



## 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:

122011-006

Project Number: 2011-08-057

Installation Number: 159-0037

Parent Company: Tyson Foods, Incorporated

Parent Company Address: P.O. Box 2020, Springdale, AR 72765

Installation Name: Tyson Foods, Incorporated

Installation Address: 19571 Whitfield Road, Sedalia, MO 65302

Location Information: Pettis County, S22, T46N, R22W

Application for Authority to Construct was made for:

Installation of a new chicken baking line heated by a natural gas-fired thermal fluid heat exchanger. This project is enabled by a planned increase in chicken processing and is considered related to project number 2011-05-025. 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.

DEC - 6 2011

EFFECTIVE DATE

*Nancy K. A. for Kyril Moore*

DIRECTOR OR DESIGNEE  
DEPARTMENT OF NATURAL RESOURCES

## 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 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 Departments' Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' 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 sources(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 at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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

Project Number: 2011-08-057  
Installation ID Number: 159-0037  
Permit Number:

Tyson Foods, Incorporated  
19571 Whitfield Road  
Sedalia, MO 65302

Complete: August 18, 2011

Parent Company:  
Tyson Foods, Incorporated  
P.O. Box 2020  
Springdale, AR 72765

Pettis County, S22, T46N, R22W

REVIEW SUMMARY

- Tyson Foods, Incorporated has applied for authority to install a new chicken baking line heated by a natural gas-fired heat exchanger.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment due to the combustion of natural gas.
- The New Source Performance Standard (NSPS), 40 CFR 60, Subpart Dc, "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units" applies to the 12.75 million Btu (mmBtu) thermal fluid heater.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) set forth in 40 CFR Part 61 apply to this installation.
- None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment. 40 CFR Part 63, Subpart JJJJJ, "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources" does not apply to the thermal fluid heater because it is exclusively fueled by natural gas.
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.
- This installation is located in Pettis County, an attainment 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. 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 since potential emissions of the application are below de minimis levels.
- Emissions testing is not required for the equipment.
- An application for an amendment to the Intermediate Operating Permit is required within 90 days of equipment startup.
- Approval of this permit is recommended without special conditions.

### INSTALLATION DESCRIPTION

Tyson Foods, Incorporated (Tyson) operates a chicken processing operation in Sedalia, Missouri. The operation includes a slaughterhouse with food preparation and packaging, a rendering plant, and a waste water treatment plant. Tyson is limited to less than major source levels in the intermediate operating permit number OP2007-049. The following construction permits have been issued to Tyson from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
1095-017	De minimis Permit for Chicken Processing Plant
1095-017A	Amendment to change the daily PM10 limit to an annual limit
1097-029	Permit for Protein Conversion Operation
1097-029A	Correction Amendment for changes to emissions summary table
0798-037	De minimis Permit for 10 MMBtu Fluid Heater
0798-002	Temporary Permit for Odor Control Chemical Substitution
1198-014	De minimis Permit for Increased Oven Capacity
0799-004	De minimis Permit for Searing Machine
052001-027	De minimis Permit for Ovens and Fryers
102001-004	De minimis Permit for burning of poultry fat in boilers
082005-012	Temporary Permit for two 800 Hp boilers
122005-010	De minimis Permit for a boiler and a meat meal cooker
062006-010	De minimis Permit for a meat meal grinder and screen (installed under project 2011-05-025)
092010-004	Temporary Permit for a 1000 Hp boiler

## PROJECT DESCRIPTION

Tyson has proposed to install a new chicken baking line to manufacture grilled chicken breast. Baking is achieved in a conveyORIZED oven that is heated by thermal fluid heating tubes analogous to a heat exchanger. The thermal fluid is heated in a natural gas-fired heater similar to a boiler. The hot thermal fluid is continuously recirculated within a closed system from the heater to the oven and back to the heater. The only emissions expected from this process are due to the combustion of natural gas in the thermal fluid heater because the emissions associated with chicken baking are expected to be negligible. The heater's maximum fuel usage is 0.0125 million standard cubic feet of natural gas per hour. The heater has a maximum design rate of 10 mmBtu, or approximately 12.75 mmBtu heat input.

Tyson is working towards a 25% increase in slaughterhouse throughput. To this end, Tyson received a construction permit (project number 2011-05-025) for an increase in rendering plant capacity. Since not all of Tyson's projects related to the increase in slaughterhouse throughput were planned at the time of the rendering plant's permit, a special condition of the permit for project 2011-05-025 required all projects related to the increased throughput to be considered together for construction permitting review purposes. For this reason, Tyson was required to obtain a construction permit for the installation of this thermal fluid heater for a new chicken baking line even though the potential emissions are less than the insignificant emission exemption levels set forth in 10 CSR 10 – 6.061, *Construction Permit Exemptions*. However, the combined potential emissions of this project (2011-08-057) and project number 2011-05-025 are less than de minimis levels and no additional permit review is required.

## EMISSIONS/CONTROLS EVALUATION

The emission factors used in this analysis were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 1.4 "Natural Gas Combustion" (July 1998). Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). The following table provides an emissions summary for this project.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions <sup>[1,2]</sup>	Existing Actual Emissions (EIQ)	Potential Emissions of Project 2011-05-025	Potential Emissions of Project 2011-08-057	New Installation Conditioned Potential
PM <sub>2.5</sub>	10.0	N/D	2.18	0.60	0.42	N/A
PM <sub>10</sub>	15.0	109.09	19.86	2.53	0.42	N/A
PM	25.0	N/D	N/D	N/D	0.42	N/A
SO <sub>x</sub>	40.0	1.88	0.25	N/A	0.03	N/A
NO <sub>x</sub> <sup>[3]</sup>	40.0	<215.75	41.83	N/A	5.47	N/A
VOC	40.0	14.64	2.94	N/A	0.30	N/A
CO	100.0	84.67	35.14	N/A	4.60	N/A
HAPs	10.0/25.0	0.57	N/D	N/A	0.10	N/A

N/A = Not Applicable; N/D = Not Determined

<sup>1</sup>Tyson is limited to less than 100 tons per year for each criteria pollutant in the intermediate operating permit number OP2007-049.

<sup>2</sup>Existing potential emissions were obtained from project number 2011-05-025. The potential emissions include limits found in previously issued construction permits, but do not include voluntary conditions accepted in the intermediate operating permit.

<sup>3</sup>Potential emissions of NO<sub>x</sub> consider an installation-wide 100 ton limit in permit number 1097-029, subsequent construction permits did not have limits on NO<sub>x</sub> emissions.

### 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 emissions of all pollutants are below de minimis levels.

### APPLICABLE REQUIREMENTS

Tyson Foods, Incorporated 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

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.065
- *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
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

#### SPECIFIC REQUIREMENTS

- *New Source Performance Regulations*, 10 CSR 10-6.070 – *New Source Performance Standards (NSPS) 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*, I recommend this permit be granted without special conditions.

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Kathi Jantz  
Environmental Engineer

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Date

#### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated August 16, 2011, received August 18, 2011, designating Tyson Foods, Incorporated as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated September 22, 2011.

Mr. Jason McCauley  
Environmental Manager  
Tyson Foods, Incorporated  
19571 Whitfield Road  
Sedalia, MO 65302

RE: New Source Review Permit - Project Number: 2011-08-057

Dear Mr. McCauley:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, 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 amended 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.

If you have any questions regarding this permit, please do not hesitate to contact Kathi Jantz, at the Department's Air Pollution Control Program, 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

Susan Heckenkamp  
New Source Review Unit Chief

SH:kjl

Enclosures

c: Kansas City Regional Office  
PAMS File: 2011-08-057

Permit Number: