



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

TIDEWATER REGIONAL OFFICE

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COMMONWEALTH OF VIRGINIA Department of Environmental Quality Tidewater Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Smithfield Packing Company, Inc. - Complex
Smithfield, Virginia
Permit No. TRO-60270

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Smithfield Packing Company, Inc. - Complex has applied for a Title V Operating Permit for its Smithfield facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Permit Contact: _____
Yen T. Bao
(757) 518-2195

Date: **June 3, 2013**

Regional Air
Permit Manager: _____
Troy D. Breathwaite

Date: **June 3, 2013**

Regional Director: _____
Maria R. Nold

Date: **June 3, 2013**

FACILITY INFORMATION

Permittee

The Smithfield Packing Company, Inc. - Complex
601 North Church Street.
Smithfield, VA 23430

Facility

The Smithfield Packing Company, Inc. - Complex
401, 501 and 601 North Church Street, and 210 Berry Hill Road
Smithfield, VA 23430

County-Plant Identification Number: 51-093-00011

SOURCE DESCRIPTION

NAICS 311611- Animal Slaughtering, NAICS 311612- Meat Processed from Carcasses,
NAICS 311613- Rendering and Meat Byproduct Processing,
NAICS 311111- Dog and Cat Food Manufacturing, and
NAICS 811111- General Automotive Repair

Smithfield Packing Company, Inc. - Complex is a consolidation of three plants: Smithfield Packing Co., Inc.-South Division, Smithfield Packing Co., Inc.-North Division, and Smithfield Packing Co., Inc.-Ham and Products Division. Previously, each plant was independently operated with its own manager; however, the three plants have been determined, under Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution (9 VAC 5, Chapter 80), to represent a single stationary source of air emissions from a contiguous food processing facility under the common control of Smithfield Packing Co., Inc. At the request of the company, prior to this renewal, the Title V permit has been written in three separate parts, each is a complete Title V permit by itself to reflect each plant's compliance responsibilities and to facilitate direct compliance relationships between the state and each of the three plants. Now, the company has consolidated the plants to one facility under a general manager. Hence, it has requested that this permit renewal be written in one inclusive part only, i.e. in the same Title V permit format as normally used for any other stationary sources.

The facility, located on North Church Street, harvests hogs to produce fresh, processed, and ready-to-eat dry cured meats. Inedible materials are rendered to produce meat and bone meal, blood meal, and fats. The facility also has a pet food operation, Premium Pet Health (PPH), which packs and ships organs for pet food, and a test kitchen (R&D) for research and development purposes at the former Ham and Products Division. A truck shop (TS) at 210 Berry Hill Road, adjacent to the North truck gate, provides contract transportation, tractor and trailer maintenance services for the facility. PPH, R&D and TS have no significant emission units.

Prior to 3/18/13, the consolidated facility had two minor NSR permits, dated 6/13/07 and 6/12/07, respectively. For reasons that evolved over time, the 6/13/07 permit covers equipment in the former South Division while the 6/12/07 permit covers those in the former North Division. Note that in the equipment list in this Title V permit renewal, the word South or North is included in the emission unit ID to indicate the location of the unit for tracking purpose. Former Ham and Products Division has no minor NSR permit as it has no significant emission units. Based on the NSR permit limits and the potential to emit of non-permitted units, the source was Title V major for SO₂, NO_x, and CO. Located in an attainment area, it is also PSD major for those pollutants, belonging to one of the 28 source categories with fossil fuel boilers totaling more than 250 million BTU/hour heat input.

On 2/26/13, the facility submitted an application to have four main plant boilers (URN 1 through 4, rated capacity ranges from 26.5 to 34.8 MMBTU/hr) removed from the 6/13/07 minor NSR permit as they are no longer used and will be removed from the site. A permit was issued on 3/18/13, superseding the 6/13/07 permit. As such, the facility is still a Title V major source but no longer a PSD size source because the total rated heat input capacity of the boilers is now less than 250 million BTU/hour and the potential to emit of each criteria pollutant is less than 250 tons/yr.

The remaining main plant boilers URN 51, 52, 53, and 54 are older (manufactured in the 1970's or earlier) with size ranges from 25.9 MMBTU/hr to 34.8 MMBTU/hr. Three of the boilers, URN 52, 53 and 54 were modified in 2007 as permitted on 6/12/07. The permit was written to ensure that the net emission increases for the whole facility are below the PSD significant levels to avoid PSD permitting requirements.

The rendering plant boilers URN 40 and 41 are newer (manufactured in 2005, subject to NSPS Subpart Dc), first permitted to install by a minor NSR permit dated 9/30/05, and subsequently incorporated into the 6/13/07 NSR permit which is then superseded by the 3/18/13 permit.

A smaller boiler, URN 86, maximum rated heat input capacity of 6.3 million BTU per hour, was manufactured in 1994, and originally permitted for installation by NSR permit dated 12/29/05. The latter also permitted four new smoke generators (URN 120 to 123) that use electricity to generate natural smoke from hardwood chips/saw dust, and six new smokehouse ovens (URN 110-115) that use natural gas as the heat source. All permit conditions were subsequently incorporated in the NSR permit dated 6/12/07.

