



Office of Environmental Quality Control

Bureau of Air Quality

Title V Operating Permit

Duke Energy Carolinas LLC, W.S. Lee Steam Station
Lee Station S-4-178
Pelzer, South Carolina 29669
Anderson County
(Permit Updated 07/13/16)

In accordance with the provisions of the *Pollution Control Act*, Sections 48-1-50(5) and 48-1-110(a), the 1976 *Code of Laws of South Carolina*, as amended, and *South Carolina Regulation 61-62, Air Pollution Control Regulations and Standards*, the Bureau of Air Quality authorizes the operation of this facility and the equipment specified herein in accordance with valid construction permits, and the plans, specifications, and other information submitted in the Title V permit application received on July 1, 2011 and updated January 29, 2015, as amended.

The operation of this facility is subject to and conditioned upon the terms, limitations, standards, and schedules contained herein or as specified by this permit and its accompanying attachments.

Permit Number: TV-0200-0004

Issue Date: October 2, 2015
Renewal Due Date: June 30, 2020

Effective Date: January 1, 2016
Expiration Date: December 31, 2020

Director, Engineering Services Division
Bureau of Air Quality

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 2 of 24

(Permit Updated 07/13/16)

RECORD OF REVISIONS		
Date	Type	Description of Change
07/13/2016	MM	Removed lb/Million Btu conversion limits from Condition C.11 based on Standard No. 5.2 update, corrected regulatory citation in Condition C.14 and updated Condition C.16 operational ranges for Unit ID 11.
07/13/2016	AA	Incorporated PSD/BACT conditions for Unit ID 03 and Unit ID 12 from PSD permit 0200-0004-CG-R1 and updated Attachment – Emission Rates for Ambient Air Standards to reflect these changes.

- AA Administrative Amendment
- MM Minor Modification
- SM Significant Modification

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 3 of 24

(Permit Updated 07/13/16)

A. EMISSION UNIT DESCRIPTION

Emission Unit ID	Emission Unit Description
01	VOID – Unit #1 Boiler
02	VOID – Unit #2 Boiler
03	Unit #3 Boiler w/SOFA
04	VOID - #4C Combustion Turbine
05	VOID - #5C Combustion Turbine
06	VOID - #6C Combustion Turbine
07	VOID – Auxiliary Boiler
08	VOID – Emergency Diesel Engine
09	VOID – Diesel Starting Engine
10	7C Combustion Turbine
11	8C Combustion Turbine
12	Auxiliary Boiler

B EQUIPMENT AND CONTROL DEVICE(S)

B.1 EQUIPMENT FOR EMISSION UNIT 03 – Unit #3 Boiler w/SOFA

Equipment ID	Equipment Description	Installation Date/Modification Date	Control Device ID	Emission Point ID
U3	2,252 Million Btu/hr nominally rated Boiler with Separated Overfire Air (SOFA) and Low NO _x burner nozzle tips (burning natural gas)	Installed 12/5/1958 Modified 1/1/2015 (removed LOFIR and installed Low NO _x burner nozzle tips)	None	EP-5, EP-6

B.2 EQUIPMENT FOR EMISSION UNIT 10 – 7C Combustion Turbine

Equipment ID	Equipment Description	Installation Date/Modification Date	Control Device ID	Emission Point ID
CT7C	Simple cycle combustion turbine with Fixed Inlet Guide Vane (FIGV) and nominally rated heat inputs of 41 MW, 475 Million Btu/hr (burning natural gas), and 449 Million Btu/hr (burning distillate fuel oil)	Installed 1/20/2006 Modified 1/16/2008 (FIGV design correction)	7C(WI)	EP-13

B.3 CONTROL DEVICE(S) FOR EMISSION UNIT ID 10 – 7C Combustion Turbine

Control Device ID	Control Device Description	Installation Date/Modification Date	Pollutant(s) Controlled
7C(WI)	GE Mark 6E dual fuel water injection	1/20/2006	NO _x

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 4 of 24

(Permit Updated 07/13/16)

B.4 EQUIPMENT FOR EMISSION UNIT 11 – 8C Combustion Turbine

Equipment ID	Equipment Description	Installation Date/Modification Date	Control Device ID	Emission Point ID
CT8C	Simple cycle combustion turbine with Fixed Inlet Guide Vane (FIGV) and nominally rated heat inputs of 41 MW, 475 Million Btu/hr (burning natural gas), and 449 Million Btu/hr (burning distillate fuel oil)	Installed 1/20/2006 Modified 1/16/2008 (FIGV design correction)	8C(WI)	EP-14

B.5 CONTROL DEVICE(S) FOR EMISSION UNIT ID 11 – 8C Combustion Turbine

Control Device ID	Control Device Description	Installation Date/Modification Date	Pollutant(s) Controlled
8C(WI)	GE Mark 6E dual fuel water injection	1/20/2006	NO _x

B.6 EQUIPMENT FOR EMISSION UNIT 12 – Auxiliary Boiler

Equipment ID	Equipment Description	Installation Date/Modification Date	Control Device ID	Emission Point ID
AuxB	8.3 Million Btu/hr natural gas-fired auxiliary boiler	2/8/2007	None	EP-10

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Condition
C.1	<p>Emission Unit ID: All</p> <p>Equipment/Control Device ID: All</p> <p>Equipment capacities provided under the Equipment Description column of the Equipment Tables above are not intended to be permit limits unless otherwise specified within the Table of Conditions for the particular equipment. However, this condition does not exempt the facility from the construction permitting process, from PSD review, nor from any other applicable requirements that must be addressed prior to increasing production rates.</p>
C.2	<p>Emission Unit ID: All</p> <p>Equipment/Control Device ID: All</p> <p>(S.C. Regulation 61-62.1, Section II.J.1.g) A copy of the Department issued construction and/or operating permit must be kept readily available at the facility at all times. The owner or operator shall maintain such operational records; make reports; install, use, and maintain monitoring equipment or methods; sample and analyze emissions or discharges in accordance with prescribed methods at locations, intervals, and procedures as the Department shall prescribe; and provide such other information as the Department reasonably may require. All records required to demonstrate compliance with the limits established under this permit shall be maintained on site for a period of at least 5 years from the date the record was generated and shall be made available to a Department representative upon request.</p>
C.3	<p>Emission Unit ID: 10, 11</p> <p>Equipment/Control Device ID: CT7C/7C(WI), CT8C/8C(WI)</p> <p>For any source test required under an applicable standard or permit condition, the owner, operator, or representative shall comply with S.C. Regulation 61-62.1, Section IV - Source Tests.</p>

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 5 of 24

(Permit Updated 07/13/16)

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Condition
	<p>Unless approved otherwise by the Department, the owner, operator, or representative shall ensure that source tests are conducted while the source is operating at the maximum expected production rate or other production rate or operating parameter which would result in the highest emissions for the pollutants being tested. Some sources may have to spike fuels or raw materials to avoid being subjected to a more restrictive feed or process rate. Any source test performed at a production rate less than the rated capacity may result in permit limits on emission rates, including limits on production if necessary.</p> <p>The owner or operator shall comply with any limits that result from conducting a source test at less than rated capacity. A copy of the most recent Department issued source test summary letter, whether it imposes a limit or not, shall be maintained with the operating permit, for each source that is required to conduct a source test.</p> <p>Site-specific test plans and amendments, notifications, and source test reports shall be submitted to the Manager of the Source Evaluation Section, Bureau of Air Quality.</p>
C.4	<p>Emission Unit ID: 10, 11</p> <p>Equipment/Control Device ID: CT7C/7C(WI), CT8C/8C(WI)</p> <p>The owner/operator shall inspect, calibrate, adjust, and maintain continuous monitoring systems, monitoring devices, and gauges in accordance with manufacturer’s specifications or good engineering practices. The owner or operator shall maintain on file all measurements including continuous monitoring system or monitoring device performance measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required in a permanent form suitable for inspection by Department personnel.</p>
C.5	<p>Emission Unit ID: 10, 11</p> <p>Equipment/Control Device ID: CT7C/7C(WI), CT8C/8C(WI)</p> <p>All gauges shall be readily accessible and easily read by operating personnel and Department personnel (i.e. on ground level or easily accessible roof level). Monitoring parameter readings (i.e., pressure drop readings, etc.) and inspection checks shall be maintained in logs (written or electronic), along with any corrective action taken when deviations occur. Each incidence of operation outside the operational ranges, including date and time, cause, and corrective action taken, shall be recorded and kept on site. Exceedance of operational range shall not be considered a violation of an emission limit of this permit, unless the exceedance is also accompanied by other information demonstrating that a violation of an emission limit has taken place. Reports of these incidences shall be submitted semiannually. If no incidences occurred during the reporting period then a letter shall indicate such.</p> <p>Any alternative method for monitoring control device performance must be preapproved by the Bureau and shall be incorporated into the permit as set forth in SC Regulation 61-62.70.7.</p>
C.6	<p>Emission Unit ID: 10, 11</p> <p>Equipment/Control Device ID: CT7C/7C(WI), CT8C/8C(WI)</p> <p>All references to NSPS or §60 in this permit, refer to both S.C. Regulation 61-62.60 - "South Carolina Designated Facility Plan And New Source Performance Standards" and Code of Federal Regulations Title 40, Part 60 – "Standards Of Performance For New Stationary Sources."</p> <p>All equipment specified in this permit as being subject to an NSPS are also subject to S.C. Regulation 61-62.60 and 40 CFR 60, Subpart A - General Provisions, and shall comply with all applicable provisions, in addition to those explicitly stated in this permit.</p>

