceable limit in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration].”

Emission Point	PSEU Control Device?	PSEU Subject to Limit or Standard?	PSEU Potential Pre-Control Major?	PSEU Potential Post-Control Major?	PSEU Subject to CAM?
EP007A & B	No	Anti-PSD	No – <100 TPY	No – <100 TPY	<i>No</i>

Emissions Standards:

- Particulate Matter
 - Particulate matter emissions from these units shall not exceed the allowable set by ADEM Admin Code r. 335-3-4-.03, which states no person shall cause or permit the emission of particulate matter from fuel burning equipment in a Class 1 County in excess of the amount set in the following equation:

$$E = 1.38H^{0.44}$$

Where E = Emissions in lb/million BTU
H = Heat Input in millions of BTU/hr

- NO_x

- Natural gas usage for the entire Lost Foam Operation shall not exceed the Anit-PSD limit of $1,374.12 \times 10^6 \text{ ft}^3$ during any consecutive 12 month period as required by ADEM Admin Code r. 335-3-14-.04 .

Expected Emissions

The maximum expected emissions are as follows:

Pollutant	Expected Emissions (lb/hr)	Expected Emissions (TPY)
PM	2.0	8.76
SO₂	.02	.044
NO_x	2.94	12.87
CO	2.47	10.8
VOC	.16	.71

The PM emissions were based on emission data performed from a similar operation. SO₂, NO_x, and CO emissions were based on AP-42 emissions factors and operating 8,760 hours.

Compliance and Performance Test Methods and Procedures:

N/A

Emission Monitoring

- These units are not subject to the requirements of 40 CFR 64 “*Compliance Assurance Monitoring*”.

Recordkeeping and Reporting Requirements:

- The facility must keep records showing monthly and 12 month rolling total of all natural gas used from the entire Lost Foam Operation. Each record must be contained for a period of 5 years.

**Two Sand Reclaim Furnaces and Two Reclaim Sand Silos with Two Baghouses
(Sharing a Common Stack) (EP008)**

Process Description

New/reclaimed sand silos receive sand from a vendor and the sand reclaim system. The silos service process sand located at the cast lines. The emissions from the sand reclaim system are controlled by a dust collection system (estimated efficiency of 99% removal) which passes through a baghouse. The sand reclaim furnaces are used to destroy foam and coating residuals which accumulate in the sand. The sand is then cooled and returned for reuse to the sand system. The emissions from the furnaces are exhausted to the sand reclaim baghouses.

Applicability:

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “Major Source Operating Permits”.
- This source is subject to ADEM Admin. Code r. 335-3-4-.04(1), “Control of Particulate Emissions for Process Industries – General”.
- This unit is subject to ADEM Admin. Code r. 335-3-4-.01(1), “Control of Particulate Emissions – Visible Emissions”.
- This unit has an enforceable limit in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration].”

CAM Analysis:

Emission Point	PSEU Control Device?	PSEU Subject to Limit or Standard?	PSEU Potential Pre-Control Major?	PSEU Potential Post-Control Major?	PSEU Subject to CAM?
EP008	Baghouse	The lesser of Anti PSD or allowable set by ADEM Admin Code R. 335-3-4-.04(1)	No – PM<100 TPY	No – PM<100 TPY	<i>No</i>

Emission Standards

- Opacity
 - ADEM Admin Code r. 335-4-.01(1)(a)(b), states no person shall discharge particulate emissions of an opacity greater than that designated as twenty (20%) percent opacity, as determined by a six (6) minute average. During one six (6)

minute period a person may discharge into the atmosphere from any source of emission forty (40%) percent opacity.

- Particulate Matter
 - Particulate matter emissions from each combined furnace and silo (one furnace and one silo) shall not exceed the lesser of the Anit-PSD limit of 3.24 lbs/hr as required by ADEM Admin Code r. 335-3-14-.04

OR

the allowable set by ADEM Admin Code r. 335-3-4-.04(1), which states no person shall cause or permit the emission of particulate matter in excess of the amount for the process weight per hour allocated to such source accomplished by use of the equation:

$E = 3.59 (P)^{0.62}$ (P less than 30 tons per hour)
 $E = 17.31 (P)^{0.16}$ (P greater than 30 tons per hour)
 Where E = Emissions in pounds per hour
 P = Process weight per hour in tons per hour