Overall, boilers are the main source of emissions from the facility. Natural gas and liquid fuels are permitted, however, lately, the facility has been using natural gas only.

In the rendering plant, hog parts not fit for human consumption are processed for animal feed. Solids are removed, and brown grease is recovered. Rendering equipment as installed in 1988 includes blood dryer URN 7 and continuous cooker URN 35. The latter was replaced in 2004. Both units have been determined to be exempt from minor NSR permitting. However, odor is a concern with the rendering plant since residential areas are in close proximity. Hence, emission

controls are directed toward odor elimination. Emission control equipment at this rendering plant consists of a condenser (to remove condensable particulate emissions from the high temperature cooker exhaust stream) and a 4,000 CFM venturi scrubber. Additionally, PM-10 is emitted from grinding and screening of solids (cracklings) from the screw presses and other rendering operations, primarily dryers processing blood and hair. The PM emission standards for existing sources in Chapter 40 of the regulations apply.

All other units at the facility such as food processing ovens, hog singers, oil tanks, etc... qualify as Insignificant Activities.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

EQUIPMENT LIST

Equipment to be operated consists of the following units. Note that the word South or North in the Emission Unit ID column indicates the location of the equipment for tracking purpose.

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment							
URN 40 South	S40	Cleaver Brooks boiler, 2005, NSPS Dc, MACT JJJJJ	32.659 MMBTU/hr	NA	NA	NA	03/18/13 NSR
URN 41 South	S41	Cleaver Brooks boiler, 2005, NSPS Dc, MACT JJJJJ	32.659 MMBTU/hr	NA	NA	NA	03/18/13 NSR
URN 52 North	S52	Continental Boiler, 1968, installed before 3/17/72, modified in 2007 by addition of an economizer, MACT JJJJJ	34.8 MMBTU/hr	NA	NA	NA	6/12/07 NSR
URN 53 North	S53	Continental Boiler, 1972, installed before 3/17/72, modified in 2007 by addition of an economizer, MACT JJJJJ	34.8 MMBTU/hr	NA	NA	NA	6/12/07 NSR
URN 54 North	S54	Cleaver Brooks Boiler, 1972, installed in 1983, modified in 2007 by addition of an economizer, MACT JJJJJ	29.3 MMBTU/hr	NA	NA	NA	6/12/07 NSR
URN 51 North	S51	Continental Boiler, 1958, installed before 3/17/72, MACT JJJJJ	25.9 MMBTU/hr	NA	NA	NA	6/12/07 NSR
URN 86 North	S86	Superior Boiler, Model 6-5-750L-GP, Serial #12172, 1994, MACT JJJJJ	6.3 MMBTU/hr	NA	NA	NA	06/12/07 NSR

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Process Equipment							
URN 7 South	S35	Dupps Blood Ring Dryer 2000B, installed in 1988	5.5 MMBTU/hr, 2,300 lb/hr finished blood meal product	Venturi scrubber, Dupps Model 4, 4,000 cfm	C35	PM-10, odor	Exempt (9/25/02 NSR)
URN 35 South	S35	Dupps 290J Supercooker, Inedible Rendering Continuous Cooker, installed in 1988, replaced in 2004	46,000 lb/hr input, 23,000 lb/hr output	AC Corporation Shell-and-tube Condenser	C35	PM-10, odor	Exempt (1/13/04 letter)
URN 110-115 North	S110-115	Six Alkar Ovens with Maxon 435 burners, 2005	3.85 MMBTU/hr each	NA	NA	NA	06/12/07 NSR
URN 120 North	S110 & 111	Schroter Smoke Generator, Model R-91 - 2005	8.3 kW (No fuel) 26 lbs sawdust/hr	NA	NA	NA	06/12/07 NSR
URN 121 North	S112 & 113	Schroter Smoke Generator, Model R-91, 2005	8.3 kW (No fuel) 26 lbs sawdust/hr	NA	NA	NA	06/12/07 NSR
URN 122 North	S114 & 115	Schroter Smoke Generator, Model R-91, 2005	8.3 kW (No fuel) 26 lbs sawdust/hr	NA	NA	NA	06/12/07 NSR
URN 123 North	S78 & 79	Schroter Smoke Generator, Model R-91, 2005	8.3 kW (No fuel) 26 lbs sawdust/hr	NA	NA	NA	06/12/07 NSR

*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

EMISSIONS INVENTORY

A copy of the 2011 annual emission update is attached. Emissions are summarized in the following tables.

