

Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

May 7, 2020

Chris Jordan
Plant Engineer
Smithfield Packaged Meats Corp.
13825 Wyandotte Street
Kansas City, MO 64145

RE: New Source Review Permit – Project Number: 2020-01-030

Dear Chris Jordan:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.

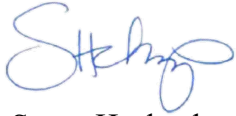


Chris Jordan
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If you have any questions regarding this permit, please contact the Department of Natural Resources' Air Pollution Control Program at P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

A handwritten signature in blue ink, appearing to read "S Heckenkamp".

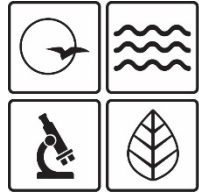
Susan Heckenkamp
New Source Review Unit Chief

SH:rsa

Enclosures

c: Kansas City Regional Office
PAMS File: 2020-01-030

Permit Number: 052020-001



MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 052020-001 Project Number: 2020-01-030
Installation Number: 095-2002

Parent Company: Smithfield Packaged Meats Corp.

Parent Company Address: 200 Commerce Street, Smithfield, VA 23430

Installation Name: Smithfield Packaged Meats Corp.

Installation Address: 13825 Wyandotte Street, Kansas City, MO 64145

Location Information: Jackson County (S20, T47N, R33W)

Application for Authority to Construct was made for:
Updating the potential emissions and emission limits of the installation. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

-
- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

Director or Designee
Department of Natural Resources

May 7, 2020
Effective Date

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Enforcement and Compliance Section of the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of startup of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual startup of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

Contact Information:
Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:
<http://dnr.mo.gov/regions/>

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted to the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (3)(E). "Conditions required by permitting authority."

Smithfield Packaged Meats Corp.
Jackson County (S20, T47N, R33W)

1. **Superseding Condition**
The conditions of this permit supersede Special Conditions 2, 3, 4, 5 & 6 of Construction Permit No. 1315, previously issued by the Kansas City Health Department's Air Quality Program.
2. **Operational Limit**
 - A. Smithfield Packaged Meats Corp. shall not use more than 640 total tons of wood per consecutive 12-month period in the smoke generators (see Table 1).
 - B. Smithfield Packaged Meats Corp. shall demonstrate compliance with Special Condition 2.A by keeping a record of the amount of wood used in the smoke generators. These records shall include, at a minimum, the following information:
 - 1) Installation name & ID number
 - 2) Permit number
 - 3) Current month & 12-month date range
 - 4) Monthly amount of wood used in the smoke generators
 - 5) 12-month rolling total wood used in the smoke generators
 - 6) Indication of compliance with Special Condition 2.A.
3. **Control Device Requirement – Spray-Chamber Wet Scrubber**
 - A. Smithfield Packaged Meats Corp. shall control particulate and VOC emissions from the 9 smokehouses using 9 spray-chamber wet scrubbers (see Table 1), as specified in the permit application.
 - B. The scrubbers shall be operated and maintained in accordance with the manufacturer's specifications, which shall be kept on site.
 - C. Smithfield Packaged Meats Corp. shall equip each scrubber with a gauge that indicates the water pump discharge pressure. These gauges shall be located such that Department of Natural Resources' employees may easily observe them.
 - D. Smithfield Packaged Meats Corp. shall monitor and record the water pump discharge pressure at least once daily during scrubber operation.

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- E. Smithfield Packaged Meats Corp. shall maintain an operating and maintenance log for the scrubbers, which shall contain the following:
 - 1) Incidents of malfunction with impact on emissions, duration of event, probable cause, and corrective actions;
 - 2) Maintenance activities with inspection schedule, repair actions, replacements, etc.

- 4. Record Keeping and Reporting Requirements
 - A. Smithfield Packaged Meats Corp. shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.

 - B. Smithfield Packaged Meats Corp. shall report to the Air Pollution Control Program's Compliance/Enforcement Section at P.O. Box 176, Jefferson City, MO 65102, or by email at AirComplianceReporting@dnr.mo.gov, no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2020-01-030
Installation ID Number: 095-2002
Permit Number: 052020-001

Installation Address:

Smithfield Packaged Meats Corp.
13825 Wyandotte Street
Kansas City, MO 64145
Jackson County (S20, T47N, R33W)

Parent Company:

Smithfield Packaged Meats Corp.
200 Commerce Street
Smithfield, VA 23430

REVIEW SUMMARY

- Smithfield Packaged Meats Corp. has applied for authority to update the potential emissions and emission limits of the installation.
- The application was deemed complete on January 29, 2020.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process include the products of natural gas combustion and wood pyrolysis.
- 40 CFR 60 Subpart Dc – *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* applies to the existing boilers (EP-01 & EP-02).
- None of the NESHAPs or current MACT regulations apply to the installation.
- Existing wet scrubbers are being used to control particulate and VOC emissions from the smokehouses. No new air pollution control equipment is being installed.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential CO emissions are above the de minimis level but conditioned below the major source level. Potential emissions of all other pollutants are below de minimis levels.
- This installation is located in a part of Jackson County that is an attainment/unclassifiable area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2; therefore, the installation's major source level is 250 tons per year, and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed for this project. Although CO emissions exceed the de minimis level, this project does not involve the installation of any new equipment or a change in operation of existing equipment.

- This permit utilizes the results of updated emissions testing, and no further testing is required for the equipment as a part of this permit.
- Submittal of a Part 70 Operating Permit application is required for the installation within 1 year after the issuance date of this permit.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Smithfield Packaged Meats Corp. operates a pork processing and packaging facility located in the southwestern part of Jackson County, Missouri. The installation processes the meat in 9 smokehouses, each of which has a natural gas-fired oven and a wood-fired smoke generator. Each smokehouse is controlled by a spray-chamber wet scrubber that uses cold water to condense particulates and absorb VOCs from the exhaust gases. Table 1 provides a list of all existing equipment at the installation.

Table 1: Installation Equipment Summary

Emission Point	Description	Maximum Design Rate	Control Device
EP-01	Boiler #1 (Superior)	10.5 MMBtu/hr	N/A
EP-02	Boiler #2 (Johnston)	14.65 MMBtu/hr	N/A
EP-03	Smokehouse #1 Oven	3.325 MMBtu/hr	Wet Scrubber CE-01
	Smokehouse #1 Smoke Generator	0.010 ton/hr	
EP-04	Smokehouse #2 Oven	3.325 MMBtu/hr	Wet Scrubber CE-02
	Smokehouse #2 Smoke Generator	0.010 ton/hr	
EP-05	Smokehouse #3 Oven	3.325 MMBtu/hr	Wet Scrubber CE-03
	Smokehouse #3 Smoke Generator	0.010 ton/hr	
EP-09	Smokehouse #4 Oven	3.325 MMBtu/hr	Wet Scrubber CE-04
	Smokehouse #4 Smoke Generator	0.010 ton/hr	
EP-10	Smokehouse #5 Oven	3.325 MMBtu/hr	Wet Scrubber CE-05
	Smokehouse #5 Smoke Generator	0.010 ton/hr	
EP-11	Smokehouse #6 Oven	3.325 MMBtu/hr	Wet Scrubber CE-06
	Smokehouse #6 Smoke Generator	0.010 ton/hr	
EP-15	Smokehouse #7 Oven	3.325 MMBtu/hr	Wet Scrubber CE-07
	Smokehouse #7 Smoke Generator	0.010 ton/hr	
EP-17	Smokehouse #8 Oven	3.325 MMBtu/hr	Wet Scrubber CE-08
	Smokehouse #8 Smoke Generator	0.010 ton/hr	
EP-19	Smokehouse #9 Oven	3.325 MMBtu/hr	Wet Scrubber CE-09
	Smokehouse #9 Smoke Generator	0.010 ton/hr	
EP-21	Hot Water Heater (Kemco)	9.0 MMBtu/hr	N/A
N/A	Miscellaneous Space Heaters	3.0 MMBtu/hr	N/A

The pork processing plant has been owned by several companies over the years, with the current owner being Smithfield Packaged Meats Corp. The installation has only ever been permitted by the Kansas City Health Department's Local Air Quality Program, and the most recent construction permit (#1315) superseded the conditions of all previous construction permits in order to consolidate all existing equipment and special conditions. Table 2 provides a list of local permits that have previously been issued to the installation.