- NO_x
 - Natural gas usage for the entire Lost Foam Operation shall not exceed the Anit-PSD limit of 1,374.12 X 10⁶ ft³ during any consecutive 12 month period as required by ADEM Admin Code r. 335-3-14-.04 .
- VOC
 - VOC emissions from each furnace shall not exceed the Anti-PSD limit of 1.2 lbs/hr. (ADEM Admin Code r. 335-3-14-.04) (2.4 lb/hr for both units)

Expected Emissions

The maximum expected emissions are as follows:

Pollutant	Expected Emissions (lb/hr)	Expected Emissions (TPY)
PM	4.32	18.92
SO₂	.01	0.044
NO_x	2.35	10.3
CO	1.98	8.67
VOC	2.4	10.51
Styrene	.29	1.27

The PM, VOC, and Styrene emissions were based on an emission test performed on January 10, 2002. SO₂, NO_x, and CO emissions were based on AP-42 emissions factors and operating 8,760 hours.

Compliance and Performance Test Methods and Procedures:

- If testing is required, particulate matter(PM) emissions shall be determined in accordance with Method 5 of 40 CFR 60, Appendix A. (*ADEM Admin.Code r. 335-3-1-.05*)
- Method 9 of 40 CFR 60, Appendix A, or an equivalent method approved by the Department shall be used in the determination of the opacity of the stack emissions. (*ADEM Admin.Code r. 335-3-1-.05*)
- If testing is required, VOC emissions shall be determined in accordance with Method 25a of 40 CFR 60, Appendix A. (*ADEM Admin Code r. 335-1-.05*)

Emission Monitoring:

- Particulate Matter
 - The facility shall perform a visual check, once per day, of the baghouse stack associated with this unit. This check shall be performed by a person familiar with method 9. If the instantaneous opacity of emissions in excess of 10% are noted, and are not corrected within a period of 1 hour, then a method 9 must be performed within 4 hours of the observations. Maintenance shall be performed as needed. Any repairs or observed problems shall be recorded (*ADEM Admin. Code r. 335-3-16-.05*)
 - The facility shall monitor and record the pressure drop across the baghouse once per day. Corrective action must be performed if the pressure drop falls out of the range that is established by the facility. (*ADEM Admin. Code r. 335-3-16-.05*)
- These units are not subject to the requirements of 40 CFR 64 “*Compliance Assurance Monitoring*”.

Recordkeeping and Reporting Requirements:

- The facility shall maintain a record of all inspections, to include visible observations and Method 9 observations performed to satisfy the requirements of periodic monitoring. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of 5 years.
- If a visible emission observation is required using the 40 CFR, Part 60, Appendix A, Method 9, the results will be documented using an ADEM visible emissions observation

report and the cause and corrective action taken will be documented in a form suitable for inspection.

- The facility shall maintain a record of the pressure drop across the baghouse required under “Emission Monitoring”. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of 5 years.
- The facility must keep records showing monthly and 12 month rolling total of all natural gas used from the entire Lost Foam Operation. Each record must be contained for a period of 5 years.

Two Natural Gas-Fired Boilers (One 35 MMBtu/hr Natural Gas Fired Boiler and One 32.7 MMBtu/hr Natural Gas Fired Boiler) (EP009A & B)

Process Description

One 35 MMBtu/hr natural gas-fired boiler (EP009A) and one 32.7 MMBtu/hr Natural Gas Fired Boiler (EP009B) are in operation at the Nemark facility. Only one boiler is used on a regular basis. The remaining boiler is a standby backup unit that operates only when the other boiler is not operating.

Applicability:

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “Major Source Operating Permits”.
- These sources are subject to ADEM Admin. Code r. 335-3-4-.03, “Control of Particulate Emissions for Process Industries – Fuel Burning Equipment”.
- These units have an enforceable limit in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration].”
- These units meet the criteria given in §60.40c(a) and are subject to the applicable requirements of 40 CFR Part 60 Subpart Dc. “Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.”
- These units are not subject to the requirements of 40 CFR 63 Subpart JJJJJ “National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources”. This subpart does not apply to gas fired units.