2011 Actual Emissions

	2011 Criteria Pollutant Emission in Tons/Year				
	VOC	CO	SO ₂	PM ₁₀	NO _x
Total	8.4	15.3	2.3	5.7	18.7

2011 Facility Hazardous Air Pollutant Emissions

Pollutant	2011 Hazardous Air Pollutant Emission in Tons/Year
Formaldehyde	0.034
Lead Compounds	0.000

FUEL BURNING EQUIPMENT, OVENS AND SMOKE GENERATORS REQUIREMENTS

Limitations

Boilers URN 40 and 41:

The two boilers were new equipment initially permitted on 9/30/05; the permit was later incorporated into the 6/13/07 NSR which was then superseded by the 3/18/13 NSR permit. These two boilers have low NOx burners and flue gas recirculation, and subject to NSPS Subpart Dc. The approved fuels are natural gas, distillate oil, and animal fat/vegetable oils. Conditions for fuel specifications and fuel certifications meet NSPS Subpart Dc requirements. The fuel throughput limits were set to ensure that emissions are below the PSD significant levels (Condition 16). Exclusive use of natural gas will not exceed PSD significant levels (Condition 6). SO₂ emission limit of 39.6 tons/year can be met with combustion of 1,100,000 gal distillate oil containing up to 0.5% sulfur, and natural gas for the remainder of the time as natural gas contains negligible amount of sulfur. When the same distillate oil throughput is used with animal fat/vegetable oil the rest of the time, SO₂ emissions would be slightly greater than 40 tons/year. Therefore, a formula was developed to reduce the distillate oil throughput when animal fat/vegetable oil is used, based on the relative SO₂ emission factors for the two fuels, 0.9 lbs/1000 gal animal fat/vegetable oil versus 71 lbs/1000 gal distillate oil, or a ratio of 1 to 78.9 (see Condition 5):

Distillate oil throughput limit (gallons/year) = $d = 1,110,000 - (f/78.9)$

where f=gallons of animal fat/vegetable oils, fired in 12 consecutive months by boilers URN 40 and 41 combined.

Visible emission limits of 10% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 20% opacity (Condition 21) are a state BACT requirement (9 VAC 5-80-260) which is more stringent than NSPS Subpart Dc.

Boilers URN 51 through 54, and 86:

The approved fuels are natural gas, distillate oil, and low sulfur (up to 0.5%) residual oil (Conditions 3 and 10). Fuel certifications are required (Condition 12). Note that the fuel certification requirement is different from the one for boilers URN 40 and 41 (Condition 11) because the latter do not burn residual oil.

Boilers URN 52 through 54, together with the now-deactivated boilers URN 1 and 4, were modified in 2007. The project mainly involved the addition of economizer to each of the boilers; hence, it is called the "economizer" project. Based on similar cases in the EPA NSR/PSD database, the project would be a PSD modification if the net emission increase (NEI) was significant, i.e. $NEI \geq 40$ tons/year SO_2 as applicable for this case. As the permit application was being processed, the Virginia Regulations for the Control and Abatement of Air Pollution for major sources or major modifications in PSD Areas (9 VAC 5 Chapter 80 Article 8) were amended on 9/01/06 to allow the use of projected actual emissions in place of future potential to emit for the NEI estimate. The facility projected an annual limit of 1,125,000 gallons oil (distillate and residual oil combined), 0.5% S maximum, for all 5 boilers which worked out to be 225,000 gal/year for each boiler, or 675,000 gal/yr for URN 52 through 54 (Condition 7) to keep the projected NEI for SO_2 below 40 tons/year for the "economizer" project. Any natural gas usage will not significantly contribute to the SO_2 emissions; however, that would affect NO_x emissions. To keep the projected NEI for NO_x below 40 tons/year for the economizer project, the facility is required to make monthly calculation of the annual NO_x emissions using DEQ-approved procedure to ensure that the emission limits are not exceeded (see Conditions 7). Emission limits for these modified boilers are shown in Condition 17. They are also subject to 9 VAC 5-50-80, the visible emission limits for new and modified sources of 20% opacity except during one six minute during one six-minute period in any one hour in which visible emissions shall not exceed 30% opacity (Condition 19).

Boiler URN 51 is an existing boiler which has never been modified. The following Virginia Administrative Codes that have specific emission requirements for existing sources have been determined to be applicable:

- 9 VAC 5-40-80- Visible emission limits of 20% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60% opacity (Condition 20);

- 9 VAC 5-40-900- PM emission limits- The maximum allowable emission ratio, E, in pounds of particulate per million BTU input, shall be determined by the following equation:
 $E = 1.0906H^{-0.2594}$, where H is the total heat input capacity in MMBTU/hr.
Using $H = 25.9$ MMBTU/hr, $E = 0.469$ lbs/MMBTU.

Maximum allowable particulate emissions for each fuel burning equipment unit shall be the product of the rated capacity and the emission ratio:
 $0.469 \text{ lbs/MMBTU} \times 25.9 \text{ MMBTU/hr} = 12.1 \text{ lbs/hr}$ for URN 51

However, as the boiler uses the same oils as the modified boilers, it is in effect limited to oils containing 0.5% S or less. Based on AP-42 (Table 1.3.1, 9/98), PM (filterables) EF for combustion of residual oil containing 0.5% S is 7.815 lbs/1000 gal. Hence, emission rate with the worst case fuel would be:

$$7.815 \text{ lbs}/(1000 \text{ gal} \times 0.15 \text{ MMBTU/gal}) = 0.052 \text{ lbs/MMBTU}$$

Hence, permit limit is:

$$0.052 \text{ lbs/MMBTU} \times 25.9 \text{ MMBTU/hr} = 1.4 \text{ lbs/hr}$$
 for URN 51 (Condition 15)

It is lower than the allowable limit in the Virginia Administrative Code.