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 6 of 24

(Permit Updated 07/13/16)

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Condition
C.7	<p>Emission Unit ID: 03</p> <p>Equipment/Control Device ID: U3</p> <p>In accordance with S.C. Regulation 61-62.5, Standard No. 1 - Emissions from Fuel Burning Operations, Section I – Visible Emissions, any fuel combustion source constructed before February 11, 1971 shall not discharge into the ambient air smoke which exceeds an opacity of forty (40) percent. The forty (40) percent opacity limit may be exceeded for sootblowing, but may not be exceeded for more than six (6) minutes in a one hour period nor be exceeded for more than a total of twenty-four (24) minutes in a twenty-four (24) hour period. Emissions caused by sootblowing shall not exceed sixty (60) percent opacity.</p> <p>The opacity standards set forth above do not apply during startup or shutdown. The owner/operator shall, to the extent practicable, maintain and operate any source in a manner consistent with good air pollution control practices for minimizing emissions.</p> <p>This source is permitted to burn only natural gas as fuel. The use of any other substances as fuel is prohibited without prior written approval from the Department.</p>
C.8	<p>Emission Unit ID: 03</p> <p>Equipment/Control Device ID: U3</p> <p>In accordance with S.C. Regulation 61-62.5, Standard No. 1 - Emissions from Fuel Burning Operations, Section II - Particulate Matter Emissions, the allowable discharge of particulate matter resulting from fuel burning operations is based on the input heat rate of each source. For sources operating below 1,300 Million BTU/hr heat input rate, the limit is 0.6 lb/Million BTU (3 hour block average). For sources operating equal to or above 1,300 Million BTU/hr heat input rate, the limit is expressed as a function of the input heat rate per the following equation:</p> $E = 57.84 P^{-0.637}$ <p>where E = the allowable emission rate in pounds per Million BTU heat input and P = Million BTU heat input per hour</p> <p>In accordance with SC Regulation 61-62.5, Standard No. 1 - Emissions from Fuel Burning Operations, Section III - Sulfur Dioxide Emissions, the maximum allowable discharge of SO₂ resulting from the fuel burning source is 2.3 lb/Million BTU heat input (24 hour block average).</p> <p>This source is permitted to burn only natural gas as fuel. The use of any other substances as fuel is prohibited without prior approval from the Department.</p>
C.9	<p>Emission Unit ID: 03</p> <p>Equipment/Control Device ID: U3</p> <p>In accordance with SC Regulation 61-62.5, Standard No. 7 – Prevention of Significant Deterioration (PSD) and based on BACT analysis, the facility is a potential major source for NO_x emissions. The existing Boiler 3 (U3) is subject to a PSD synthetic minor permit limit to restrict net emissions of NO_x to less than 40 tpy. Boiler 3 (U3) is limited to a NO_x emission factor of 0.149 lb/Million Btu or less and limited to operating at 60% or less annual capacity. The 60% or less annual capacity factor for the Unit 3 Boiler refers to the ratio of Unit 3 Boiler’s actual annual heat input (in million Btu or equivalent units of measure) to Unit 3 Boiler’s maximum potential heat input based on rated hourly heat input rate (in million Btu per hour or equivalent units of measure) times 8,760 hours. Annual in this PSD avoidance</p>

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 7 of 24

(Permit Updated 07/13/16)

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Condition
	<p>condition means a 12-month rolling average.</p> <p>Should the 12-month rolling average capacity factor exceed 60%, the facility may calculate actual emissions to determine if actual emissions remain under 40 tpy of net emissions of NO_x. Actual emissions may be calculated using actual heat inputs, current emission factors, hours associated with each mode of operation, and/or NO_x CEMS data. In accordance with SC Regulation 61-62.1, Section II(E), the owner/operator of Boiler 3 (U3) shall continue to maintain and operate a CEMS for measuring NO_x concentrations discharged to the atmosphere from the boiler and record the output of the system. The required NO_x continuous monitoring system shall be subject to the provisions of SC Regulation 61-62.75 Subpart A.</p> <p>The owner/operator shall maintain monthly records and any other records necessary to determine net NO_x emissions. Emissions from startups, shutdowns, malfunctions and upsets are required to be quantified and included in the calculations. Reports of the annual capacity factor and the 12-month rolling average as well as the NO_x emission factor and the 12-month rolling sums of NO_x emissions, calculated for each month in the reporting period, shall be submitted semiannually.</p> <p>An algorithm, including example calculations and emission factors, explaining the method used to determine emission rates shall only be included in the initial report. Subsequent submittals of the algorithm are required within 30 days of the change if the algorithm or basis for emissions is modified or the Department requests additional information.</p>
C.10	<p>Emission Unit ID: 10, 11</p> <p>Equipment/Control Device ID: CT7C/7C(WI), CT8C/8C(WI)</p> <p>In accordance with S.C. Regulation 61-62.5, Standard No. 4 - Emissions from Process Industries, Section IX - Visible Emissions (Where Not Specified Elsewhere), emissions (including fugitive emissions) from sources where construction or modification began after December 31, 1985 shall each not exhibit an opacity greater than twenty (20) percent.</p> <p>The owner/operator shall perform a visual inspection on each piece of equipment, while the equipment is operating, on a semiannual basis.</p> <p>Visual inspection means a qualitative observation of opacity during daylight hours where the inspector records results in a log, noting color, duration, density (heavy or light), cause, and corrective action taken for any abnormal emissions.</p> <p>The observer does not need to be certified to conduct valid visual inspections. However, at a minimum, the observer should be trained and knowledgeable about the effects on visibility of emissions caused by background contrast, ambient lighting, and observer position relative to lighting, wind, and the presence of uncombined water. No periodic monitoring for opacity will be required during periods of burning natural gas or propane only.</p> <p>Logs shall be kept to record all visual inspections, including cause and corrective action taken for any abnormal emissions and visual inspections from date of recording. The owner/operator shall submit semiannual reports. The report shall include records of abnormal emissions, if any, and corrective actions taken. If only natural gas was combusted or if the unit did not operate during the semiannual period, the report shall so state. Records of visual inspection shall be maintained on site.</p>
C.11	<p>Emission Unit ID: 10, 11</p> <p>Equipment/Control Device ID: CT7C/7C(WI), CT8C/8C(WI)</p> <p>In accordance with SC Regulation 61-62.5, Standard No. 5.2 – Control of Oxides of Nitrogen (NO_x), Section III, the</p>

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 8 of 24

(Permit Updated 07/13/16)

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Condition
	<p>allowable discharge of NO_x resulting from the fuel burning operations for a simple cycle gas turbine rated less than 50 Megawatts is as follows:</p> <ul style="list-style-type: none"> • ≤25 ppmv at 15 percent O₂ while burning natural gas, and • ≤42 ppmv at 15 percent O₂ while burning distillate fuel oil. <p>Water injection controls shall be operated when burning distillate fuel oil for electric dispatch at 25% and greater loads. The NO_x limits apply when the turbines are operating in dispatch mode and must be operated above 25% load, excluding startups, shutdowns and when operating in an alternate operating scenario (AOS) during low load operation.</p> <p>An alternate operating scenario (AOS) not to exceed 1900 hours/year for low load operation is approved as an alternate operating methodology reserved exclusively for Oconee Nuclear Station backup testing and maintenance and tertiary safe emergency shutdown, with either combustion turbine unit isolated from the electric grid and not available for electric dispatch, and for emergency blackstart for system recovery from a loss of the grid. This methodology shall not require water injection and NO_x dispatch mass emission rates of 41 lb/hr when burning gas and 69 lb/hr when burning oil, including variability allowance, shall not be exceeded. Low load operation is approximately 1.5 MW when firing on natural gas and approximately 0.8 MW when firing on distillate fuel oil. In addition, low load operation includes operation at less than 12 MW (<25% load) for required Oconee Nuclear Station backup load testing and emergency blackstart for system recovery from an emergency loss of the grid.</p> <p>In accordance with S.C. Regulation 61-62.5, Standard No. 5.2 – Control of Oxides of Nitrogen, Section VI, a stationary source that emits or has the potential to emit NO_x generated from fuel combustion constructed after 06/25/2004 must perform tune-ups every two years in accordance with manufacturer’s specifications or with good engineering practices. A tune-up plan must be developed and kept on file. All tune-up records are required to be maintained on site and available for inspection by the Department for a period of five years from the date generated.</p>
C.12	<p>Emission Unit ID: 10, 11</p> <p>Equipment/Control Device ID: CT7C/7C(WI), CT8C/8C(WI)</p> <p>In accordance with SC Regulation 61-62.5, Standard No. 7 – Prevention of Significant Deterioration (PSD), the turbines are subject to PSD synthetic minor permit limits to restrict net emissions of PM₁₀, SO₂, NO_x, and CO to less than PSD significant thresholds (PM₁₀ emissions less than 15 tpy, SO₂ emissions less than 40 tpy, NO_x emissions less than 40 tpy, and CO emissions less than 100 tpy). Each turbine is limited to operating at an annual capacity factor of 21% or less (includes dispatch and AOS hours) to demonstrate that net increased emissions remain under PSD significant net increase levels. Net increased emissions are emissions from CT7C and CT8C turbines minus contemporaneous emissions from removed turbines (4C, 5C, and 6C). The 21% capacity factor refers to the ratio of Unit 10 and Unit 11 turbines combined actual 12-month rolling average heat input (in million Btu or equivalent units of measure) to Unit 10 and Unit 11 turbines combined averaged heat input determined by maximum rated hourly heat input rate (in million Btu per hour or equivalent units of measure) times 8,760 hours. Annual in this PSD avoidance condition means a 12-month rolling average.</p> <p>The facility shall keep monthly records of fuel usage for each fuel type and operating hours for each mode of operation and calculate capacity factor on a 12-month rolling average basis. Should the 12-month rolling average capacity factor exceed 21%, the facility may calculate actual emissions using actual heat inputs, current emission factors and hours associated with each mode of operation and fuel type to determine if actual emissions remain under the PSD significant increase levels. Semiannual reports of capacity factors or alternate calculations shall be submitted.</p>
C.13	<p>Emission Unit ID: 10, 11</p> <p>Equipment/Control Device ID: CT7C/7C(WI), CT8C/8C(WI)</p>

