INFORMATION RELATIVE TO THE DRAFT TITLE V OPERATING PERMIT February 2025

GENERAL FACILITY INFORMATION

Facility Name: Darling Ingredients Inc
Facility Address: 1299 Prisock Road, Jackson, MS 39272
County: Hinds
SIC Code(s): 2077, Animal and Marine Fats and Oils
NAICS Code(s): 311613, Rendering and Meat Byproduct Processing

APPLICATION SUMMARY

Permit No.: 1080-00040	NSPS (Part 60): Dc, JJJJ
Permit Action: Renewal	NESHAP (Part 61): N/A
Permit Folder: PER20230001	NESHAP (Part 63): JJJJJJ, ZZZZ
Application Receipt Date: November 30, 2023	112(r) / RMP: N/A
Application Deemed Complete: January 09, 2024	Other: N/A
CBI Submitted? No	

FACILITY DESCRIPTION

Darling Ingredients Inc., (Darling) is an existing facility located in Jackson, Mississippi. The facility processes meat and bone scrap poultry offal and spent restaurant grease into bone meal, poultry meal, feather meal, blood meal, and processed grease. The following table contains a list of the significant emission points contained in the proposed permit.

Emission Point	Description	
AA-003	15,600-gallon fuel oil storage tank	
AA-004a	Venturi Scrubber controlling emissions from the Recycling Process (AA-009, AA-010, AA-016, AA-019, and AA-026). The gas stream from the scrubber is then routed through the Packed Tower Scrubber (AA-04b) followed by the Regenerative Thermal Oxidizer (RTO) (AA-027).	
AA-004b	Packed Tower Scrubber unit used to control emissions from the Recycling Process (AA-009, AA-010, AA-016, AA-019 and AA-026); operates in series with AA-004a and AA-027	
AA-005	Cross Flow Scrubber which collects and controls fugitive malodor emissions from the process building.	
AA-009	54.42 TPH Poultry Line with #1, #2, and #4 cookers with emissions controlled by AA-004a, AA-004b, and AA-027 (operating in series); fugitive malodor emissions are controlled by AA-005.	
AA-010	10.07 TPH Poultry Line with #3 cooker with emissions controlled by AA-004a, AA-004b, and AA-027 (operating in series); fugitive malodor emissions are controlled by AA-005.	
AA-013	8.8 TPH Restaurant Cooking Oil Line which consists of receiving, screening, storing, heating, gravity separation, and product storage equipment.	

Emission Point	Description
AA-016	10 TPH Steam-tube Blood Dryer Line with process emissions controlled by AA-004a, AA-004b, and AA-027 (operating in series); fugitive malodor emissions are controlled by AA-018 (AA-004b used as a backup).
AA-018	Cross Flow Scrubber which collects and controls fugitive malodor emissions from the process building.
AA-019	25.0 TPH Steam-tube Feather Dryer Line with process emissions controlled by AA-004a, AA-004b, and AA-027 (operating in series); fugitive malodor emissions are controlled by AA-018.
AA-020	50.4 MMBTU/hr (1,200 HP / 895 kW) Hurst Boiler combusting natural gas, low-sulfur diesel fuel, or processed fats.
AA-021	50.4 MMBTU/hr (1,200 HP / 895 kW) Hurst Boiler combusting natural gas, low-sulfur diesel fuel, or processed fats.
AA-022	50.4 MMBTU/hr (1,200 HP / 895 kW) Hurst Boiler combusting natural gas, low-sulfur diesel fuel, or processed fats.
AA-023	50.4 MMBTU/hr (1,200 HP / 895 kW) Hurst Boiler combusting natural gas, low-sulfur diesel fuel, or processed fats.
AA-024	48 MMBTU/hr (1,150 HP / 858 kW) Hurst Boiler combusting natural gas, low-sulfur diesel fuel, or processed fats.
AA-025	48 MMBTU/hr (1,150 HP / 858 kW) Hurst Boiler combusting natural gas, low-sulfur diesel fuel, or processed fats.
AA-026	23.33 TPH Poultry Line with #5 cooker with emissions controlled by AA-004a, AA-004b, and AA-027 (operating in series); fugitive malodor emissions are controlled by AA-018.
AA-027	5.0 Regenerative Thermal Oxidizer (RTO) controlling emissions from the scrubbers, AA-004a and AA-004b (operates in series), which control emissions from AA-009, AA-010, AA-016, AA-019, and AA-026.
AA-028	67 HP (40 kW / 0.509 MMBTU/hr) natural gas-fired, spark ignition, 4-stroke lean-burn emergency generator used to provide emergency power for AA-027 (Winco – Model Year 2014).
AA-029	Biogas Flare used to combust biogas emissions generated from the anaerobic lagoon
AA-030	29.5 HP (22 kW / 0.322 MMBTU/hr) propane or natural gas-fired, spark ignition, 4-stroke lean-burn emergency generator used to provide emergency power to the motor control center (MCC) electrical room or the administrative office (Generac – Model Year 2022).