Emission Point	PSEU Control Device?	PSEU Subject to Limit or Standard?	PSEU Potential Pre-Control Major?	PSEU Potential Post-Control Major?	PSEU Subject to CAM?
EP009A & B	No	The lesser of Anti PSD or allowable set by ADEM Admin Code R. 335-3-4-.04(1)	No – <100 TPY	No – <100 TPY	<i>No</i>

Emissions Standards:

- Particulate Matter

- Particulate matter emissions from these units shall not exceed the allowable set by ADEM Admin Code r. 335-3-4-.03, which states no person shall cause or permit the emission of particulate matter from fuel burning equipment in a Class 1 County in excess of the amount set in the following equation:

$$E = 1.38H^{0.44}$$

Where E = Emissions in lb/million BTU

H = Heat Input in millions of BTU/hr

- NO_x
 - Natural gas usage for the entire Lost Foam Operation shall not exceed the Anit-PSD limit of 1,374.12 X 10⁶ ft³ during any consecutive 12 month period as required by ADEM Admin Code r. 335-3-14-.04.

Expected Emissions

The maximum expected emissions for the 35 MMBtu/hr boiler are as follows:

Pollutant	Expected Emissions (lb/hr)	Expected Emissions (TPY)
PM	.25	1.1
SO₂	.02	.09
NO_x	3.28	14.4
CO	2.76	12.1
VOC	.18	.79

PM, SO₂, NO_x, VOC's, and CO emissions were based on AP-42 emissions factors and operating 8,760 hours on Natural Gas.

The maximum expected emissions for the 32.7 MMBtu/hr boiler are as follows:

Pollutant	Expected Emissions (lb/hr)	Expected Emissions (TPY)
PM	.25	1.1
SO₂	.06	.24
NO_x	2.31	10.1
CO	1.31	5.72
VOC	.13	.57

PM, SO₂, NO_x, VOC's, and CO emissions were based on AP-42 emissions factors and operating 8,760 hours on Natural Gas.

Compliance and Performance Test Methods and Procedures:

- If testing is required, particulate matter(PM) emissions shall be determined in accordance with Method 5 of 40 CFR 60, Appendix A. (*ADEM Admin.Code r. 335-3-1-.05*)
- Method 9 of 40 CFR 60, Appendix A, or an equivalent method approved by the Department shall be used in the determination of the opacity of the stack emissions. (*ADEM Admin.Code r. 335-3-1-.05*)

Emission Monitoring

- These units are not subject to the requirements of 40 CFR 64 “*Compliance Assurance Monitoring*”.

Recordkeeping and Reporting Requirements:

- The owner or operator shall record and maintain records of the amount of fuel that is combusted during each month prorated for each boiler. The record shall be maintained for at least 5 years. (40 CFR Part 60, Subpart Dc 68.48 c(g)) (Determination Detail Control #0300113)
- The facility must keep records showing monthly and 12 month rolling total of all natural gas used from the entire Lost Foam Operation. Each record must be contained for a period of 5 years.

**4 Casting Line Holding Furnaces (2 furnaces on each line share an emission point)
(one 7 metric ton per line and one 4 metric ton per line) (EP010A & B)**

Process Description

Molten aluminum from the primary Lost Foam melting furnace is transferred for use in the casting lines.

Applicability:

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “Major Source Operating Permits”.
- These sources are subject to ADEM Admin. Code r. 335-3-4-.04(1), “Control of Particulate Emissions for Process Industries – General”.
- These units are subject to ADEM Admin. Code r. 335-3-4-.01(1), “Control of Particulate Emissions – Visible Emissions”.
- These units have an enforceable limit in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration].”

Emission Point	PSEU Control Device?	PSEU Subject to Limit or Standard?	PSEU Potential Pre-Control Major?	PSEU Potential Post-Control Major?	PSEU Subject to CAM?
EP010	No	The lesser of Anti PSD or allowable set by ADEM Admin Code R. 335-3-4-.04(1)	No – <100 TPY	No – <100 TPY	<i>No</i>

Emission Standards

- Opacity
 - ADEM Admin Code r. 335-4-.01(1)(a)(b), states no person shall discharge particulate emissions of an opacity greater than that designated as twenty (20%) percent opacity, as determined by a six (6) minute average. During one six (6) minute period a person may discharge into the atmosphere from any source of emission forty (40%) percent opacity.
- Particulate Matter

- Particulate matter emissions from these units shall not exceed the lesser of the Anit-PSD limit of 0.76 lbs/hr as required by ADEM Admin Code r. 335-3-14-.04.

OR

the allowable set by ADEM Admin Code r. 335-3-4-.04(1), which states no person shall cause or permit the emission of particulate matter in excess of the amount for the process weight per hour allocated to such source accomplished by use of the equation:

$$E = 3.59 (P)^{0.62} \text{ (P less than 30 tons per hour)}$$

$$E = 17.31 (P)^{0.16} \text{ (P greater than 30 tons per hour)}$$

Where E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

- NO_x
 - Natural gas usage for the entire Lost Foam Operation shall not exceed the Anit-PSD limit of 1,374.12 X 10⁶ ft³ during any consecutive 12 month period as required by ADEM Admin Code r. 335-3-14-.04 .

Expected Emissions

The maximum expected emissions are as follows:

Pollutant	Expected Emissions (lb/hr)	Expected Emissions (TPY)
PM	.76	3.33
SO₂	.004	.018
NO_x	.58	2.54
CO	.49	2.15
VOC	.032	.14

The PM emissions were based on stack test data performed from a similar operation at Nemak’s facility in Dickson, Tennessee. SO₂, NO_x, VOC, and CO emissions were based on AP-42 emissions factors and operating 8,760 hours.

Compliance and Performance Test Methods and Procedures:

- If testing is required, particulate matter(PM) emissions shall be determined in accordance with Method 5 of 40 CFR 60, Appendix A. (ADEM Admin.Code r. 335-3-1-.05)
- Method 9 of 40 CFR 60, Appendix A, or an equivalent method approved by the Department shall be used in the determination of the opacity of the stack emissions. (ADEM Admin.Code r. 335-3-1-.05)

Emission Monitoring:

- Particulate Matter
 - The facility shall perform a visual check, once per week, of the stack associated with this unit. This check shall be performed by a person familiar with method 9. If the instantaneous opacity of emissions in excess of 10% are noted, and are not corrected within a period of 1 hour, then a method 9 must be performed within 4 hours of the observations. Maintenance shall be performed as needed. Any repairs or observed problems shall be recorded (*ADEM Admin. Code r. 335-3-16-.05*)
- These units are not subject to the requirements of 40 CFR 64 “*Compliance Assurance Monitoring*”.

Recordkeeping and Reporting Requirements:

- The facility shall maintain a record of all inspections, to include visible observations and Method 9 observations performed to satisfy the requirements of periodic monitoring. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of 5 years.
- If a visible emission observation is required using the 40 CFR, Part 60, Appendix A, Method 9, the results will be documented using an ADEM visible emissions observation report and the cause and corrective action taken will be documented in a form suitable for inspection.
- The facility must keep records showing monthly and 12 month rolling total of all natural gas used from the entire Lost Foam Operation. Each record must be contained for a period of 5 years.

Sixteen (16) Die Casting Lines (EP013)

Process Description

Molten aluminum from the casting line holding furnace is directed to the molten dip well. From the dip well, via robotic transfer, molten is poured into the die and the aluminum part is formed. The castings are removed from the die and placed into a water quench by robotic transfer.

Applicability:

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “Major Source Operating Permits”.
- This unit is subject to ADEM Admin. Code r. 335-3-4-.01(1), “Control of Particulate Emissions – Visible Emissions”..
- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04, “Control of Particulate Emission – Process Industries – General”.

Emission Point	PSEU Control Device?	PSEU Subject to Limit or Standard?	PSEU Potential Pre-Control Major?	PSEU Potential Post-Control Major?	PSEU Subject to CAM?
EP013	No	Allowable set by ADEM Admin Code R. 335-3-4-.04(1)	No – <100 TPY	No – <100 TPY	<i>No</i>

Emission Standards

- Opacity
 - ADEM Admin Code r. 335-4-.01(1)(a)(b), states no person shall discharge particulate emissions of an opacity greater than that designated as twenty (20%) percent opacity, as determined by a six (6) minute average. During one six (6) minute period a person may discharge into the atmosphere from any source of emission forty (40%) percent opacity.
- Particulate Matter
 - ADEM Admin Code r. 335-3-4-.04(1), states no person shall cause or permit the emission of particulate matter in excess of the amount for the process weight per hour allocated to such source accomplished by use of the equation:

$$E = 3.59 (P)^{0.62} \text{ (P less than 30 tons per hour)}$$

$$E = 17.31 (P)^{0.16} \text{ (P greater than 30 tons per hour)}$$

Where E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

Expected Emissions

The maximum expected emissions are as follows:

Pollutant	Expected Emissions (lb/hr)	Expected Emissions (TPY)
PM	.38	1.68
VOC	4.71	20.6

The PM and VOC emissions were based on process knowledge operating 8,760 hours.