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 9 of 24

(Permit Updated 07/13/16)

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Condition
	<p>In accordance with 40 CFR 60 Subpart KKKK, Standards of Performance for New Stationary Gas Turbines, on and after the date on which the performance test required by 40 CFR 60.8 is completed, a new turbine greater than 50 MMBtu/hr and less than or equal to 850 MMBtu/hr shall be limited to the following NO_x emissions.</p> <ul style="list-style-type: none">a. When firing natural gas, NO_x emissions shall be limited to 25 ppm at 15 percent O₂ or 150 ng/J of useful output (1.2 lb/MWh).b. When firing fuels other than natural gas, NO_x emissions shall be limited to 74 ppm at 15 percent O₂ or 460 ng/J of useful output (3.6 lb/MWh).c. When operating at less than 75 percent of peak load and/or operating at temperature less than 0°F, NO_x emissions shall be limited to 96 ppm at 15 percent O₂ or 590 ng/J of useful output (4.7 lb/MWh). <p>These sources have completed initial performance tests as required by 40 CFR 60 Subpart KKKK. In the event of any changes to the process that may increase emissions, the Bureau may request a source test to determine status and any appropriate actions if not in compliance.</p> <p>As specified by 40 CFR 60.4333, the owner/operator shall operate and maintain the stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.</p> <p>In accordance with 40 CFR 60.4335, the owner or operator of the subject stationary gas turbine subject to the provisions of Subpart KKKK and using water or steam injection to control NO_x emissions shall install, calibrate, maintain and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine when burning a fuel that requires water or steam injection for compliance (CEMs are allowed as an alternate method).</p> <p>As specified in 40 CFR 60.4355, the steam or water to fuel ratio or other parameters that are continuously monitored as described in 40CFR60.4335 and 40CFR60.4340 must be monitored during the performance test required under 40CFR60.8, to establish acceptable values and ranges. The owner/operator may supplement the performance test data with engineering analyses, design specifications, manufacturer's recommendations and other relevant information to define the acceptable parametric ranges more precisely. The owner/operator must develop and keep on-site a parameter monitoring plan which explains the procedures used to document proper operation of the NO_x emission controls. The plan must:</p> <ul style="list-style-type: none">(a) Include the indicators to be monitored and show there is a significant relationship to emissions and proper operation of the NO_x emission controls,(b) Pick ranges (or designated conditions) of the indicators, or describe the process by which such range (or designated condition) will be established,(c) Explain the process used to make certain that data obtained is representative of the emissions or parameters being monitored (such as detector location, installation specification if applicable),(d) Describe quality assurance and control practices that are adequate to ensure the continuing validity of the data,(e) Describe the frequency of monitoring and the data collection procedures that will be use (e.g., using a computerized data acquisition over a number of discrete data points with the average (or maximum value) being used for purposes of determining whether an exceedance has occurred), and(f) Submit justification for the proposed elements of the monitoring. If a proposed performance specification differs from manufacturer recommendation, the reasons for the differences must be explained. The data supporting the justification must be submitted, but references to generally available sources of information may be used to support the justification. Engineering assessments and other data may be relied upon, provided factors are

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 10 of 24

(Permit Updated 07/13/16)

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Condition
	<p>demonstrated which assure compliance or explain why performance testing is unnecessary to establish indicator ranges. When establishing indicator ranges, the owner/operator may choose to simplify the process by treating the parameters as if they were correlated. Using this assumption, testing can be divided into two cases:</p> <ul style="list-style-type: none"> (i) All indicators are significant only on one end of range (e.g., for a thermal incinerator controlling volatile organic compounds (VOC) it is only important to insure a minimum temperature, not a maximum). In this case, the study may be conducted so that each parameter is at the significant limit of its range while emissions testing is being conducted. If the emissions tests show that the source is in compliance at the significant limit of each parameter, then as long as each parameter is within its limit, the source is presumed to be in compliance. (ii) Some or all indicators are significant on both ends of the range. In this case, the owner/operator may conduct the study so that each parameter that is significant at both ends of its range assumes its extreme values in all possible combinations of the extreme values (either single or double) of all of the other parameters. For example, if there were only two parameters, A and B, and A had a range of values while B had only a minimum value, the combinations would be A high with B minimum and A low with B minimum. If both A and B had a range, the combinations would be A high and B high, A low and B low, A high and B low, A low and B high. For the case of four parameters all having a range, there are 16 possible combinations. <p>Reports must be submitted as delineated in 40 CFR 60.4375. For each affected unit required to continuously monitor parameters or emissions, the owner/operator must submit reports of excess emissions and monitor downtime, in accordance with 40 CFR 60.7(c). Excess emission must be reported for all periods of unit operation, including start-up, shutdown, and malfunction.</p> <p>For the purpose of reports required under 40 CFR 60.7(c), periods of excess emissions and monitor downtime that must be reported, as defined in 40 CFR 60.4380, are as follows:</p> <ol style="list-style-type: none"> 1. An excess emission is any unit operating hour for which the 4-hour rolling average steam or water to fuel ratio, as measured by the continuous monitoring system, falls below the acceptable steam or water to fuel ratio needed to demonstrate compliance with 40 CFR 60.4320, as established during the performance test required in 40 CFR 60.8. Any unit operating hour in which no water or steam is injected into the turbine when a fuel is being burned that requires water or steam injection for NO_x control will also be considered an excess emission. 2. A period of monitor downtime is any unit operating hour in which water or steam is injected into the turbine, but the essential parametric data needed to determine the steam or water to fuel ratio are unavailable or invalid. 3. Each report must include the average steam or water to fuel ratio, average fuel consumption, and the combustion turbine load during each excess emission. <p>Per 40 CFR 60.4395, all reports required under 40 CFR 60.7(c) must be postmarked by the 30th day following the end of each 6-month period.</p>
C.14	<p>Emission Unit ID: 10, 11</p> <p>Equipment/Control Device ID: CT7C, CT8C</p> <p>In accordance with 40 CFR 60 Subpart KKKK, Standards of Performance for Stationary Gas Turbines, Section 60.4330, on and after the date on which the performance test required to be conducted by 40 CFR 60.8 is completed, every owner or operator subject to the provision of this subpart shall comply with one of the following:</p> <ol style="list-style-type: none"> a. No owner or operator subject to the provisions of Subpart KKKK shall cause to be discharged into the atmosphere from the subject stationary combustion turbine any gases which contain sulfur dioxide in excess

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 11 of 24

(Permit Updated 07/13/16)

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Condition
	<p>of 110 nanograms per Joule (0.90 pounds per megawatt-hour) gross output.</p> <p>b. No owner or operator subject to the provisions of Subpart KKKK shall burn in the subject stationary gas turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO₂/J (0.060 lb SO₂/Million Btu) heat input. If the subject stationary gas turbine simultaneously fires multiple fuels, each fuel must be this requirement.</p> <p>These sources have completed initial performance tests as required by 40 CFR 60 Subpart KKKK. In the event of any changes to the process that may increase emissions, the Bureau may request a source test to determine status and any appropriate actions if not in compliance.</p> <p>As specified by 40 CFR 60.4333, the owner/operator shall operate and maintain the stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.</p> <p>In accordance with 40 CFR 60.4360, the total sulfur content of the fuel being fired in the turbine must be monitored, except as provided in 40 CFR 60.4365. The sulfur content of the fuel must be determined using total sulfur methods described in 40 CFR 60.4415. Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than half the applicable limit, ASTM D4084, D4810, D5504, or D6228, or Gas Processors Association Standard 2377 (all of which are incorporated by reference, see 40 CFR 60.17), which measure the major sulfur compounds, may be used.</p> <p>Per 40 CFR 60.4365, the owner/operator may elect not to monitor the total sulfur content of the fuel combusted in the turbine, if the fuel is demonstrated not to exceed potential sulfur emissions of 0.060 lb SO₂/Million Btu heat input. One of the following sources of information must be used to make the required demonstration:</p> <p>a. The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying that the maximum total sulfur content for oil use is 0.05 weight percent (500 ppmw) or less, the total sulfur content for natural gas use is 20 grains of sulfur or less per 100 standard cubic feet, has potential sulfur emissions of less than 0.060 lb SO₂/Million Btu heat input; or</p> <p>b. Representative fuel sampling data which show that the sulfur content of the fuel does not exceed 0.060 lb SO₂/Million Btu heat input. At a minimum, the amount of fuel sampling data specified in Section 2.3.1.4 or 2.3.2.4 of 40 CFR 75 Appendix D is required.</p> <p>The frequency of determining the sulfur content in the fuel must be performed in accordance with 40 CFR 60.4370.</p> <p>Reports must be submitted as delineated in 40 CFR 60.4375. For each affected unit required to continuously monitor parameters or emissions, or to periodically determine the fuel sulfur content under Subpart KKKK, the owner/operator must submit reports of excess emissions and monitor downtime, in accordance with 40 CFR 60.7(c). Excess emission must be reported for all periods of unit operation, including start-up, shutdown, and malfunction.</p> <p>For the purpose of reports required under 40 CFR 60.7(c), if the owner/operator chooses to monitor the sulfur content of the fuel, periods of excess emissions and monitor downtime that must be reported, as defined in 40 CFR 60.4385, are as follows:</p> <p>1. For samples of gaseous fuel and for oil samples obtained using daily sampling, flow proportional sampling, or sampling from the unit's storage tank, an excess emission occurs each unit operating hour included in the period beginning on the date and hour of any sample for which the sulfur content of the fuel being fired in the combustion turbine exceeds the applicable limit and ending on the date and hour that a subsequent sample is</p>