TITLE V SOURCE APPLICABILITY

The facility's potential-to-emit (PTE) exceeds the Title V major source threshold of 100 tons per year (tpy) for each of the following criteria air pollutants: Nitrogen Oxides (NO_x), Carbon Monoxide (CO), and Sulfur Dioxide (SO₂). The facility's potential-to-emit hazardous air pollutants does not exceed the major source threshold of 25 tpy of total HAPs and 10 tpy for any individual HAP.

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Pollutant	PTE Emissions (tons/yr)
Particulate Matter (TSP)	73.01
PM ₁₀	55.45
PM _{2.5}	35.93
Sulfur Dioxide (SO ₂)	123.76
Nitrogen Oxides (NO _x)	217.33
Carbon Monoxide (CO)	111.21
Volatile Organic Compounds (VOC)	69.78
Total Reduced Sulfur (TRS)	38.25
Lead	0.01
CFC/HCFC	0.00
Total HAP	2.57

Facility-Wide Potential-to-Emit Summary¹

¹ The PTE emissions reflect any emission limits or enforceable restrictions (i.e., process emissions are required to be controlled) included in the proposed permit.

PREVENTION OF SIGNIFICANT DETERIORATION (PSD) APPLICABILITY

The facility has fossil fuel boilers which total more than 250 MMBtu/hr heat input combined which would be one of the 28 categorical facilities listed in 40 CFR 52.21(b)(1)(i)(a). However, the facility has a federally enforceable limit which restricts the combined heat input of the boilers to 249.9 MMBtu/hr. As such, the PSD threshold for regulated NSR pollutants is 250 tpy. With the fuel and heat input restrictions in the permit, the facility has the potential to emit less than 250 tpy of each of the regulated NSR pollutants; therefore, it is considered an existing minor source under the PSD program. This permitting action will not change the current PSD status of the facility.

FACILITY MODIFICATIONS AND/OR PERMIT CHANGES

Minor changes to the proposed permit were requested and are described below:

- 1. The facility submitted a 502(b)(10) modification request in June 2019 requesting to reconfigure the high-intensity emissions system. The proposed permit clarifies that emissions from the processes (AA-009, AA-010, AA-016, AA-019, and AA-026) are routed in series through the Venturi Scrubber (AA-004a), the Packed Tower Scrubber (AA-004b), and the Regenerative Thermal Oxidizer (RTO) (AA-027).
- 2. Emission Point AA-017 and all references to it have been removed from the proposed permit as requested.

3. The facility requested that Emission Point 30 be modified to burn propane and used to provide emergency power at the administrative building. The facility plans to move the generator at some point in the future.

COMPLIANCE ASSURANCE MONITORING (CAM) APPLICABILITY

40 CFR Part 64 specifies the requirements for CAM. The general applicability of this rule can be found in 40 CFR 64.2 and requires a Title V source to comply with the CAM requirements if all three of the following criteria are met for a pollutant-specific emission unit (PSEU):

- 1. The unit is subject to an emission limitation or standard for a regulated air pollutant other than exemptions under 40 CFR 64.2(b)(1);
- 2. The unit uses a control device to comply with the standard; and
- 3. The unit has pre-control emissions exceeding Title V major source threshold.

The processes controlled by the scrubbers and RTO do not have uncontrolled emissions which exceed the major source threshold and there are no applicable emission limits. The boilers are not equipped with any emissions control equipment, nor do they have potential emissions that exceed the major source threshold. As such, the CAM requirements are not applicable to any emissions unit at the facility.