- 9 VAC 5-40-930- SO₂ emission limits - The maximum allowable emissions shall be determined by the following equation:

$S = 2.64K$, where S = allowable emission of sulfur dioxide expressed in pounds per hour, and K = heat input at total capacity expressed in MMBTU per hour.

Hence,

$$S = 2.64 \times 25.9 = 68.4 \text{ lbs SO}_2/\text{hr}$$
 for URN 51

However, as the boiler uses the same oils as the modified boilers, it is in effect limited to oils containing 0.5% S or less. Based on AP-42 (Table 1.3.1, 9/98), SO₂ EF for combustion of residual oil containing 0.5% S is 78.5 lbs SO₂/1000 gal. Hence, emission rate with the worst case fuel would be:

$$(78.5 \text{ lbs}/(1000 \text{ gal} \times 0.15 \text{ MMBTU/gal})) \times 25.9 \text{ MMBTU/hr} = 13.6 \text{ lbs SO}_2/\text{hr}$$
 for URN 51

The emission rate is placed in the permit (See Conditions 15). Therefore, the boiler will comply with the SO₂ limit from Virginia Administrative Codes.

Boiler URN 86 has a maximum rated heat input capacity of 6.3 million BTU per hour, was manufactured in 1994, and originally permitted for installation by minor NSR permit dated December 29, 2005. By itself, the boiler would be exempt from minor NSR permitting, however, it had to be considered to demonstrate that PSD permitting does not apply as it was part of the project to install four new smoke generators (URN 120 to 123) and six new smokehouse ovens (URN 110-115). All permit conditions were subsequently incorporated in the NSR permit dated 6/12/07.

Boiler operator training and availability of written operating procedures and maintenance schedules are required (Condition 22).

Ovens URN 110 to 115 and Smoke Generators URN 120 to 123:

The approved fuel for the ovens is natural gas (Condition 4) with no throughput limit.

The smoke generators do not use additional fuel beside the saw dust which is subject to a throughput limit (Condition 8). Emission limits for PM and VOC are listed in Condition 18. The smoke generators are also subject to 9 VAC 5-50-80, the visible emission limits for new and modified sources of 20% opacity except during one six minute during one six-minute period in any one hour in which visible emissions shall not exceed 30% opacity (Condition 19).

Monitoring and Recordkeeping

Compliance Assurance Monitoring (CAM) does not apply because there is no add-on control to the boilers.

The once-a-week visible emission observations for boilers (Condition 23) meet Part 70 requirements for periodic monitoring. Note that this requirement applies for any week when a fuel other than natural gas is burned. This is in agreement with the facility's request as no visible emissions are expected with natural gas combustion.

The permit requires recordkeeping for fuel throughputs, fuel certifications, calculated distillate oil throughput limits for URN 40 and 41 combined, saw dust throughput for smoke generators, calculated NOx emissions for URN 52, 53 and 54 combined, all stack tests, periodic visible emission observations, visible emission evaluations, maintenance, operating procedures and boiler operator training (Condition 24).

Testing

Stack tests are required for boilers URN 40 and 41 while firing animal fat/vegetable oils to demonstrate initial compliance with the emission limits for PM, SO₂ and NO_x which were based on the data submitted by the permittee during processing of the NSR permit application (Condition 28). Visible emission evaluation by Method 9 (40 CFR 60 Appendix B) is also required for the boilers while firing distillate oil or animal fat/vegetable oils to demonstrate initial compliance with the opacity limits (Condition 29). These tests have not occurred as animal fat/vegetable oil has not been used so far. The Department and EPA also have authority to require additional testing if necessary (Condition 30 and 31).

No other stack tests are required in the minor NSR permits. Again, the Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard (Facility-wide Condition 48).

Reporting

Initial notification requirements for boilers URN 40 and 41 (Condition 34) as required by NSPS Subpart Dc have mostly been completed except for the performance test as the facility has not fired animal fat/vegetable oils. The two boilers are also subject to semi-annual fuel reporting requirements pursuant to NSPS Subpart Dc (Condition 35).

There are no other specific notifications or reporting requirements besides those under General Conditions because the modification of boilers URN 52, 53, and 54 in the "economizer project" has been completed.

MACT JJJJJJ- National Emission Standards for Hazardous air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (as amended 12/20/12):

All above listed boilers are subject to this MACT (Condition 14). They are all considered existing sources as they were installed prior to 6/04/10. Compliance demonstration includes initial tune-up, one-time energy assessment by a qualified energy assessor, and biennial tune-ups (Conditions 25-27). Note that the one-time energy assessment does not apply to boiler URN 86 because it is smaller than 10 MMBTU/hr. Initial Notification and Notification of Compliance Status are also required (Conditions 32 and 33). The facility has submitted to EPA the Initial Notifications for all the boilers on 9/08/11. Note that if any of the boilers meet the definition of a gas-fired boiler in 40 CFR 63.11237, then the exclusion in 40 CFR 63.11195(e) applies. This is clarified in each of MACT conditions in the permit.