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 12 of 24

(Permit Updated 07/13/16)

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Condition																									
	<p>taken that demonstrates compliance with the sulfur limit.</p> <ol style="list-style-type: none"> 2. If the option to sample each delivery of fuel oil has been selected, the owner/operator must immediately switch to one of the other oil sampling options (i.e., daily sampling, flow proportional sampling, or sampling from the unit's storage tank) if the sulfur content of a delivery exceeds 0.05 weight percent. The owner/operator must continue to use one of the other sampling options until all of the oil from the delivery has been combusted, and the owner/operator must evaluate excess emissions according to of 40 CFR 60.4385(a). When all of the fuel from the delivery has been burned, the owner/operator may resume using the as-delivered sampling option. 3. A period of monitor downtime begins when a required sample is not taken by its due date. A period of monitor downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime ends on the date and hour of the next valid sample. <p>Per 40 CFR 60.4395, all reports required under 40 CFR 60.7(c) must be postmarked by the 30th day following the end of each 6-month period.</p>																									
C.15	<p>Emission Unit ID: 10, 11</p> <p>Equipment/Control Device ID: CT7C/7C(WI), CT8C/8C(WI)</p> <p>The turbines are subject to S.C. Regulation 61-62.63, 40 CFR 63, Subpart A - General Provisions, and 40 CFR 63, Subpart YYYY- Stationary Combustion Turbines and shall comply with all applicable provisions. The turbines are limited to 1,000 hours per calendar year, combined, when burning distillate fuel oil and therefore meets the definition of diffusion flame gas-fired combustion turbines as stated in 40 CFR 63, Subpart YYYY. Semiannual reports of operating hours when burning distillate fuel oil, for each turbine shall be submitted.</p>																									
C.16	<p>Emission Unit ID: 10, 11</p> <p>Equipment/Control Device ID: CT7C/7C(WI), CT8C/8C(WI)</p> <p>These sources are subject to 40 CFR 64, Compliance Assurance Monitoring and shall comply with all applicable provisions.</p> <p>To meet the requirements of 40 CFR 64, the indicator for NO_x will be Water-to-Fuel Ratio. The owner/operator shall continue to operate and maintain water flow meters and fuel oil flow meters in the turbine supply lines as the measurement approach. Water-to-fuel ratio shall be used to provide assurance of compliance with the NO_x emission limits of 25 ppm when burning natural gas and 42 ppm when burning distillate fuel oil as an established limit for SC Regulation 61-62.5, Standard 5.2. This condition does not apply during periods of startup, shutdown, malfunction or the alternate operating scenario (AOS).</p> <p>The following table presents operational data for the minimum water-to-fuel ratios between any two fuel demands at typical load conditions. The turbines shall not operate below the minimum loads except during periods of startup, shutdown, AOS, and malfunction.</p> <table border="1"> <thead> <tr> <th align="center">Unit ID</th> <th align="center" colspan="2">10</th> <th align="center" colspan="2">11</th> </tr> <tr> <th align="center">Fuel</th> <th align="center">Oil</th> <th align="center">Gas</th> <th align="center">Oil</th> <th align="center">Gas</th> </tr> </thead> <tbody> <tr> <td align="center">Date of last tuning/test (day/month/year)</td> <td align="center">7/30/2015</td> <td align="center">7/29/2015</td> <td align="center">12/10/2015</td> <td align="center">12/9/2015</td> </tr> <tr> <td align="center">Fuel Demand (FD) Range (lb/hr)</td> <td align="center">Water-to-Fuel Ratio¹</td> <td align="center">Water-to-Fuel Ratio¹</td> <td align="center">Water-to-Fuel Ratio¹</td> <td align="center">Water-to-Fuel Ratio¹</td> </tr> <tr> <td align="center">0 4000</td> <td align="center">0.00*</td> <td align="center">0.00*</td> <td align="center">0.00*</td> <td align="center">0.00*</td> </tr> </tbody> </table>	Unit ID	10		11		Fuel	Oil	Gas	Oil	Gas	Date of last tuning/test (day/month/year)	7/30/2015	7/29/2015	12/10/2015	12/9/2015	Fuel Demand (FD) Range (lb/hr)	Water-to-Fuel Ratio ¹	Water-to-Fuel Ratio ¹	Water-to-Fuel Ratio ¹	Water-to-Fuel Ratio ¹	0 4000	0.00*	0.00*	0.00*	0.00*
Unit ID	10		11																							
Fuel	Oil	Gas	Oil	Gas																						
Date of last tuning/test (day/month/year)	7/30/2015	7/29/2015	12/10/2015	12/9/2015																						
Fuel Demand (FD) Range (lb/hr)	Water-to-Fuel Ratio ¹	Water-to-Fuel Ratio ¹	Water-to-Fuel Ratio ¹	Water-to-Fuel Ratio ¹																						
0 4000	0.00*	0.00*	0.00*	0.00*																						

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 13 of 24

(Permit Updated 07/13/16)

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Condition					
	4000	6363	0.37-0.47	0.26-0.46	0.37-0.66	0.34-0.47
	6363	8100	0.47-0.53	0.46-0.51	0.66-0.77	0.47-0.51
	8100	9800	0.53-0.64	0.51-0.56	0.77-0.86	0.51-0.51
	9800	11200	0.64-0.68	0.56-0.60	0.86-0.90	0.51-0.62
	11200	12613	0.68-0.75	0.60-0.60	0.90-0.92	0.60-0.62
	12613	14150	0.75-0.75	0.60-0.60	0.92-0.94	0.60-0.62
	14150	15700	0.75-0.82	0.60-0.61	0.94-0.94	0.62-0.65
	15700	18800	0.82-0.73	0.61-0.55	0.94-0.99	0.65-0.67
	18800	21900	0.73-0.65	0.55-0.52	0.99-0.89	0.67-0.63
	21900	25000	0.65-0.64	0.52-0.56	0.89-0.92	0.63-0.58

¹ Values are rounded to the nearest hundredth significant digit.

*Water injection is not required below 25% load (12 MW)

These operational ranges for the monitored parameters were derived from unit test data which demonstrate a reasonable assurance of compliance. If there are changes in the operational ranges during subsequent unit testing, the operational ranges shall be updated within 180 days of the test by submission of a minor modification to this permit. Procedures for a minor permit modification are outlined in S.C. Regulation 61-62.70.7(e)(2).

An excursion shall be defined as any one-hour period where the water-to-fuel ratio is less than those listed for any given fuel demand range which would be outside of the approved ranges. Upon detecting an excursion, the owner or operator shall take corrective action to restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable, in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the duration of any startup, shutdown or malfunction period, and taking necessary corrective action to restore normal operation and prevent the likely recurrence of the cause of an excursion (other than those caused by excused startup and shutdown conditions). If the ratio remains below the accepted level for a total of 16 consecutive hours, a Method 20 test shall be performed to validate compliance.

Indicator readings shall be recorded continuously and reduced to clock hour averages.

QA/QC practices shall be in accordance with the facilities quality assurance plan required by 40 CFR 75 Appendix D.

A semiannual report for monitoring under 40 CFR 64.9 shall include, at a minimum, the information required under SC Regulation 61-62.70.6(a)(3)(iii) and the following information as applicable:

1. Summary information of the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;
2. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero span or other daily calibration checks, if applicable);
3. If applicable, a description of the actions taken to implement a Quality Improvement Plan (QIP) during the reporting period as specified in 40 CFR 64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions occurring.

The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions and quality improvement plans.