Compliance and Performance Test Methods and Procedures:

- If testing is required, particulate matter(PM) emissions shall be determined in accordance with Method 5 of 40 CFR 60, Appendix A. (*ADEM Admin.Code r. 335-3-1-.05*)
- Method 9 of 40 CFR 60, Appendix A, or an equivalent method approved by the Department shall be used in the determination of the opacity of the stack emissions. (*ADEM Admin.Code r. 335-3-1-.05*)
- If testing is required, VOC emissions shall be determined in accordance with Method 25a of 40 CFR 60, Appendix A. (*ADEM Admin Code r. 335-1-.05*)

Emission Monitoring:

- This source is subject to no additional specific requirements other than those listed in the General Provisos.
- These units are not subject to the requirements of 40 CFR 64 “*Compliance Assurance Monitoring*”.

Recordkeeping and Reporting Requirements:

- This source is subject to no additional specific requirements other than those listed in the General Provisos.

Sixteen (16) 3.5 Metric Ton Die Casting Line Holding Furnaces (EP014)

Process Description

Molten aluminum is transferred from the primary holding furnaces to the die-casting machines' holding furnaces. The molten aluminum in the die-casting machines' holding furnaces is poured into the die cast machines and the part is cast from the die.

Applicability:

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “Major Source Operating Permits”.
- This source is subject to ADEM Admin. Code r. 335-3-4-.04(1), “Control of Particulate Emissions for Process Industries – General”.
- This unit is subject to ADEM Admin. Code r. 335-3-4-.01(1), “Control of Particulate Emissions – Visible Emissions”.
- This unit has an enforceable limit in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration].”

Emission Point	PSEU Control Device?	PSEU Subject to Limit or Standard?	PSEU Potential Pre-Control Major?	PSEU Potential Post-Control Major?	PSEU Subject to CAM?
EP014	No	The lesser of Anti PSD or allowable set by ADEM Admin Code R. 335-3-4-.04(1)	No – <100 TPY	No – <100 TPY	<i>No</i>

Emission Standards

- Opacity
 - ADEM Admin Code r. 335-4-.01(1)(a)(b), states no person shall discharge particulate emissions of an opacity greater than that designated as twenty (20%) percent opacity, as determined by a six (6) minute average. During one six (6) minute period a person may discharge into the atmosphere from any source of emission forty (40%) percent opacity.
- Particulate Matter

- Particulate matter emissions from these units shall not exceed the lesser of the Anit-PSD limit of 2.28 lbs/hr as required by ADEM Admin Code r. 335-3-14-.04

OR

the allowable set by ADEM Admin Code r. 335-3-4-.04(1), which states no person shall cause or permit the emission of particulate matter in excess of the amount for the process weight per hour allocated to such source accomplished by use of the equation:

$$E = 3.59 (P)^{0.62} \text{ (P less than 30 tons per hour)}$$

$$E = 17.31 (P)^{0.16} \text{ (P greater than 30 tons per hour)}$$

Where E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

Compliance and Performance Test Methods and Procedures:

- If testing is required, particulate matter(PM) emissions shall be determined in accordance with Method 5 of 40 CFR 60, Appendix A. (*ADEM Admin.Code r. 335-3-1-.05*)
- Method 9 of 40 CFR 60, Appendix A, or an equivalent method approved by the Department shall be used in the determination of the opacity of the stack emissions. (*ADEM Admin.Code r. 335-3-1-.05*)

Emission Monitoring:

- This source is subject to no additional specific requirements other than those listed in the General Provisos.
- These units are not subject to the requirements of 40 CFR 64 “*Compliance Assurance Monitoring*”.

Recordkeeping and Reporting Requirements:

- This source is subject to no additional specific requirements other than those listed in the General Provisos.

Heat Treat Furnace (EP015)

Process Description

Cast aluminum blocks and cylinder heads are heat treated. The castings are placed in continuous heat treat furnaces, which are heated to approximately 275°C for a specified amount of time. Each of the heat treat furnaces has maximum heat input of 15 MMBtu per hour.