Streamlined Requirements

Condition 16 of 6/12/07 NSR on Permit Invalidation is not included because the economizer project has been completed.

Other general conditions of the 6/12/07 NSR and 3/18/13 NSR permits are represented under the General Conditions section of the Title V permit except for a few which are then placed under Facility Wide section as discussed below.

RENDERING PROCESS EQUIPMENT REQUIREMENTS (URN 7 AND 35)

Limitations

The rendering equipment was installed in 1988, and has been determined to be exempt from minor NSR permitting. Nevertheless, there are control devices to prevent causing odor nuisance to the nearby neighborhood. Emissions from the continuous cooker URN 35 are controlled by a shell-and-tube condenser, and emissions from the blood ring dryer URN 7 and associated equipment are ducted to a venturi scrubber. The latter is equipped with devices to continuously monitor the water flow (at least 8 gallon per minute) and the pressure drop across the venture throat (between 5 and 10 inches of water).

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-40-260- PM emissions from existing sources shall not exceed the limits specified by the following equation:

$$E = 4.10 P^{0.67}$$

where: E = emission rate in lb/hr

P = process weight in tons/hr

Even though URN 7 and URN 35 were installed after 1972, the rule is applicable pursuant to 9 VAC 5-50-10 D which states that 9 VAC 5 Chapter 40 rules may apply to new sources if they are more restrictive; the alternative in this case is no limit.

The blood ring dryer URN 7 has a rated capacity of 2,300 lbs/hr product or 1.15 tons/hr product. Assuming the process weight rate (input) is 4,600 lbs/hr or 2.3 tons/hr,

$$E = 7.2 \text{ lbs PM/hr.}$$

Based on the AP-42 (Table 9.5.3-2, 9/95) controlled emission factor of 0.76 lbs PM-10/ton product and an assumed 60% PM control efficiency during testing, the uncontrolled emission factor is $0.76 \text{ lbs/ton} / (1-0.60) = 1.9 \text{ lbs/ton product}$. Hence, uncontrolled emissions would be $1.9 \text{ lbs/ton} \times 1.15 \text{ tons/hr} = 2.2 \text{ lbs PM/hr}$.

Therefore, the dryer is expected to be in compliance with this Chapter 40 emission standard without any controls under normal operations. The specification of a venturi scrubber for PM emission reduction adds additional assurance of compliance.

For the continuous cooker URN 35 with a process weight rate of 46,000 lbs/hr or 23.0 tons/hr,

$$E = 33.5 \text{ lbs PM/hr.}$$

The Dupps Company used an uncontrolled emission factor of 0.697 lb/ton input for the continuous cooker. Hence, uncontrolled emissions would be

$$0.697 \text{ lb/ton input} \times 23.0 \text{ tons input /hr} = 16.0 \text{ lbs PM/hr.}$$

The cooker is therefore expected to be in compliance with this Chapter 40 emission standard without any controls under normal operations. The specification of a condenser for PM emission reduction adds additional assurance of compliance.

The required periodic monitoring and recordkeeping of scrubber performance parameters will indicate operations are conducted with air pollution control equipment that is being properly maintained.

9 VAC 5-50-80- Visible emission limits of 20% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30% opacity.

Monitoring and Recordkeeping

Since URN 7 and 35 have add-on controls for PM, applicability of 40 CFR 64- Compliance Assurance Monitoring (CAM) has to be determined.

As discussed above, the estimated uncontrolled emissions for URN 7 and URN 35 are 2.2 lbs/hr and 16.0 lbs/hr, respectively.

Hence, the annual potential to emit without control for URN 7 is:
 $2.2 \text{ lbs/hr} \times 8760 \text{ hrs/yr} \times 1 \text{ ton}/2000 \text{ lbs} = 9.6 \text{ tons/yr}$

The annual potential to emit without control for URN 35 is:
 $16.0 \text{ lbs/hr} \times 8760 \text{ hrs/yr} \times 1 \text{ ton}/2000 \text{ lbs} = 70.1 \text{ tons/yr}$

They are below the major source level. Hence, CAM is not applicable to the units.

Part 70 requirements for periodic monitoring are met as follows (Conditions 37-42):

- The continuous monitors for the venturi scrubber flow rate and pressure drop shall be observed once per shift, and log entries are made.
- The scrubber shall be inspected and washed-out weekly.
- Inspection for leaks shall be made monthly on the ductwork, condenser, and scrubber. Internal inspection of the condenser and the scrubber for structural integrity shall be made semiannually.
- Visible emission observation of the scrubber stack shall be made at least once each week during daylight hours; necessary corrective action and appropriate log entries shall be made.
- Maximum rendering equipment capacities shall be assessed annually to derive the PM limit from the above 9 VAC 5-40-260 equation.

The permit includes requirements for maintaining records of all above monitoring.

Testing

The permit does not require testing for the rendering equipment. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

There are no reporting requirements.

Streamlined Requirements

There are no NSR permit conditions on the rendering process to streamline.

FACILITY WIDE CONDITIONS

9 VAC 5-50-20 F-Volatile organic compound disposal condition was deemed a useful reminder for the facility (Condition 43).