Table 2: Installation Permit History

Permit Number	Issue Date	Installation Owner	Description
Local CP# 634	Nov 1993	Armour Food Company	New boiler
Local CP# 789	May 1997	Cook Family Foods	Replacement smokehouses (3)
Local CP# 827	Mar 1998	Cook Family Foods	New ovens (3) and new generators (3)
Local CP# 935	Jan 2001	Cook Family Foods	New oven and new generator
Local CP# 1175	Nov 2006	Cook's Hams	New ovens (2) and new generators (2)
Local CP# 1315	Apr 2011	Farmland Foods	Consolidation of previous permits

PROJECT DESCRIPTION

Smithfield Packaged Meats Corp. is reevaluating their installation to update the potential emissions of the current equipment and establish new emission limits. PM₁₀, SO_x, NO_x, and VOC emissions from the installation were previously limited below de minimis levels, and CO emissions were limited below 50 tons per year. As a result, the installation was classified as a de minimis source, and no operating permit was required. It was recently discovered that the potential emissions of PM₁₀, SO_x, NO_x, and VOCs are all below de minimis levels; therefore, the special conditions requiring these emission limits are unnecessary.

A stack test was conducted in June of 2018 to address an issue with high CO readings from the facility. It was discovered that the concentration of CO being emitted from the smokehouses was higher than originally projected, which caused the CO emissions to exceed the major source level. To avoid being subject to PSD requirements, Smithfield Packaged Meats Corp. is electing to limit the amount of wood used in the smoke generators below 640 tons per year. This reduces overall CO emissions from the installation below 250 tons per year. Now, the installation is classified as a minor source for construction permits and will require a Part 70 Operating Permit.

No new equipment is being installed as a part of this project, and the operation of all existing equipment will remain unchanged; however, the facility currently has 9 ovens, 9 smoke generators, and 9 scrubbers (one in each smokehouse), while the previous construction permit only had 7 of each listed. This was simply an administrative error, as all the equipment was installed prior to this and had been included in the emission calculations, as well as the EIQ. To ensure practical enforceability of all the scrubbers, Special Condition 3 was included in this permit to update the scrubber requirements.

EMISSIONS/CONTROLS EVALUATION

The emission factors used in this analysis were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

Combustion emissions from the boilers, smokehouse ovens, hot water heater, and space heaters were calculated using emission factors taken from AP-42 Section 1.4 *Natural Gas Combustion* (July 1998).

Particulate and VOC emissions from the batch smoke generators were calculated using emission factors taken from AP-42 Section 9.5.2 *Meat Smokehouses* (September 1995). Control efficiencies of 85% for particulates and 50% for VOCs were assigned to the smoke generators for the use of wet scrubbers. These values were obtained from the lower end of the efficiency ranges listed in the Air Pollution Control Technology Fact Sheet for Spray-Chamber Wet Scrubbers (EPA-452/F-03-016). CO emissions were calculated using an emission factor of 740 pounds per ton of wood used, which was taken from the highest result of a stack test performed in April of 2018 at Smithfield Fresh Meats in Denison, IA. The smokehouses at the Denison meat smoking facility are similar to those at this installation. Although Smithfield Packaged Meats Corp. performed a stack test on Smokehouse #2 in June of 2018, the resultant emission factor of 540 pounds per ton was not used. The higher emission factor from the test performed at the alternate facility was chosen in order to be as conservative as possible and account for any operational fluctuations. Potential emissions from the remaining criteria pollutants were calculated using emission factors taken from AP-42 Section 1.10 *Residential Wood Stoves* (October 1996), as these are the most representative factors for the scale and operation of the smoke generators.

Table 3 provides an emissions summary for this project. Because the installation has never received a construction permit from the Missouri Department of Natural Resources' Air Pollution Control Program, existing potential emissions are unknown. Existing actual emissions were taken from the installation's most recent EIQ. Potential emissions of the installation represent the updated potential emissions of the entire installation, assuming continuous operation (8,760 hours per year). Conditioned potential emissions of the installation account for a voluntary 640 ton per year wood usage limit in the smoke generators.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels/SMAL	Existing Potential Emissions	Existing Actual Emissions (2018 EIQ)	Potential Emissions of the Installation	Conditioned Potential Emissions of the Installation
PM	25.0	N/D	N/D	5.23	4.64
PM ₁₀	15.0	N/D	1.36	5.23	4.64
PM _{2.5}	10.0	N/D	1.36	5.23	4.64
SO _x	40.0	N/D	0.02	0.32	0.29
NO _x	40.0	N/D	3.69	28.73	8.56
VOC	40.0	N/D	3.48	10.19	8.56
CO	100.0	N/D	3.10	304.05	249.14
Total HAPs	25.0	N/D	N/D	1.79	1.55
Benzene	2*	N/D	N/D	0.76	0.62
Hexane	10*	N/D	N/D	0.50	0.50
Toluene	10*	N/D	N/D	0.29	0.23
Xylene	10*	N/D	N/D	0.08	0.07
Formaldehyde	2*	N/D	N/D	0.02	0.02

