



# ***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: **October 17, 2013**

Regional Air Permits Manager: \_\_\_\_\_  
Troy D. Breathwaite

Date: **October 17, 2013**

Regional Director: \_\_\_\_\_  
Maria R. Nold

Date: **October 17, 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

The facility 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. Most emission units are located in the North plant and the South plant. 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. 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.

Currently, the facility has two minor NSR permits, dated 6/12/07 and 3/18/13, respectively. Based on the NSR permit limits and the potential to emit of non-permitted units, the source is Title V major for SO<sub>2</sub> and NO<sub>x</sub>. It is no longer PSD major for those pollutants after the issuance of the 3/18/13 NSR when four existing boilers (URN1 through 4) were removed. The facility is an area source of HAP emissions.

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

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 includes blood dryer URN 7 and continuous cooker URN 35 that have a venturi scrubber and a shell-and-tube condenser, respectively, for the control of PM as well as odor. Other process equipment at the facility includes smoke generators, ovens, hog singers, oil tanks, etc..., many of which 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.

**EMISSIONS INVENTORY**

A copy of the 2012 annual emission update is attached. Emissions are summarized in the following tables.

2012 Actual Emissions

|       | 2012 Criteria Pollutant Emission in Tons/Year |      |                 |                  |                 |
|-------|---|------|-----------------|------------------|-----------------|
|       | VOC   | CO   | SO <sub>2</sub> | PM <sub>10</sub> | NO <sub>x</sub> |
| Total | 8.6   | 15.5 | 2.3             | 5.9              | 19.0            |

| Pollutant      | 2012 Hazardous Air Pollutant Emission in Tons/Year |
|----------------|--|
| Formaldehyde   | 0.034  |
| Lead Compounds | 0.000  |

**REQUESTED MODIFICATION**

The facility applied on 7/12/13 to include the two on-site emergency fire pumps that were left out of the application for the Title V permit renewal that was issued on 6/03/13. Information on the two units is shown below.

| Emission Unit ID | Emission Unit Description                    | Type of fuel | Size/Rated Capacity | Applicable Federal Regulation           |
|------------------|--|--------------|---------------------|---|
| URN 6A South     | Clarke fire pump Model JU6H-UFABL8, 2009     | Diesel       | 173 HP              | NSPS Subpart IIII and MACT Subpart ZZZZ |
| URN 6B South     | Clarke fire pump Model DDFP-T3DT 5114F, 1998 | Diesel       | 175 HP              | MACT Subpart ZZZZ                       |

These units are exempt from minor NSR permitting requirements by 9 VAC 5-80-1105 B because of their sizes and their use for emergency only. However, they are subject to federal regulations. URN 6A, installed in 2009, is subject to 40 CFR 60 Standards of Performance for New Stationary Sources, Subpart IIII- Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII), and 40 CFR 63 National Emission Standards for Hazardous Air Pollutants for Source Categories Subpart ZZZZ- National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (MACT Subpart ZZZZ). The older URN 6B, installed in 1998, is subject to MACT Subpart ZZZZ as an existing unit at an area source. The above NSPS and MACT are not delegated to Virginia; therefore, their applicable requirements did not need to be included in the facility's minor NSR permits. However, all federally applicable requirements have to be incorporated into the Title V permit. Therefore, the facility had requested a Title V permit modification to address the overlooked fire pump engines.

#### **APPLICABILITY OF 9 VAC 5-80-210- MINOR PERMIT MODIFICATIONS**

This Title V permit modification will add two emission units that have been present at the facility for several years, and include all applicable federal requirements on those units. It does not do any of the following:

- Violate any applicable requirement;
- Require significant changes to the existing monitoring, reporting or recordkeeping requirements in the permit such as a change to the method of monitoring to be used, a change to the method of demonstrating compliance or a relaxation of reporting or recordkeeping requirement;
- Require a case-by-case determination of an emission limitation or other standards, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
- Seek to establish or change a permit term or condition for which there is no corresponding underlying applicable federal requirement and that the source has assumed to avoid an applicable federal requirement to which the source would otherwise be subject. Such terms and conditions include:
  - A federally enforceable emissions cap assumed to avoid classification as a Title I modification; and
  - An alternative emissions limit approved pursuant to regulations promulgated under § 112(i)(5) of the federal Clean Air Act.

As a result, the modification is not disqualified as a minor modification. It is also not required to be processed as a significant modification under 9VAC5-80-230 or as an administrative permit amendment under 9VAC5-80-200. Therefore, this modification will be processed using the Minor Modification Procedures as defined in 9 VAC 5-80-210.

#### **CHANGES TO THE TITLE V PERMIT- EQUIPMENT LIST**

The two emergency fire pumps are added to the fuel burning equipment list.

#### **CHANGES TO TITLE V PERMIT- SECTION ON FUEL BURNING EQUIPMENT, OVENS AND SMOKE GENERATORS REQUIREMENTS**

All applicable requirements to emergency fire pumps URN 6A and 6 B are added to the Title V permit. As the units were manufactured and constructed at different times, they belong to different engine categories subject to different requirements which have to be addressed separately.