Minor NSR general conditions that are not represented in the Title V permit General Conditions are included here (Conditions 44-46): Violation of Ambient Air Standards, Recordkeeping of Malfunctions, and Recordkeeping of Maintenance/ Operating Procedures.

The minor NSR requirements that test ports to be provided upon request by DEQ and appropriate test methods to be used if additional testing is necessary, are also included here (Conditions 47 and 48).

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

Comments on General Conditions

General Conditions 52 to 57- Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement No. 2-09".

This general condition cites the sections that follow:

9 VAC 5-80-80. Application

9 VAC 5-80-140. Permit Shield

9 VAC 5-80-150. Action on Permit Applications

General Condition 63- Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

General Condition 67- Permit Modification

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources

9 VAC 5-80-190. Changes to Permits

9 VAC 5-80-260. Enforcement

9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources

9 VAC 5-80-1605. Applicability, Permits For Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas

9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications Locating in Nonattainment Areas

General Conditions 81-84- Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Conditions 82 and 63. For further explanation see the comments on general condition 63.

This general condition cites the sections that follow:

9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction

9 VAC 5-80-110. Permit Content

STATE ONLY APPLICABLE REQUIREMENTS

The following Virginia Administrative Codes have specific requirements only enforceable by the State and have been identified as applicable to the rendering process:

9 VAC 5 Chapter 40, Part II, Article 2: Emission Standards for Odors
9 VAC 5-50-140- No owner or other person shall cause or permit to be discharged into the atmosphere from any affected facility any emissions which cause an odor objectionable to individuals of ordinary sensibility.

Requirements on handling of rendering wastes, transit area surfaces, ponded waters, and finished product spills to meet the odor standards, and necessary recordkeeping to demonstrate compliance are added as allowed by 9 VAC 5-80-300.

FUTURE APPLICABLE REQUIREMENTS

MACT Subpart JJJJJJ, Boiler MACT for area sources, applies to the facility boilers if they do not meet the definition of gas-fired boilers as discussed above.

INAPPLICABLE REQUIREMENTS

The following requirements have been identified as being inapplicable:

Citation	Title of Citation	Description of Applicability
40CFR60 Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	This subpart is not applicable to boilers URN 51- 54, and 86. Except for URN 86, the units were constructed prior to the applicability date of the NSPS (6/9/89), and the addition of economizers in 2007 does not meet the definition of NSPS modification. URN 86 was constructed in 1994, however, it is smaller than 10 MMBTU/hr.
9 VAC 5-40-880 et seq., Part II, Article 8	Emissions Standards for Fuel Burning Equipment	Boilers URN 52-54 are not subject to the PM and SO ₂ emission standards of Article 8. They were installed in 1978, and commenced operation before October 5, 1979, specified in 9 VAC 5-40-890 C as the date prior to which a unit's capacity shall be

Citation	Title of Citation	Description of Applicability
		considered part of the fuel burning equipment (FBE) capacity of the facility, however, they were modified in 2007 and subject to the more stringent requirements of NSR permits dated 6/12/07 and 3/18/13.
9 VAC 5-40-880 et seq., Part II, Article 8	Emissions Standards for Fuel Burning Equipment	Smokehouse and smoke generators using cord wood, wood chips and sawdust, food processing ovens, and hog singers do not meet the definition of fuel burning equipment in Article 8.
40CFR 60, Subpart Kb, as amended.	NSPS for Volatile Organic Liquid Storage Vessels Constructed, Modified, or Reconstructed After 23 July 1984 with Storage Capacity Greater Than 75 Cubic Meters (19,817 gallons)	Tanks 23 and 82- 84 have capacity of 12,000 gallons, less than the threshold for Kb applicability (19,817 gallons). Tanks 22 and 81 have capacity of 24,812 gallons and 27,150 gallons, respectively, but store residual oil that has maximum true vapor pressure less than 2.16 psi.
40 CFR 60 Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	The facility does not have any internal combustion engines that are subject to the rule.
40 CFR 63 Subpart ZZZZ	National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	The facility does not have any internal combustion engines that are subject to the rule.

The startup, shut down, and malfunction opacity exclusion listed in 9 VAC 5-40-20 A.4 cannot be included in any Title V permit. This portion of the regulation is not part of the federally approved state implementation plan. The opacity standard applies to existing sources at all times including startup, shutdown, and malfunction. Opacity exceedances during malfunction can be affirmatively defended provided all requirements of the affirmative defense section of this permit are met. Opacity exceedances during startup and shut down will be reviewed with enforcement discretion using the requirements of 9 VAC 5-40-20 E, which state that "At all times, including periods of startup, shutdown, soot blowing and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions."

Greenhouse Gas (GHG) regulations:

The provisions of 40 CFR Part 98 requires owners and operators of general stationary fuel combustion sources that emit 25,000 metric tons CO₂e or more per year in combined emissions from such units, to report greenhouse gas (GHG) emissions, annually. The definition of "applicable requirement" in 40 CFR 70.2 and 71.2 does not include requirements such as those included in Part 98, promulgated under Clean Air Act (CAA) section 114(a)(1) and 208.