C.17	<p>Emission Unit ID: 12</p> <p>Equipment ID: AuxB</p>
------	---

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 14 of 24

(Permit Updated 07/13/16)

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Condition
	<p>In accordance with S.C. Regulation 61-62.5, Standard No. 1 - Emissions from Fuel Burning Operations, Section I – Visible Emissions, any fuel combustion source constructed on or after February 11, 1971 shall not discharge into the ambient air smoke which exceeds an opacity of twenty (20) percent. The twenty (20) percent opacity limit may be exceeded for sootblowing, but may not be exceeded for more than six (6) minutes in a one hour period nor be exceeded for more than a total of twenty-four (24) minutes in a twenty-four (24) hour period. Emissions caused by sootblowing shall not exceed sixty (60) percent opacity.</p> <p>The opacity standards set forth above do not apply during startup or shutdown. The owner/operator shall, to the extent practicable, maintain and operate any source in a manner consistent with good air pollution control practices for minimizing emissions.</p> <p>This source is permitted to burn only natural gas as fuel. The use of any other substances as fuel is prohibited without prior written approval from the Department.</p>
C.18	<p>Emission Unit ID: 12</p> <p>Equipment ID: AuxB</p> <p>In accordance with S.C. Regulation 61-62.5, Standard No. 1 - Emissions from Fuel Burning Operations, Section II - Particulate Matter Emissions, the allowable discharge of particulate matter resulting from fuel burning operations is based on the input heat rate of each source. For sources operating below 1,300 Million BTU/hr heat input rate, the limit is 0.6 lb/Million BTU (3 hour block average). For sources operating equal to or above 1,300 MMBtu/hr heat input rate, the limit is expressed as a function of the input heat rate per the following equation:</p> $E = 57.84 P^{-0.637}$ <p>where E = the allowable emission rate in pounds per MMBtu heat input and P = MMBtu heat input per hour</p> <p>In accordance with SC Regulation 61-62.5, Standard No. 1 - Emissions from Fuel Burning Operations, Section III - Sulfur Dioxide Emissions, the maximum allowable discharge of SO₂ resulting from fuel burning source is 2.3 lb/MMBtu heat input (24 hour block average).</p> <p>This source is permitted to burn only natural gas as fuel. The use of any other substances as fuel is prohibited without prior written approval from the Department.</p>
C.19	<p>Emission Unit ID/Equipment ID: 03/U3</p> <p>This facility is subject to S.C. Regulation 61-62.72, 40 CFR 72, 73, 74, 75, and 76 and the limits specified in Attachment – Title IV – Acid Rain Program. The owner/operator shall comply with the monitoring and reporting requirements as provided in 40 CFR Parts 74, 75, and 76.</p>
C.20	<p>Emission Unit ID/Equipment ID: 10/CT7C, 11/CT8C</p> <p>This facility is subject to S.C. Regulation 61-62.72, 40 CFR 72, 73, 74, 75, and 76 and the limits specified in Attachment – Title IV – Acid Rain Program. The owner/operator shall comply with the monitoring and reporting requirements as provided in 40 CFR Parts 74, 75, and 76. The facility has requested that the turbine units be established as Peaking sources with each turbine expected to operate below 10% annual capacity factor averaged over any 3-year period and not exceeding 20% in any single year. Should the 20% capacity factor for either turbine unit be exceeded, the facility shall comply with acid rain requirements for installing CEMS. The 10% capacity factor for each turbine unit refers to the ratio of a turbine’s annual heat input (in million Btu or equivalent units of measure) to a turbine’s maximum rated</p>

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 15 of 24

(Permit Updated 07/13/16)

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Condition
	hourly heat input rate (in million Btu per hour or equivalent units of measure) times 8,760 hours.
C.21	<p>Emission Unit ID/Equipment ID: 03/U3, 10/CT7C, 11/CT8C</p> <p>This facility is subject to SC Regulation 61-62.96 Nitrogen Oxides (NO_x) and Sulfur Dioxide (SO₂) Budget Trading Program and the federal rule entitled 40 CFR 96 NO_x Budget Trading Program And CAIR NO_x And SO₂ Trading Programs For State Implementation Plans and shall comply with all applicable requirements. The owner/operator shall comply with the monitoring and reporting requirements as provided in 40 CFR Part 96.</p>
C.22	<p>Emission Unit ID/Equipment ID: 03/U3, 10/CT7C, 11/CT8C</p> <p>The facility is subject to the federal rule entitled 40 CFR 97 Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals, also known as the "Transport Rule," "TR," the "Cross State Air Pollution Rule," and "CSAPR." Existing affected units shall comply with the applicable provisions by the compliance dates specified in each Subpart. Any new affected units shall comply with the requirements of these Subparts upon initial start-up, unless otherwise noted.</p>
C.23	<p>Emission Unit ID/Equipment ID: 03/U3, 12/AuxB</p> <p>In accordance with SC Regulation 61-62.5, Standard No. 7 – Prevention of Significant Deterioration (PSD) and based on BACT analysis, Boiler 3 (equipment ID U3) and auxiliary boiler (equipment ID AuxB) are only permitted to burn natural gas as fuel. The use of any other substances as fuel is prohibited without prior approval from the Department.</p>

D. PERMIT FLEXIBILITY

Condition Number	Conditions
D.1	The facility may install, remove, and modify insignificant activities as defined in S.C. Regulation 61-62.70.5.c and exempt sources as listed in S.C. Regulation 61-62.1, Section II.B, without revising or reopening the Title V Operating Permit. A list of insignificant activities/exempt sources must be maintained on site, along with any necessary documentation to support the determination that the activity is insignificant and/or exempt, and shall be made available to a Department representative upon request. The list shall be submitted with the next renewal application.
D.2	<p>Emergency power generators less than or equal to 150 kilowatt (kW) rated capacity or greater than 150 kW rated capacity designated for emergency use only and operated a total of 500 hours per year or less for testing and maintenance with a method to record the actual hours of use such as an hour meter have been determined to be exempt from construction permitting requirements in accordance with South Carolina Regulation 61-62.1. These sources shall still comply with the requirements of all applicable regulations including but not limited to the following:</p> <p>New Source Performance Standards (NSPS) 40 CFR 60 Subpart A (General Provisions); NSPS 40 CFR 60 Subpart IIII (Stationary Compression Ignition Internal Combustion Engines); NSPS 40 CFR 60 Subpart JJJJ (Stationary Spark Ignition Internal Combustion Engines); National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 63 Subpart A (General Provisions); and NESHAP 40 CFR 63 Subpart ZZZZ (Stationary Reciprocating Internal Combustion Engines).</p>
D.3	<p>Emission Unit ID: 10, 11</p> <p>Equipment/Control Device ID: CT7C/7C(WI), CT8C/8C(WI)</p> <p>Emission limits specified in this permit, for the combustion turbines, may be exceeded during periods of startup and shutdown provided that optimal operational practices are adhered to and periods of these excess emissions are minimized. Startup for dispatch purposes will normally follow an automated sequence to achieve stable operation at a load greater than 25% of rated output. However, in the event of the need for online diagnosis and maintenance of</p>

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 16 of 24

(Permit Updated 07/13/16)

D. PERMIT FLEXIBILITY

Condition Number	Conditions
	problems encountered during startup, the turbine may be held for brief periods (up to 2.5 hours) to correct the problem without the need for a shutdown and subsequent restart of the turbine. Deviations from the automated startup sequence will be recorded in the operational log with an explanation of the problem and corrective actions taken to complete the startup. Except for operating at low loads as described in Condition C.11, for Oconee Nuclear Station backup testing and maintenance, tertiary safe emergency shutdown, and blackout recovery, these turbines shall not be operated in a "pause mode" for electric dispatch at loads less than 25%. "Pause mode" for this permit is defined as a holding period during which a turbine is brought on line and operated at a lower level of output (less than 25%) for the purpose of managing system wide electrical load or in anticipation of a later need to escalate to full output. Startup for dispatch purposes is defined as the period from zero load (unfired) to 25% load and shutdown from dispatch is defined as 25% load to flame out. The operational logs containing any startup deviations shall be maintained for a period of five (5) years and made available to Department representatives upon request.

E. AMBIENT AIR STANDARDS REQUIREMENTS

Condition Number	Condition
E.1	<p>Air dispersion modeling (or other method) has demonstrated that this facility's operation will not interfere with the attainment and maintenance of any state or federal ambient air standard. Any changes in the parameters used in this demonstration may require a review by the facility to determine continuing compliance with these standards. These potential changes include any decrease in stack height, decrease in stack velocity, increase in stack diameter, decrease in stack exit temperature, increase in building height or building additions, increase in emission rates, decrease in distance between stack and property line, changes in vertical stack orientation, and installation of a rain cap that impedes vertical flow. Parameters that are not required in the determination will not invalidate the demonstration if they are modified. The emission rates used in the determination are listed in Attachment - Emission Rates for Ambient Air Standards of this permit. Higher emission rates may be administratively incorporated into Attachment - Emission Rates for Ambient Air Standards of this permit provided a demonstration using these higher emission rates shows the attainment and maintenance of any state or federal ambient air quality standard or with any other applicable requirement. Variations from the input parameters in the demonstration shall not constitute a violation unless the maximum allowable ambient concentrations identified in the standard are exceeded.</p> <p>The owner/operator shall maintain this facility at or below the emission rates as listed in Attachment - Emission Rates for Ambient Air Standards, not to exceed the pollutant limitations of this permit. Should the facility wish to increase the emission rates listed in Attachment - Emission Rates for Ambient Air Standards, not to exceed the pollutant limitations in the body of this permit, it may do so by the administrative process specified above. This is a State Only enforceable requirement.</p>

F. NESHAP PERIODIC REPORTING SCHEDULE SUMMARY

NESHAP Part	NESHAP Subpart	Compliance Monitoring Report Submittal Frequency	Reporting Period	Report Due Date
63	YYYY	N/A	N/A	N/A
63	ZZZZ	N/A	N/A	N/A

- This table summarizes only the periodic compliance reporting schedule. Additional reports may be required. See specific NESHAP Subpart for additional reporting requirements and associated schedule.
- This reporting schedule does not supersede any other reporting requirements including but not limited to 40 CFR Part 60, 40 CFR Part 61, 40 CFR Part 63, and/or Title V. The MACT reporting schedule may be adjusted to coincide with the Title V reporting schedule with prior approval from the Department in accordance with 40 CFR Part 63.10.a.5. This request may be made 1 year after the compliance date for the associated MACT standard.