N/A = Not Applicable; N/D = Not Determined; SMAL = Screening Model Action Level*

Despite the potential CO emissions of the project being shown as exceeding the de minimis level, modeling is not required for this project. The smokehouses were installed and permitted in small groups over the course of many years (see Table 2), which kept the potential emissions of each project group below the de minimis level. Although the potential emissions of the installation are being reevaluated in this project due to updated emission factors, these emissions are not new to the installation and are not being counted collectively. Also, the potential emissions of any previous project group can easily be shown to not exceed the CO de minimis level, even when using the updated emission factor. By dividing the total installation CO emissions from the smokehouses by the current number of smokehouses and multiplying that value by the number of smokehouses installed in each previous project group, the resultant CO emissions from each project are all below the de minimis level. This is a conservative calculation, as well, because it does not take into consideration any production or emission limits taken in the previous projects or the previously lower maximum design rate of the installation.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential CO emissions are above the de minimis level but conditioned below the major source level. Potential emissions of all other pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

Smithfield Packaged Meats Corp. shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Operating Permits*, 10 CSR 10-6.065
- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
 - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II), a full EIQ is required for the first full calendar year the affected equipment is in operation.
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220

SPECIFIC REQUIREMENTS

- *New Source Performance Regulations*, 10 CSR 10-6.070
 - *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* – 40 CFR Part 60, Subpart Dc

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated January 21, 2020, received January 22, 2020, designating Smithfield Packaged Meats Corp. as the owner and operator of the installation.

APPENDIX A

Abbreviations and Acronyms

% percent	Mgal 1,000 gallons
°F degrees Fahrenheit	MWmegawatt
acfm actual cubic feet per minute	MHDRmaximum hourly design rate
BACT Best Available Control Technology	MMBtuMillion British thermal units
BMPs Best Management Practices	MMCFmillion cubic feet
Btu British thermal unit	MSDSMaterial Safety Data Sheet
CAM Compliance Assurance Monitoring	NAAQSNational Ambient Air Quality Standards
CAS Chemical Abstracts Service	NESHAPs National Emissions Standards for Hazardous Air Pollutants
CEMS Continuous Emission Monitor System	NO_xnitrogen oxides
CFR Code of Federal Regulations	NSPSNew Source Performance Standards
CO carbon monoxide	NSRNew Source Review
CO₂ carbon dioxide	PMparticulate matter
CO_{2e} carbon dioxide equivalent	PM_{2.5}particulate matter less than 2.5 microns in aerodynamic diameter
COMS Continuous Opacity Monitoring System	PM₁₀particulate matter less than 10 microns in aerodynamic diameter
CSR Code of State Regulations	ppmparts per million
dscf dry standard cubic feet	PSDPrevention of Significant Deterioration
EQ Emission Inventory Questionnaire	PTEpotential to emit
EP Emission Point	RACTReasonable Available Control Technology
EPA Environmental Protection Agency	RAL Risk Assessment Level
EU Emission Unit	SCCSource Classification Code
fps feet per second	scfmstandard cubic feet per minute
ft feet	SDS Safety Data Sheet
GACT Generally Available Control Technology	SICStandard Industrial Classification
GHG Greenhouse Gas	SIPState Implementation Plan
gpm gallons per minute	SMAL Screening Model Action Levels
gr grains	SO_xsulfur oxides
GWP Global Warming Potential	SO₂sulfur dioxide
HAP Hazardous Air Pollutant	SSM Startup, Shutdown & Malfunction
hr hour	tph tons per hour
hp horsepower	tpy tons per year
lb pound	VMT vehicle miles traveled
lbs/hr pounds per hour	VOC Volatile Organic Compound
MACT Maximum Achievable Control Technology	
µg/m³ micrograms per cubic meter	
m/s meters per second	