Applicability:

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “*Major Source Operating Permits*”.
- This source is subject to ADEM Admin. Code r. 335-3-4-.04(1), “Control of Particulate Emissions for Process Industries – General”.
- This unit is subject to ADEM Admin. Code r. 335-3-4-.01(1), “Control of Particulate Emissions – Visible Emissions”.
- This unit has an enforceable limit in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration].”

Emission Point	PSEU Control Device?	PSEU Subject to Limit or Standard?	PSEU Potential Pre-Control Major?	PSEU Potential Post-Control Major?	PSEU Subject to CAM?
EP015	No	The lesser of Anti PSD or allowable set by ADEM Admin Code R. 335-3-4-.04(1)	No – <100 TPY	No – <100 TPY	<i>No</i>

Expected Emissions

The maximum expected emissions are as follows:

Pollutant	Expected Emissions (lb/hr)	Expected Emissions (TPY)
PM	0.11	0.49
SO₂	.01	.04
NO_x	1.47	6.44
CO	1.24	5.41
VOC	.16	.71

PM, SO₂, NO_x, and CO emissions were based on AP-42 emissions factors and operating 8,760 hours.

Emission Standards

- Opacity
 - ADEM Admin Code r. 335-4-.01(1)(a)(b), states no person shall discharge particulate emissions of an opacity greater than that designated as twenty (20%) percent opacity, as determined by a six (6) minute average. During one six (6) minute period a person may discharge into the atmosphere from any source of emission forty (40%) percent opacity.

- Particulate Matter
 - Particulate matter emissions from this unit shall not exceed the lesser of the Anit-PSD limit of 1.0 lbs/hr as required by ADEM Admin Code r. 335-3-14-.04

OR

the allowable set by ADEM Admin Code r. 335-3-4-.04(1), which states no person shall cause or permit the emission of particulate matter in excess of the amount for the process weight per hour allocated to such source accomplished by use of the equation:

$$E = 3.59 (P)^{0.62} \text{ (P less than 30 tons per hour)}$$

$$E = 17.31 (P)^{0.16} \text{ (P greater than 30 tons per hour)}$$

Where E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

Compliance and Performance Test Methods and Procedures:

- If testing is required, particulate matter(PM) emissions shall be determined in accordance with Method 5 of 40 CFR 60, Appendix A. (*ADEM Admin.Code r. 335-3-1-.05*)
- Method 9 of 40 CFR 60, Appendix A, or an equivalent method approved by the Department shall be used in the determination of the opacity of the stack emissions. (*ADEM Admin.Code r. 335-3-1-.05*)

Emission Monitoring:

- Particulate Matter
 - The facility shall perform a visual check, once per day, of the stack associated with these units. This check shall be performed by a person familiar with method 9. If the instantaneous opacity of emissions in excess of 10% are noted, and are not corrected within a period of 1 hour, then a method 9 must be performed within 4 hours of the observations. Maintenance shall be performed as needed. Any repairs or observed problems shall be recorded (*ADEM Admin. Code r. 335-3-16-.05*)
- These units are not subject to the requirements of 40 CFR 64 “*Compliance Assurance Monitoring*”.

Recordkeeping and Reporting Requirements:

- Particulate Matter
 - The facility shall perform a visual check, once per week, of the stack associated with this unit. This check shall be performed by a person familiar with method 9. If the instantaneous opacity of emissions in excess of 10% are noted, and are not corrected within a period of 1 hour, then a method 9 must be performed within 4 hours of the observations. Maintenance shall be performed as needed. Any repairs or observed problems shall be recorded (*ADEM Admin. Code r. 335-3-16-.05*)
- The facility shall maintain a record of all inspections, to include visible observations and Method 9 observations performed to satisfy the requirements of periodic monitoring. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of 5 years.
- If a visible emission observation is required using the 40 CFR, Part 60, Appendix A, Method 9, the results will be documented using an ADEM visible emissions observation report and the cause and corrective action taken will be documented in a form suitable for inspection.

Two Holding/Melting Furnaces (One 80 ton Holding/Melting Furnace and One 75-ton Holding/Melting Furnace) (EP016 and EP017)

Process Description

The holding furnaces receive molten aluminum from an off-site source or melts internal scrap aluminum or raw aluminum ingots/sows and maintains the molten temperature in preparation of pouring. Additionally, these units are capable of melting internal aluminum scrap and ingots/sows in a side well.