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 17 of 24

(Permit Updated 07/13/16)

N/A = Not Applicable

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 18 of 24

(Permit Updated 07/13/16)

G. NESHAP - CONDITIONS

Condition Number	Condition
G.1	All NESHAP notifications and reports shall be sent to the Manager of the Air Toxics Section, South Carolina Department of Health and Environmental Control - Bureau of Air Quality.
G.2	All NESHAP notifications and the cover letter to periodic reports shall be sent to the United States Environmental Protection Agency (US EPA) at the following address: <p align="center">US EPA, Region 4 Air, Pesticides and Toxics Management Division 61 Forsyth Street SW Atlanta, GA 30303</p>
G.3	This facility is subject to the provisions of S.C. Regulation 61-62.63 and 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants, Subparts A and YYYY, NESHAP for Stationary Combustion Turbines. The existing affected sources (Unit 10 and Unit 11 turbines) shall comply with the applicable provisions by the compliance date specified in Subpart YYYY. The existing turbines meet the definition of diffusion flame gas-fired combustion turbines; therefore in accordance with 40 CFR 63.6095(d), the facility must comply with the initial notification requirements set forth in 40 CFR 63.6145 but need not comply with any other requirement of this subpart until EPA takes final action to require compliance and publishes a documents in the Federal Register.
G.4	Affected sources: All Stationary IC Engines: This facility is subject to the provisions of S.C. Regulation 61-62.63 and 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants, Subparts A and ZZZZ, NESHAP for Stationary Reciprocating Internal Combustion Engines. Existing affected sources shall comply with the applicable provisions by the compliance date specified in Subpart ZZZZ. Any new affected sources shall comply with the requirements of these Subparts upon initial start-up unless otherwise noted.

H. TITLE V PERIODIC REPORTING SCHEDULE

Compliance Monitoring Report Submittal Frequency	Reporting Period (Begins on the effective date of the permit)	Report Due Date
Quarterly	January-March April-June July-September October-December	April 30 th July 30 th October 30 th January 30 th
Semiannual	January-June April-September July-December October-March	July 30 th October 30 th January 30 th April 30 th

Note: This reporting schedule does not supersede any Federal reporting requirements including but not limited to 40 CFR Part 60, 40 CFR Part 61, and 40 CFR Part 63. All Federal reports must meet the reporting time frames specified in the Federal standard unless the Department or EPA approves a change.

I. TITLE V COMPLIANCE CERTIFICATION REPORTING SCHEDULE

Title V Compliance Certification Submittal Frequency	Reporting Period (Begins on the effective date of the permit)	Report Due Date
Annual	January-December April-March July-June October-September	February 14 th May 15 th August 14 th November 14 th

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 19 of 24

(Permit Updated 07/13/16)

J. TITLE V RECORD KEEPING AND REPORTING REQUIREMENTS

Condition Number	Condition
J.1	Reporting required in this permit, shall be submitted in a timely manner as directed in the Title V Periodic Reporting Schedule and the Title V Compliance Certification Reporting Schedule of this permit. All required reports must be certified by a responsible official consistent with S.C. Regulation 61-62.70.5.d.
J.2	All reports and notifications required under this permit shall be submitted to the person indicated in the specific condition at the following address: 2600 Bull Street Columbia, SC 29201 The contact information for the local EQC Regional office can be found at: http://www.scdhec.gov
J.3	Unless elsewhere specified within this permit, all reports required under this permit shall be submitted to the Manager of the Technical Management Section, Bureau of Air Quality.
J.4	All Title V Annual Compliance Certifications shall be sent to the US EPA, Region 4, Air Enforcement Branch and to the Manager of the Technical Management Section, Bureau of Air Quality. US EPA, Region 4 Air Enforcement Branch 61 Forsyth Street SW Atlanta, GA 30303
J.5	(S.C. Regulation 61-62.70.6.a.3.ii) The owner or operator shall comply, where applicable, with the following monitoring/support information collection and retention record keeping requirements: 1. Records of required monitoring information shall include the following: a. The date, place as defined in the permit, and time of sampling or measurements; b. The date(s) analyses were performed; c. The company or entity that performed the analyses; d. The analytical techniques or methods used; e. The results of such analyses; and f. The operating conditions as existing at the time of sampling or measurement; 2. Records of all required monitoring data and support information shall be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 20 of 24

(Permit Updated 07/13/16)

J. TITLE V RECORD KEEPING AND REPORTING REQUIREMENTS

Condition Number	Condition
J.6	<p>In accordance with S.C. Regulation 61-62.1, Section II.J, for sources not required to have continuous emissions monitors, any malfunction of air pollution control equipment or system, process upset or other equipment failure which results in discharges of air contaminants lasting for one hour or more and which are greater than those discharges described for normal operation in the permit application shall be reported to the Department's local Environmental Quality Control (EQC) Regional office within twenty-four (24) hours after the beginning of the occurrence.</p> <p>The owner or operator shall also submit a written report within thirty (30) days of the occurrence. This report shall be submitted to the Manager of the Technical Management Section, Bureau of Air Quality (BAQ) and shall include, at a minimum, the following:</p> <ol style="list-style-type: none"> 1. The identity of the stack and/or emission point where the excess emissions occurred; 2. The magnitude of excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the excess emissions; 3. The time and duration of excess emissions; 4. The identity of the equipment causing the excess emissions; 5. The nature and cause of such excess emissions; 6. The steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunction; 7. The steps taken to limit the excess emissions; and, 8. Documentation that the air pollution control equipment, process equipment, or processes were at all times maintained and operated, to the maximum extent practicable, in a manner consistent with good practice for minimizing emissions.
J.7	<p>(S.C. Regulation 61-62.70.6.c.5.iii) The responsible official shall certify, annually, compliance with the conditions of this permit as required under S.C. Regulation 61-62.70.6.c. The compliance certification shall include the following:</p> <ol style="list-style-type: none"> 1. The identification of each term or condition of the permit that is the basis of the certification. 2. The identification of the method(s) or means used by the owner or operator for determining the compliance status with each term and condition of the permit during the certification period. 3. The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated in S.C. Regulation 61-62.70.6.c.5.iii.B. The certification shall identify each deviation and take it into account in the compliance certification. 4. Such other facts as the Department may require to determine the compliance status of the source.
J.8	<p>(S.C. Regulation 61-62.1, Section II.M) Within 30 days of the transfer of ownership/operation of a facility, the current permit holder and prospective new owner or operator shall submit to the Director of Engineering Services a written request for transfer of the source operating or construction permits. The written request for transfer of the source operating or construction permit shall include any changes pertaining to the facility name and mailing address; the name, mailing address, and telephone number of the owner or operator for the facility; and any proposed changes to the permitted activities of the source. Transfer of the operating or construction permits will be effective upon written approval by the Department.</p>

K. COMPLIANCE SCHEDULE

Condition Number	Conditions
K.1	N/A

N/A = Not Applicable

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 21 of 24

(Permit Updated 07/13/16)

L. PERMIT SHIELD

Condition Number	Condition	
L.1	No Shield Requested.	
	<p>(S.C. Regulation 61-62.70.6.f) A copy of the "applicability determination" submitted with the Part 70 permit application is included as Attachment – Applicable and Non-Applicable Federal and State Regulations. With the exception of those listed below, compliance with the terms and conditions of this permit shall be deemed compliance with the applicable requirements specified in Attachment – Applicable and Non-Applicable Federal and State Regulations as of the date of permit issuance provided that such applicable requirements are included and are specifically identified in the permit. Exceptions to this are stated below in the <i>Permit Shield Exceptions</i> Table. The owner or operator shall also be shielded from the non-applicable requirements specified in Attachment – Applicable and Non-Applicable Federal and State Regulations. Exceptions to this are stated below in the <i>Permit Shield Exceptions</i> Table.</p>	
	Permit Shield Exceptions	
	SC Reg. 61-62.1, Definitions and General Requirements	
	SC Reg. 61-62.5, Std. 2, Ambient Air Quality Standards	
	SC Reg. 61-62.5, Std. 3, Waste Combustion and Reduction	
	SC Reg. 61-62.5, Std. 4, Emissions from Process Industries	
	SC Reg. 61.62.5, Std. 5.1, Best Available Control Technology (BACT)/Lowest Achievable Emission Rate ("LAER")	
	Applicable to Volatile Organic Compounds	
	SC Reg. 61-62.5, Std. 7, Prevention of Significant Deterioration	
	SC Reg. 61-62.5, Std. 7.1, Nonattainment New Source Review (NSR)	
	SC Reg. 61-62.5, Std. 8, Toxic Air Pollutants	
	SC Reg. 61-62.6, Control of Fugitive Particulate Matter	
	SC Reg. 61-62.60 – South Carolina Designated Facility Plan and New Source Performance Standards	
	SC Reg. 61-86.1 – Standards of Performance for Asbestos Projects	
	40 CFR 51, Requirements for Preparation, Adoption, and Submittal of Implementation Plans	
	40 CFR 52, Approval and Promulgation of Implementation Plans	
	40 CFR 53, Ambient Air Monitoring Reference and Equivalent Methods	
	40 CFR 61 Subpart M, National Emission Standard for Asbestos	
	SC Reg. 61-62.63 – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories	
	40, CFR 63, Subpart A, National Emission Standards For Hazardous Air Pollutants for Affected Source Categories: General Provisions	
	40 CFR 63, Subpart DDDD, National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products	
	40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines	
	40 CFR 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters	
	40 CFR 64 – Compliance Assurance Monitoring	
	<p>Nothing in the permit shield or in any Part 70 permit shall alter or affect the provisions of Section 303 of the Act, Emergency Orders, of the Clean Air Act; the liability of the owner or operator for any violation of applicable requirements prior to or at the time of permit issuance; the applicable requirements of the Acid Rain Program, consistent with Section 408.a of the Clean Air Act; or the ability of US EPA to obtain information from a source pursuant to Section 114 of the Clean Air Act. In addition, the permit shield shall not apply to emission units in noncompliance at the time of permit issuance, minor permit modifications (S.C. Regulation 61-62.70.7.e.2), group processing of minor permit modifications (S.C. Regulation 61-62.70.7.e.3), or operational flexibility (S.C. Regulation</p>	

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 22 of 24

(Permit Updated 07/13/16)

L. PERMIT SHIELD

Condition Number	Condition
	61-62.70.7.e.5.i), except as specified in S.C. Regulation 61-62.70.7.e.5.iii.