Therefore, the requirements of 40 CFR Part 98 are not applicable under the Title V permitting program. In any case, based on the 2011 annual emission inventory showing CO emissions of 15.3 tons/yr, and AP-42 emission factor of 84 lbs CO/million cubic feet natural gas relative to 120,000 lbs CO₂e /million cubic feet natural gas, CO₂e emissions can be estimated as:

$$15.3 \text{ tons/yr} \times 120,000/84 = 21,857 \text{ tons/yr which is } < 25,000 \text{ metric tons/yr}$$

As a result of several EPA actions regarding GHG under the CAA, emissions of GHG must be addressed for a Title V permit renewed after January 1, 2011. The current minor NSR permits for the facility contain no GHG-specific applicable requirements and there have been no modifications at the facility that increases their CO₂e emissions by more than 75,000 tons/year. Therefore, there are no applicable requirements for the facility specific to GHG.

COMPLIANCE PLAN

There is no compliance plan associated with this permit.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation ¹	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
5 (South)	Rendered grease tank, 19,183-gal AST	9 VAC 5-80-720 A	NA	NA
6 (South)	Rendered grease tank, 15,600-gal AST	9 VAC 5-80-720 A	NA	NA
8 (South)	Dupps Hair Dryer	9 VAC 5-80-720 C	NA	3.5 MMBTU/hr; 3 tons/hr
9 (South)	Rendered grease tank, 15,600-gal AST	9 VAC 5-80-720 A	NA	NA
10 (South)	Rendered grease tank, 15,600-gal AST	9 VAC 5-80-720 A	NA	NA
11 (PPH)	Julian Food Processing Oven	9 VAC 5-80-720 C	NA	1.87 MMBTU/hr
12 (PPH)	Julian Food Processing Oven	9 VAC 5-80-720 C	NA	1.87MMBTU/hr
13 (PPH)	Julian Food Processing Oven	9 VAC 5-80-720 C	NA	1.87 MMBTU/hr
14 (PPH)	Alkar Food Processing Oven	9 VAC 5-80-720 C	NA	2.75 MMBTU/hr
15 (PPH)	Alkar Food Processing Oven	9 VAC 5-80-720 C	NA	2.75 MMBTU/hr
16 (PPH)	Alkar Food Processing Oven	9 VAC 5-80-720 C	NA	2.75 MMBTU/hr
17 (South)	Alkar Food Processing Oven	9 VAC 5-80-720 C	NA	2.75 MMBTU/hr
18 (PPH)	Alkar Food Processing Oven	9 VAC 5-80-720 C	NA	2.75 MMBTU/hr
19 (PPH)	Alkar Food Processing Oven	9 VAC 5-80-720 C	NA	2.75 MMBTU/hr
22 (South)	Residual Oil Storage Tank, 24,812-gal AST	9 VAC 5-80-720 B	VOC	NA

Smithfield Packing Company, Inc. - Complex
TRO-60270
Statement of Basis
June 3, 2013
Page 20

Emission Unit No.	Emission Unit Description	Citation ¹	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
23 (South)	Distillate Oil Tank, 12,000-gal AST	9 VAC 5-80-720 B	VOC	NA
24 (South)	Refrigeration Oil Tank, 1,000-gal AST	9 VAC 5-80-720 B	VOC	NA
25 (PPH)	Hydraulic Oil Storage Tank, AST	9 VAC 5-80-720 C	NA	550 gallons
28 (South)	Kerosene Storage Tank, 500-gal AST	9 VAC 5-80-720 B	VOC	NA
29 (North)	Waste Oil Storage Tank, AST	9 VAC 5-80-720 C	NA	480 gal
30 (PPH)	Waste Oil Storage Tank, AST	9 VAC 5-80-720 C	NA	500 gallons
31 (South)	Rendered grease tank, 65,000-gal AST	9 VAC 5-80-720 A	NA	NA
32 (South)	Rendered grease tank, 65,000-gal AST	9 VAC 5-80-720 A	NA	NA
36 (South)	ANCO 1212 Hair Hydrolyser, 1989, 6,000 lbs/hr input	9 VAC 5-80-720 B	PM	NA
37F (South)	Truck Road Dust	9 VAC 5-80-720 B	PM	NA
38F (South)	Wastewater Treatment Facilities, 1.5 mm gal/day	9 VAC 5-80-720 B	VOC	NA
39F (PPH)	Ammonia Refrigeration	9 VAC 5-80-720 B	NH3	NA
42 (South)	Rendered grease tank, 19,183-gal AST	9 VAC 5-80-720 A	NA	NA
43 (South)	Diesel tank for fire suppression system, 400 gal	9 VAC 5-80-720 A	NA	NA
44 (South)	Diesel tank for fire suppression, 400 gal	9 VAC 5-80-720 A	NA	NA
55 (North)	Continental natural gas-fired boiler, manufactured and installed in 1962	9 VAC 5-80-720C	NA	4.3 million Btu/hr
57 (North)	Julian Food Processing Oven	9 VAC 5-80-720C	NA	2.9 million Btu/hr
58 (North)	Julian Food Processing Oven	9 VAC 5-80-720C	NA	2.9 million Btu/hr
59 (North)	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	1.7 million Btu/hr