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP) APPLICABILITY

- 40 CFR 63, Subpart ZZZZ, NESHAP for Stationary Reciprocating Internal Combustion Engines The provisions of Subpart ZZZZ are applicable to stationary reciprocating combustion engines located at area and major sources of HAP emissions. The facility is considered an area source of HAP and has two (2) new natural gas-fired emergency engines (Emission Points AA-028 and AA-030). Per 63.6590(c)(1), the engines comply with the requirements of Subpart ZZZZ by complying with the applicable requirements of 40 CFR 60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.
- 40 CFR 63, Subpart JJJJJJ, NESHAP for Industrial, Commercial, and Institutional Boilers at Area Sources The provisions of Subpart JJJJJJ are applicable to boilers that are located at area sources of HAP emissions. While the boilers at the facility are permitted to burn several fuels, the boilers meet the definition of a gas-fired boiler contained in 40 CFR 63.11237 and per 40 CFR 63.11195(e), the boilers are not subject to the requirements of Subpart JJJJJJ. However, if the facility fires either of the other permitted fuels (i.e., diesel, processed fats) in a manner such that the boilers no longer meet the definition of a gas-fired boiler, the boilers must immediately begin meeting the applicable requirements of Subpart JJJJJJ. If these boilers do become subject to the requirements of Subpart JJJJJJJ, Emission Points AA-020 through AA-022 will be considered existing sources and Emission Points AA-025 will be considered new sources.

NEW SOURCE PERFORMANCE STANDARDS (NSPS) APPLICABILITY

- 40 CFR 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units - The provisions of Subpart Dc are applicable to steam generating units for which construction, modification, or reconstruction commenced after June 9, 1989, and that have a maximum design heat input capacity between 10 and 100 MMBtu/hr. The boilers at the facility (AA-020 through AA-025) are subject to the requirements of Subpart Dc. All applicable requirements are contained in the proposed permit.
- 40 CFR 60, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 The provisions of Subpart Kb are applicable to each storage vessel with a capacity greater than or equal to 75 cubic meters (19,813 gallons) that is used to store volatile organic liquids. The facility has a 15,600-gallon fuel oil storage tank (Emission Point AA-003) which does not meet the applicability threshold. Therefore, the tank is not subject to the Subpart Kb requirements.
- 40 CFR 60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition (SI) Internal Combustion Engines - The provisions of Subpart JJJJ are applicable to stationary SI engines that commenced construction after the dates contained in 40 CFR 60.4230(a)(1) through (6). The engines at the facility are spark ignition emergency engines that were constructed after the applicability date; therefore, the applicable provisions of Subpart JJJJ are included in the proposed permit.

Emission Point No.	Pollutant	Draft Permit Emission Limits	Monitoring Requirements
Facility- wide	PM (filterable)	$E = 4.1*p^{0.67}$	The margin of compliance with the state standard is expected to be significant and warrants no additional monitoring
AA-020 AA-021 AA-022 AA-023 AA-024 AA-025	SO_2	4.8 lbs/MMBTU	The margin of compliance with the state standards is expected to be significant and warrants no additional monitoring
	PM (filterable)	$E = 0.8808 * I^{-0.1667}$	
	Fuel restrictions	Fuels limited to natural gas, low sulfur diesel fuel, or processed fats	Monitor and record fuel usage
	Operating restriction	The combined heat input from all boilers limited to \leq 249.9 MMBTU/hr	Monitor and record boiler usage
	SO_2	Sulfur content ≤ 0.5 weight percent	Maintain fuel supplier certifications
	PM (filterable) Opacity	PM exemption Opacity ≤ 20% (6-minute average) except for one 6-minute period per hour not to exceed 27%	Annual visible emissions evaluation (VEE)

SPECIFIC APPLICABLE REQUIREMENTS

Information Relative to the Title V Permit Page 6 of 6

Emission Point No.	Pollutant	Draft Permit Emission Limits	Monitoring Requirements
AA-004a AA-004b AA-005 AA-018 AA-027	Operating requirement	Control devices must operate and be inspected in accordance with the approved Operating Plan	Develop and implement a plan to operate control devices and monitor operating parameters
AA-027	Temperature	Combustion chamber temperature \ge 1,300 °F	Monitor and record combustion chamber temperature
	PM (filterable)	0.6 lbs/MMBTU	The margin of compliance with the state standard is expected to be significant and warrants no additional monitoring
AA-028 AA-030	NOx CO	\leq 10 g/HP-hr \leq 387 g/HP-hr	Purchase, install, operate, and maintain certified engines to meet applicable emission standards for each engine
	NO _x CO VOC	Operating requirements	Maintain records concerning hours of operation
AA-028 AA-030	PM (filterable)	0.6 MMBTU/hr	The margin of compliance with the state standard is expected to be significant and warrants no additional monitoring
AA-029	SO ₂	\leq 1.0 g/100 scf	The margin of compliance with the state standard is expected to be significant and warrants no additional monitoring
	PM (filterable)	0.6 MMBTU/hr	The margin of compliance with the state standard is expected to be significant and warrants no additional monitoring