M. GENERAL FACILITY WIDE

Condition Number	Condition
M.1	The owner or operator shall comply with S.C. Regulation 61-62.2 "Prohibition of Open Burning."
M.2	The owner or operator shall comply with S.C. Regulation 61-62.3 "Air Pollution Episodes."
M.3	The owner or operator shall comply with S.C. Regulation 61-62.4 "Hazardous Air Pollution Conditions."
M.4	The owner or operator shall comply with S.C. Regulation 61-62.6 "Control of Fugitive Particulate Matter", Section III "Control of Fugitive Particulate Matter Statewide."
M.5	The owner or operator shall comply with the standards of performance for asbestos abatement operations pursuant to 40 CFR Part 61.145, including, but not limited to, requirements governing training, licensing, notification, work practice, cleanup, and disposal.
M.6	The owner or operator shall comply with the standards of performance for asbestos abatement operations pursuant to S.C. Regulation 61-86.1, including, but not limited to, requirements governing training, licensing, notification, work practice, cleanup, and disposal.
M.7	The owner or operator shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, Protection of Stratospheric Ozone, Recycling and Emissions Reduction, except as provided for motor vehicle air conditioners (MVACs) in Subpart B. If the owner or operator performs a service on motor (fleet) vehicles that involves ozone-depleting substance refrigerant in MVACs, the owner or operator is subject to all applicable requirements of 40 CFR Part 82, Subpart B, Servicing of MVACs.
M.8	(S.C. Regulation 61-62.70.6.a.5) The provisions of this permit are severable, and if any provision of this permit, or application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.
M.9	(S.C. Regulation 61-62.70.6.a.6.i) The owner or operator must comply with all of the conditions of this permit. Any permit noncompliance constitutes a violation of the S.C. Pollution Control Act and/or the Federal Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of permit renewal application.
M.10	(S.C. Regulation 61-62.70.6.a.6.ii) It shall not be a defense for an owner or operator in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
M.11	(S.C. Regulation 61-62.70.6.a.6.iii) The permit may be modified, revoked, reopened and reissued, or terminated for cause by the Department. The filing of a request by the owner or operator for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
M.12	(S.C. Regulation 61-62.70.6.a.6.iv) The permit does not convey any property rights of any sort, or any exclusive privilege.
M.13	(S.C. Regulation 61-62.70.6.a.6.v) The owner or operator shall furnish to the Department, within a reasonable time, any information that the Department may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the owner or operator shall also furnish to the Department copies of records required to be kept by the permit or, for information claimed to be confidential, the owner or operator may furnish such records directly to the Administrator along with a claim of confidentiality. The Department may also request that the owner or operator furnish such records directly to the Administrator along with a claim of confidentiality.
M.14	(S.C. Regulation 61-62.70.6.a.8) No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit.

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 23 of 24

(Permit Updated 07/13/16)

M. GENERAL FACILITY WIDE

Condition Number	Condition
M.15	<p>(S.C. Regulation 61-62.70.6.c.2) Upon presentation of credentials and other documents as may be required by law, the owner or operator shall allow the Department or an authorized representative to perform the following:</p> <ol style="list-style-type: none"> 1. Enter upon the owner or operator's premises where a Part 70 source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit. 2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. 3. Inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit. 4. As authorized by the Act and/or the S.C. Pollution Control Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.
M.16	<p>(S.C. Regulation 61-62.70.6.g) In the case of an emergency, as defined in S.C. Regulation 61-62.70.6.g.1, the owner or operator shall demonstrate an affirmative defense of emergency through properly signed, contemporaneous operating logs, or other relevant evidence that:</p> <ol style="list-style-type: none"> 1. An emergency occurred and that the owner or operator can identify the cause(s) of the emergency; 2. The permitted facility was at the time being properly operated; and 3. During the period of the emergency the owner or operator took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and 4. The owner or operator shall submit verbal notification of the emergency to the Department within twenty-four (24) hours of the time when emission limitations were exceeded, followed by written notifications within thirty (30) days. This notice fulfills the requirement of S.C. Regulation 61-62.70.6.a.3.iii.B. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. <p>This provision is in addition to any emergency or upset provision contained in any applicable requirement. In any enforcement proceeding, the owner or operator seeking to establish the occurrence of an emergency has the burden of proof.</p>
M.17	<p>(S.C. Regulation 61-62.70.6.a.1.ii) Where an applicable requirement of the Act is more stringent than an applicable requirement of regulations promulgated under Title IV of the Act, both provisions shall be incorporated into the permit and shall be enforceable by the Administrator.</p>
M.18	<p>(S.C. Regulation 61-62.70.6.a.4) According to S.C. Regulation 61-62.70.6.a.4, the owner or operator is prohibited from emissions exceeding any allowances that the source lawfully holds under Title IV of the Act or the regulations promulgated thereunder. No permit revision shall be required for increases in emissions that are authorized by allowances acquired pursuant to the acid rain program, provided that such increases do not require a permit revision under any other applicable requirement. No limit shall be placed on the number of allowances held by a source. The source may not, however, use allowances as a defense to noncompliance with any other applicable requirement. Any such allowances shall be accounted for according to the procedures established in regulations promulgated under Title IV of the Act.</p>
M.19	<p>(S.C. Regulation 61-62.70.7.c.1.ii) Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted consistent with S.C. Regulation 61-62.70.5.a.1.iii, 62.70.5.a.2.iv, and 62.70.7.b. In this case, the permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the permit including any permit shield that may be granted pursuant to S.C. Regulation 61-62.70.6.f shall remain in effect until the renewal permit has been issued or denied.</p>
M.20	<p>Requests for permit modification and amendments shall be submitted on the appropriate Department approved Title V Modification Form(s).</p>
M.21	<p>(S.C. Regulation 61-62.70.6.a.7) The owners or operators of Part 70 sources shall pay fees to the Department consistent with the fee schedule approved pursuant to S.C. Regulation 61-62.70.9. Failure to pay applicable fee can be considered grounds for permit revocation.</p>

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 24 of 24

(Permit Updated 07/13/16)

M.22	<p>(S.C. Regulation 61-62.1, Section III) The owners or operators of Part 70 sources shall complete and submit a new updated emissions inventory consistent with the schedule approved pursuant to S.C. Regulation 61-62.1, Section III. These Emissions Inventory Reports shall be submitted to the Manager of the Emissions Inventory Section, Bureau of Air Quality.</p> <p>This requirement notwithstanding, an emissions inventory may be required at any time in order to determine the compliance status of any facility.</p>
M.23	<p>This permit expressly incorporates insignificant activities. Emissions from these activities shall be included in the emissions inventory submittals as required by S.C. Regulation 61-62.1, Section III.B.2.g.</p>

ATTACHMENT - Emission Rates for Ambient Air Standards

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

Page 1 of 1

(Permit Updated 07/13/16)

The emission rates listed herein are not considered federally enforceable limitations but are used to evaluate ambient air quality impact. Until the Department makes a determination that a facility is causing or contributing to an exceedance of a state or federal ambient air quality standard, increases to these emission rates are not in themselves considered violations of these ambient air quality standards (see Ambient Air Standards Requirements).

AMBIENT AIR QUALITY STANDARDS - STANDARD NO. 2 - EMISSION RATES (LBS/HR)						
Emission Point ID	PM ₁₀ 24-hr	PM _{2.5} Annual	PM _{2.5} 24-hr	SO ₂ 3-hr	NO _x Annual	CO
EX AUXB	0.06	0.06	0.06	0.05	0.83	0.69
EX BOIL	16.78	10.07	16.78	12.62	201.60	85.46
TURB 7A	--	0.44	--	--	6.18	--
TURB 7B	5.40	0.29	5.40	23.02	3.92	156.43
TURB 8A	--	0.44	--	--	6.18	--
TURB 8B	5.40	0.29	5.40	23.02	3.92	156.43

Attachment - Applicable and Non-Applicable Federal and State Regulations

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

PAGE 1 OF 4

(Permit Updated 07/13/16)

The following contains the Federal and South Carolina air pollution regulations and their applicability, as specified in the Part 70 permit application.