URN 6A fire pump is a 2009 model compression ignition internal combustion engine (CI ICE). It is subject to NSPS Subpart IIII because it was manufactured as a certified National Fire Protection Association (NFPA) engine after 7/01/2006. It is also subject to MACT Subpart ZZZZ which in turn refers to the NSPS Subpart IIII without additional requirements according to 40 CFR 63.6590(c). In the NSPS, it belongs to the category of fire pump engines with a displacement of less than 30 liters/cylinder, manufactured prior to the model years in Table 3 of NSPS Subpart IIII (2010 and later for engines of URN 6A size of  $100 \leq \text{HP} \leq 175$ ). Applicable requirements are entered into the Title V permit as follows:

Condition 36: To qualify as an emergency CI ICE, the engine operation has to meet the definition in 40 CFR 60.4219 and the operating hour limitations in 40 CFR 60.4211(f). Additionally, to be exempt from minor NSR permitting, it has to meet the definition of emergency in 9 VAC 5-80-1110 and the 500 hours operation limit per year in 9 VAC 5-80-1105 B.

Conditions 37 and 38: The allowed fuel is diesel meeting the standards in 40 CFR 80.510(b). The maximum allowed sulfur content is 0.0015% which shall be indicated in fuel certifications obtained by the permittee for each shipment.

Condition 39: The emission standards for the engine size in Table 4 of NSPS Subpart IIII apply.

Condition 40: Compliance requirements on operation and maintenance, and demonstration of compliance to emission standards.

Condition 41: Required installation of a non-resettable hour-meter.

Condition 42: Monitoring requirements for the back pressure of the diesel particulate filter.

Condition 43: Requirement by Reference to NSPS Subpart IIII in general.

Condition 24: Records of maintenance, any corrective action concerning high back pressure monitoring results for the diesel particulate filter, hours of operation, and compliance demonstration for URN 6A are added to the list of records required to be kept for all fuel burning equipment. Fuel certification requirement for diesel fuel is already in the condition.

URN 6B fire pump is a 1998 model compression ignition internal combustion engine (CI ICE). It is not subject to NSPS Subpart IIII because it was manufactured as a certified National Fire Protection Association (NFPA) engine before 7/01/2006. However, it is subject to MACT Subpart ZZZZ as an existing reciprocating internal combustion engine (RICE) ≤ 500 HP located at an area source of HAP, constructed before June 12, 2006. Applicable requirements are entered into the Title V permit as follows:

Condition 44: To qualify as an emergency RICE, the engine operation has to meet the definition in 40 CFR 63.6675 and the operating hour limitations in 40 CFR 63.6640(f). Additionally, to be exempt from minor NSR permitting, it has to meet the definition of emergency in 9 VAC 5-80-1110 and the 500 hours operation limit per year in 9 VAC 5-80-1105 B.

Condition 45: Operation and maintenance practice concerning oil and filter changes, air cleaner inspections, hose and belt inspections, manufacturer's instructions, and idling time during startup.

Condition 46: Required installation of a non-resettable hour-meter if one has not been installed.

Condition 47: Reports as required in Footnote 2 of Table 2d in MACT Subpart ZZZZ whenever the facility has to delay maintenance practice due to emergency operation. Note that the annual reporting requirements in 40 CFR 63.6650(h) (as amended, FR 78, January 30, 2013) does not apply because the facility does not use the engine for demand response or voltage fluctuations as described in 40 CFR 63.6640(f)(2)(ii) or (iii), respectively, or for any financial agreement as described in 40 CFR 63.6640(f)(4)(ii).

Condition 48: Requirement by Reference to MACT Subpart ZZZZ in general.

Condition 24: Records of hours of operation and maintenance practice, and any required reports for URN 6B are added to the list of records required to be kept for all fuel burning equipment.

#### **CHANGES TO TITLE V PERMIT- SECTIONS ON RENDERING PROCESS EQUIPMENT REQUIREMENTS, FACILITY WIDE CONDITIONS, AND INSIGNIFICANT EMISSION UNITS**

Condition 57 in the Facility Wide Conditions section is slightly different from Condition 44- Facility Wide Conditions – Limitations – Violation of Ambient Air Quality Standard in the 6/03/13 renewal permit. The latter inadvertently addressed the South Division while it meant to apply to the whole facility. Therefore, the phrase "Smithfield Packing Co., Inc.- South Division shall" was changed to "The permittee shall".

No other changes are made except for the condition numbers because of the additional conditions added for the fire pumps in the preceding section.

**CHANGES TO TITLE V PERMIT- SECTION ON PERMIT SHIELD & INAPPLICABLE REQUIREMENTS**

Because the existence of the emergency fire pumps URN 6A and 6B was not known during the processing of the last Title V renewal permit, NSPS Subpart IIII and MACT Subpart ZZZZ were identified as being inapplicable. Those statements had to be removed from the list of inapplicable requirements which is corrected as shown below:

| 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 <sub>2</sub> 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 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. |
| 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).<br>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.   |

**CHANGES TO TITLE V PERMIT- SECTIONS ON GENERAL CONDITIONS, AND STATE-  
ONLY APPLICABLE REQUIREMENTS**

No changes are made except for the condition numbers because of the additional conditions added for the fire pumps.

**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 public participation requirements of 9 VAC 5-80-270 do not apply to minor modifications. Therefore, a public notice is not required.

Under 9 VAC 5-80-210, the affected state (NC) has been notified.