Smithfield Packing Company, Inc. - Complex
TRO-60270
Statement of Basis
June 3, 2013
Page 21

Emission Unit No.	Emission Unit Description	Citation ¹	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
60 (North)	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	1.7 million Btu/hr
61 (North)	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	1.7 million Btu/hr
62 (North)	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	1.7 million Btu/hr
63 (North)	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
64 (North)	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
65 (North)	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
66 (North)	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
67 (North)	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
68 (North)	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
69 (North)	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
70 (North)	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
71 (North)	Julian Food Processing Oven	9 VAC 5-80-720C	NA	1.5 million Btu/hr
78 (North)	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	1.7 million Btu/hr
79 (North)	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	1.7 million Btu/hr
81 (North)	Residual Oil Storage Tank, 27,150-gal AST	9 VAC 5-80-720B	VOC	NA
82 (North)	Diesel Fuel Dispensing Tank, 550-gal AST	9 VAC 5-80-720A	NA	NA
83 (North)	Hydraulic Oil Storage Tank, AST	9 VAC 5-80-720C	NA	500 gallons
84 (North)	Refrigeration Oil Tank, AST	9 VAC 5-80-720C	NA	500 gallons
85 (North)	Meat Smokehouse (Plant 3B)	9 VAC 5-80-720B	PM, VOC	NA
88F (North)	Wastewater Treatment, 2 MM gal/day	9 VAC 5-80-720B	VOC	NA
90 (North)	Auxiliary head singer, 2012, 6 million Btu/hr	9 VAC 5-80-720B	PM	NA
91 (North)	Stork Nijhuis Hog Singer, 8.1 million Btu/hr	9 VAC 5-80-720B	PM	NA
92 (North)	Stork Nijhuis Hog Singer, 8.1 million Btu/hr	9 VAC 5-80-720B	PM	NA

Smithfield Packing Company, Inc. - Complex
TRO-60270
Statement of Basis
June 3, 2013
Page 22

Emission Unit No.	Emission Unit Description	Citation ¹	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
93 (North)	Bacon Grease Tank, 9,000-gal AST	9 VAC 5-80-720 A	NA	NA
94 (North)	Bacon Grease Tank, 9,000-gal AST	9 VAC 5-80-720 A	NA	NA
95 (North)	Gasoline Tank, 1,000-gal AST	9 VAC 5-80-720 B	VOC	NA
96 (North)	Used Oil Tank, 1,000-gal AST	9 VAC 5-80-720 B	VOC	NA
97 (North)	Waste Oil from Remediation Project, AST	9 VAC 5-80-720 C	NA	250 gallons
CB1 (North)	Clean Burn Used Oil Heating Unit, 0.14 mmBTU/hr	9 VAC 5-80-720 B	SO ₂	NA
CB2 (North)	Clean Burn Used Oil Heating Unit, 0.14 mmBTU/hr	9 VAC 5-80-720 B	SO ₂	NA
TS-1 & TS-2	Two (2) Truck Shop used oil heaters, Model CB-2500 Clean Burn Energy Systems, 250,000 Btu/hr each	9 VAC 5-80-720 B	SO ₂	
TS-3	Truck Shop hot water heater, 1999, natural gas, Niagara Model 10,000	9 VAC 5-80-720 C	NA	880,000 BTU/hr
TS-4 & TS-5	Two (2) Truck Shop USTs for diesel, 25,000 gal each	9 VAC 5-80-720 A	NA	NA
TS-6 to 9	Four (4) Truck Shop ASTs, 1,500 gal each, two for new motor oil, and two for used oil	9 VAC 5-80-720 B	VOC	
TS-10	Truck Shop AST for used oil	9 VAC 5-80-720 C	NA	275 gal
TS-11	Truck Shop AST for used antifreeze, 250 gal	9 VAC 5-80-720 B	VOC	
TS-12	Truck Shop AST for used oil	9 VAC 5-80-720 C	NA	500 gal
TS-13 to 28	Truck Shop sixteen (16) natural gas heaters, 1999	9 VAC 5-80-720 C	NA	52,000 BTU/hr each
R-1 (R&D)	Natural Gas Rental Boiler	9 VAC 5-80-720C	NA	8.37 MMBTU/hr
105 (R&D)	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	0.55 MMBTU/hr

Emission Unit No.	Emission Unit Description	Citation ¹	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
106 (R&D)	Alkar Food Processing Oven	9 VAC 5-80-720C	NA	0.55 MMBTU/hr
107 (R&D)	Kartridge Pak Smoke Generator, 3.5 kW	9 VAC 5-80-720B	VOC, PM	NA
OWS 20 (North)	Oil-Water Separator for diesel fuel, maximum design 1,200 gal/hr	9 VAC 5-80-720B	VOC	NA

¹The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

The proposed permit will be placed on public notice in The Virginian-Pilot newspaper from Wednesday, April 17, 2013 to Friday, May 17, 2013.