Regulation Citation	Regulation Title	Applicable (Y/N)
SC Reg 62.1,Sec. IIA	State New Source Review (state only)	Y
SC Reg. 62.5, Stand. No. 2	Ambient Air Quality Standards	Y
SC Reg 62.5, Stand. No. 8	Toxic Air Pollutants (state only)	Y
SC Reg 62.4	Hazardous Air Pollution	Y
SC Reg 62.2	Open Burning	Y
SC Reg 62.6	Fugitive Emissions	Y
40 CFR Part 82, Subpart F	Ozone Depleting Substances	Y
40 CFR Part 61.145	Asbestos	Y
40 CFR 72	Acid Rain General Provisions	Y
40 CFR 73	Acid Rain Program: Permits and Allowance System	Y
40 CFR 75	Continuous Emission Monitoring system alternate monitoring - Acid Rain rules	Y
40 CFR 75 and App. D, E	Optional SO ₂ and NO _x Emissions Estimation Protocols for Gas and Oil-fired peaking units.	Y
40 CFR 76	NO _x Averaging Plan	Y
SC Reg 62.5 Stand. No. 1	Emissions Fuel Burning Operations	Y
SC Reg. 62.5 Stand. No. 7	SC Prevention of Significant Deterioration (CO)	Y
SC Reg. 62.5, Std. No. 4	Emissions from Process Industries- opacity	Y
40 CFR 60 Subparts A and Subpart KKKK	NSPS for New Stationary Gas Turbines and General Conditions	Y
SC Reg 62.5, Stand. 5.2	Control of Oxides of Nitrogen (turbines)	Y
40 CFR 63 Subpart YYYY	NESHAP for Stationary Turbines	Y
SC Reg 62.1 Sec. II(H)	Turbines PSD synthetic minor limitations	Y
SC Reg 62.5 Stand. No. 3 (Sec.III(J), IX; Sec. I(J)(2))	SC Air Toxics Emission Limitations when burning virgin fuels and only specification used oil ; source test requirements.	Y
40 CFR 75 (CAIR interim),Subpart H	Clean Air Interstate Rule (interim)-NO _x Budget Trading Program	Y
SC 62.96 (Subpart H)	SC NO _x Budget Trading Program ,Clean Air Interstate Rule (interim)	Y
SC 62.70	SC Title V air permit program	Y
SC Reg 62.1 (Sec. IV)	Source Tests	Y
40 CFR 64	Compliance Assurance Monitoring (PM, NO _x /water-to fuel ratios)	Y
40 CFR 63 Subpart s A, DDDD	Initial notification requirement for small liquid (n. gas) boiler.	Y
40 CFR 63 Subparts A, ZZZZ	NESHAP RICE MACT –Initial notification for emergency engines	Y
40 CFR Part 70	Title V Air Permit Program	Y

Attachment - Applicable and Non-Applicable Federal and State Regulations

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

PAGE 2 OF 4

(Permit Updated 07/13/16)

Regulation Citation	Regulation Title	Applicable (Y/N)
40 CFR 60 Subpart D	Fossil Fuel Fired Steam Generators	N
40 CFR 60 Subpart Da	Standard of Performance for Electric Utility Steam Generating Units	N
40 CFR 60.40 Subpart Db starting at 60.40b	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units	N
40 CFR 60 Subpart Dc starting at 60.40c	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	N
40 CFR 60 Subpart E	NSPS: Incinerators	N
40 CFR 60 Subpart J	NSPS: Petroleum refineries	N
40 CFR 60 Subpart K	Storage Vessel for petroleum liquids	N
40 CFR 60 Subpart Ka	Storage vessels for petroleum liquids	N
40 CFR 60 Subpart K	Storage Vessel for petroleum liquids	N
40 CFR 51.166 and 52.21	NAAQS: Prevention of Significant Deterioration	N
40 CFR 51	New test methods for measuring visible emissions	N
40 CFR Parts 51 and 52, 52.24, 52.10	NAAQS: Nonattainment Program	N
40 CFR 51 & 53	Conformity regulations to ensure that transportation plans meet SIP requirements.	N
40 CFR 60 Subpart Y	NSPS: Coal preparation plants	N
40 CFR 60 Subpart XX	NSPS: Bulk gasoline terminals	N
40 CFR 61 Subpart C	NESHAP: Beryllium	N
40 CFR 61 Subpart E	NESHAP: Mercury	N
40 CFR 61 Subpart F	NESHAP: Vinyl chloride	N
40 CFR 61 Subpart I	NESHAP: Radionuclide emission from facilities licensed by the Nuclear Regulatory Commission and Federal facilities not covered by subpart H	N
40 CFR 61 Subpart M	NESHAP: Asbestos	N
40 CFR 63	Early Reduction Program Modified	N
40 CFR 63	Title III: Guidance for the Implementation of Section 112(G) Modifications	N
40 CFR 63	NESHAP: Stage I Gasoline Distribution Facilities	N

Attachment - Applicable and Non-Applicable Federal and State Regulations

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

PAGE 3 OF 4

(Permit Updated 07/13/16)

Regulation Citation	Regulation Title	Applicable (Y/N)
40 CFR 63	NESHAP: Petroleum Refineries	N
40 CFR 63	NESHAP: Polymers and Resins, Group I	N
40 CFR 63	NESHAP: Polymers and Resins II	N
40 CFR 63 Subpart F, G, H	NESHAP: Hazardous Organic NESHAP	N
40 CFR 63 Subpart DDDDD	NESHAP: Industrial and commercial Boilers	N
40 CFR 63 Subpart UUUUU	NESHAP: Electric Utility Generation MATS	N
40 CFR 68	112 r Chemical Accidental Release Risk Management Plan Requirements	N
SC Reg 62.68 Subpart G	SC 112r Chemical Accidental Release Risk Management Plan Requirements	N
40 CFR 82	Stratospheric Ozone Protection: Methyl bromide and HBFC production and consumption allowances	N
40 CFR Part 82 Subpart A	Protection of Stratospheric Ozone: Production and Consumption Ban	N
40 CFR Part 82 Subpart C	Protection of Stratospheric Ozone: Ban on Nonessential CFC Containing Products	N
40 CFR Part 372	Stratospheric Ozone: Community Right to Know: Addition of Chemicals to Toxic Chemicals Subject to Reporting	N
62.4	Hazardous Air Pollution Conditions	N
62.5 No. 4	IX. Visible Emissions (not specified elsewhere)	N
62.5 No. 5	Air Pollution Control Standards - Standard No. 5 - Volatile Organic Compounds	N
62.5 No. 5	II.T. Bulk Gasoline Terminals and Vapor Collection System	N
62.5 No. 5.1	Air Pollution Control Standards - Standard No. 5.1 - Lowest Achievable Emission Rate (LAER)	N
62.5 No. 6	Air Pollution Control Standards - Standard No. 6 - Alternative Emission Limitation Options (Bubble)	N
62.5 No. 7	Air Pollution Control Standards - Standard No. 7 - Prevention of Significant Deterioration	N
62.5 No. 8	Air Pollution Control Standards - Standard No. 8 - Toxic Air Pollutants	N
62.6	Air Pollution Control Standards - Control of Fugitive Particulate Matter	N

Attachment - Applicable and Non-Applicable Federal and State Regulations

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

PAGE 4 OF 4

(Permit Updated 07/13/16)

Regulation Citation	Regulation Title	Applicable (Y/N)
62.6	III. Control of Fugitive Particulate Matter Statewide - the facility shall not cause or permit any fugitive particulate matter to go beyond property boundaries below a height of 150 feet. Good dust control practices must be implemented.	N

Attachment - Title IV - Acid Rain Program

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

PAGE 1 OF 2

(Permit Updated 07/13/16)

State of South Carolina Acid Rain Permit

Issued to: W.S. Lee Steam Station
Operated by: Duke Energy Carolinas LLC
ORIS code: 3264
Permit No.: 0200-0004
Issue Date: October 2, 2015
Effective Date: January 1, 2016
Expiration Date: December 31, 2020

Acid Rain Permit Contents:

- 1) Statement of Basis
- 2) SO₂ Allowance Allocation and NO_x Requirements for Each Affected Unit.
- 3) Permit Revisions
- 4) The permit application submitted for this source, as corrected by South Carolina Department of Health and Environmental Control. The owners and operators of the source must comply with the standard requirements and special provisions set forth in the application.

1) Statement of Basis:

In accordance with the provisions of the Federal Clean Air Act as amended in 1990, the Pollution Control Act, Sections 48-1-50(5) and 48-1-110(a) and Titles IV and V of the Clean Air Act, the South Carolina Department of Health and Environmental Control issues this permit pursuant to the 1976 Code of Laws of South Carolina, as amended, Regulation 61-62.

2) SO₂ Allowance Allocations and NO_x Requirements for Each Affected Unit:

SO ₂ Allowance Allocations * (Under Tables 2, 3, or 4 of 40 CFR Part 73)			
Unit ID #	Equipment ID	2010 and Beyond	Additional Requirements
3 (Unit ID 03 in Title V permit)	U3	1773 tons	-
Unit 10 Unit 11	CT7C CT8C	N/A	SO ₂ allowances are not allocated by U.S. EPA for new units under 40 CFR 72.

* The number of allowances actually held by an affected source in a unit account may differ from the number allocated by U. S. EPA. If so, a revision to the unit SO₂ allowance allocations identified in this permit is not necessary. (See 40 CFR 72.84)

Attachment - Title IV - Acid Rain Program

Duke Energy Carolinas LLC, W.S. Lee Steam Station

TV-0200-0004

PAGE 2 OF 2

(Permit Updated 07/13/16)

NO_x Emission Limitations (On an Annual Average Basis)			
Unit ID #	Equipment ID	lb/10⁶ Btu of Heat Input	Additional Requirements
3 (Unit ID 03 in Title V permit)	U3	0.40	In addition to the described NO _x compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO _x compliance plan and requirements covering excess emissions.
Unit 10 Unit 11	CT7C CT8C	N/A	NO _x limit is not applicable per 40 CFR 76; Unit 10 and Unit 11 are natural gas and distillate fuel oil-fired units.

3) Permit Revisions:

RECORD OF REVISIONS			
Revision Number	Revision Date	Type (AA, MM, SM)	Description of Change

- AA Administrative Amendment
- MM Minor Modification
- SM Significant Modification

4) Permit Application and Compliance Plan:

The acid rain permit application and compliance plan are incorporated into the permit and constitutes an enforceable part of the permit.