Applicability:

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, “Major Source Operating Permits”.
- These sources are subject to ADEM Admin. Code r. 335-3-4-.04(1), “Control of Particulate Emissions for Process Industries – General”.
- These units are subject to ADEM Admin. Code r. 335-3-4-.01(1), “Control of Particulate Emissions – Visible Emissions”.
- These units have an enforceable limit in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, “Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration].”
- This source is not subject to the applicable requirements of 40 CFR Part 63 Subpart ZZZZZZ, “National Emission Standards for Hazardous Air Pollutants for Aluminum, Copper and other Nonferrous Foundries”, as die casting operations are exempt from this subpart.

Emission Point	PSEU Control Device?	PSEU Subject to Limit or Standard?	PSEU Potential Pre-Control Major?	PSEU Potential Post-Control Major?	PSEU Subject to CAM?
EP016	No	The lesser of Anti PSD or allowable set by ADEM Admin Code R. 335-3-4-.04(1)	No – <100 TPY	No – <100 TPY	<i>No</i>

EP017	No	The lesser of Anti PSD or allowable set by ADEM Admin Code R. 335-3-4-.04(1)	No – <100 TPY	No – <100 TPY	No
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Emission Standards

- Opacity
 - ADEM Admin Code r. 335-4-.01(1)(a)(b), states no person shall discharge particulate emissions of an opacity greater than that designated as twenty (20%) percent opacity, as determined by a six (6) minute average. During one six (6) minute period a person may discharge into the atmosphere from any source of emission forty (40%) percent opacity.
- Particulate Matter
 - Particulate matter emissions from each of the holding/melting furnaces shall not exceed the lesser of the Anit-PSD limit of 6.0 lbs/hr, as required by ADEM Admin Code r. 335-3-14-.04

OR

the allowable set by ADEM Admin Code r. 335-3-4-.04(1), which states no person shall cause or permit the emission of particulate matter in excess of the amount for the process weight per hour allocated to such source accomplished by use of the equation:

$$E = 3.59 (P)^{0.62} \text{ (P less than 30 tons per hour)}$$

$$E = 17.31 (P)^{0.16} \text{ (P greater than 30 tons per hour)}$$

Where E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

Expected Emissions

The maximum expected emissions are as follows:

Pollutant	Expected Emissions (lb/hr)	Expected Emissions (TPY)
PM	2.0	8.76
SO ₂	.01	.044
NO _x	1.09	4.77
CO	.91	3.99
VOC	.06	.26

The PM and VOC emissions were based on stack test data performed from a similar operation at Nemak's facility in Dickson, Tennessee. SO₂, NO_x, and CO emissions were based on AP-42 emissions factors and operating 8,760 hours.

Compliance and Performance Test Methods and Procedures:

- If testing is required, particulate matter(PM) emissions shall be determined in accordance with Method 5 of 40 CFR 60, Appendix A. (ADEM Admin.Code r. 335-3-1-.05)
- Method 9 of 40 CFR 60, Appendix A, or an equivalent method approved by the Department shall be used in the determination of the opacity of the stack emissions. (ADEM Admin.Code r. 335-3-1-.05)
- If testing is required, VOC emissions shall be determined in accordance with Method 25a of 40 CFR 60, Appendix A. (ADEM Admin Code r. 335-1-.05)

Emission Monitoring:

- Particulate Matter
 - The facility shall perform a visual check, once per week, of the stacks associated with these units. This check shall be performed by a person familiar with method 9. If the instantaneous opacity of emissions in excess of 10% are noted, and are not corrected within a period of 1 hour, then a method 9 must be performed within 4 hours of the observations. Maintenance shall be performed as needed. Any repairs or observed problems shall be recorded (ADEM Admin. Code r. 335-3-16-.05)
- These units are not subject to the requirements of 40 CFR 64 "Compliance Assurance Monitoring".

Recordkeeping and Reporting Requirements:

- The facility shall maintain a record of all inspections, to include visible observations and Method 9 observations performed to satisfy the requirements of periodic monitoring. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of 5 years.
- If a visible emission observation is required using the 40 CFR, Part 60, Appendix A, Method 9, the results will be documented using an ADEM visible emissions observation report and the cause and corrective action taken will be documented in a form suitable for inspection.

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Date