NOTICE OF ADOPTION OF FINAL RULE

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE IS HEREBY GIVEN PURSUANT TO THE AUTHORITY VESTED IN THE COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION by Section 1403 of the New York City Charter and Section 24-149.4 of the New York City Administrative Code that the Department of Environmental Protection ("Department" or "DEP") is promulgating rules to establish requirements for control devices to reduce emissions from under-fired char broilers that were in place on or before May 6, 2016. A public hearing on the proposed rule was held on January 29, 2025. A number of comments were received. In response to these comments, a UL reference number has been corrected and a minor clarification has been made to sampling procedures.

Statement of Basis and Purpose

Commercial char broilers throughout the five boroughs emit an estimated 1,400 tons of particulate matter ("PM") per year based on the 2008 National Emissions Inventory ("NEI") data. More recently, NEI data from 2017 shows an estimated 4,000 tons of PM emissions. The Department of Health and Mental Hygiene estimates that such emissions contributed to more than 12% of PM attributable premature deaths annually in 2005 to 2007 or 400 deaths per year in that period. If all commercial char broilers had control technology installed, the reduction in ambient PM concentrations could have prevented nearly 350 of these premature deaths each year.

To reduce the amount of the emissions released by commercial char broilers, in 2015 the City Council amended Title 24 of the Administrative Code of the City of New York by adding a new Section 24-149.4, which prohibits the operation of any existing commercial char broiler cooking more than 875 pounds of meat per week unless it has an emissions control device that meets the requirements established by the Commissioner of the Department of Environmental Protection (Local Law Number 38 for the year 2015, effective May 6, 2016). An existing char broiler is one that was in place on or before May 6, 2016. DEP is promulgating these rules, as required by Section 24-149.4, to establish requirements for the control of emissions from existing under-fired char broilers.

The rule applies the same standard found in current rules regulating other commercial char broilers (under-fired installed after May 6, 2016, or chain-driven). That standard is that total particulate matter be reduced by 75%. In addition to the 75% standard, the rule introduces an alternative standard for compliance, under which owners may demonstrate PM emissions that are below an upper limit of 10mg/m3. The owner would decide which standard to use to demonstrate compliance.

Demonstrating the 75% PM reduction presented a challenge for many restaurant owners who do not have an Environmental Protection Agency Method 5 certified emissions

control device or a device certified using the South Coast Air Quality Management District Method 5.1 test method. If owners do not have such a device, the owners are required to conduct site-specific field testing to demonstrate an emissions reduction rate of 75% or greater. Achieving or documenting a reduction of 75% or greater has proven difficult, depending on conditions at the restaurant. In some cases, the ports that the emissions control system uses do not allow the difference between the uncontrolled PM and the post-control PM to be measured, so it is impossible to measure the percentage of PM emissions reduced. In other cases, the uncontrolled PM emissions are already so low that achieving a 75% reduction would be impossible. Therefore, as part of this rule, DEP is introducing an additional compliance pathway to demonstrate that emissions from commercial char broilers meet the intent of the Air Code. The upper limit of 10mg/m3 was established by reviewing the California Division of Occupational Safety and Health exposure limits for total dust, the New York State Department of Environmental Conservation regulation for PM standards for process emission sources, and the non-detect limit of laboratories with an Environmental Laboratory Approval Program ("ELAP") Certification from the New York State Department of Health. If a restaurant demonstrates that the commercial under-fired char broiler's PM emissions are at or below the upper limit, it will satisfy the requirements of the Code. The upper limit in this rule is even more protective than the OSHA standard of 15 mg/m3 and the DEC regulation for process emission sources of 114 mg/m3. Furthermore, all the ELAP-certified labs located in New York City can continue to perform testing, because the upper limit is the same as the highest non-detect level of these labs.

In accordance with Section 24-105 of the Administrative Code, an advisory committee, which includes representatives of the restaurant industry and related industries, representatives of the environmental protection and environmental justice communities, and persons with expertise regarding the health effects of pollutants associated with cooking devices, was consulted in the development of these rules.

Specifically, the rule:

- Creates a new chapter of DEP's rules for existing under-fired commercial char broiler emissions requirements (Title 15, Chapter 64),
- Sets forth requirements for emissions control devices, and
- Establishes certification, field testing, maintenance, and recordkeeping requirements.

The rule is authorized by Section 1043 of the New York City Charter and Sections 24-105 and 24-149.4 of the Administrative Code.

The text of the Rule follows.

"Shall" and "must" denote mandatory requirements and may be used interchangeably in the rules of this agency, unless otherwise specified or unless the context clearly indicates otherwise.

Section 1. Title 15 of the Rules of the City of New York is amended by adding a new Chapter 64, to read as follows:

Chapter 64

Emissions Reduction Technologies for Existing Under-Fired Commercial Char Broilers

§ 64-01 Definitions

Access Point means that which enables a device, appliance or equipment to be reached through ready access or by a means that first requires the removal or movement of a panel, door or similar obstruction.

Air Filtration Device means a device composed of fibrous materials which removes solid particulates.

CFM means cubic feet per minute.

Commercial char broiler means a device that consists primarily of a grated grill and a heat source and that is used to cook meat, including beef, lamb, pork, poultry, fish, and seafood, for human consumption at a food service establishment, as such term is defined in 24 RCNY Health Code § 81.03.

Discharge Point means the point at which particulate matter is released from a stack into the open air.

Electrostatic Precipitator (ESP) means a filtration device that removes fine particles, such as dust and smoke, from a flowing gas using the force of an induced electrostatic charge minimally impeding the flow of gases through the unit. An ESP is a type of Emissions Control Device.

Emissions Control Device means any equipment used for collecting or confining particulate matter for the purpose of preventing or reducing the emission of such particulate matter into the open air.

Existing means that the commercial char broiler was installed before May 6, 2016.

Meat means tissue of an animal body that is used for food and includes, but is not limited to, beef, lamb, pork, poultry, fish, or seafood.

Optical Particle Counter (OPC) means an instrument based on the principle of light scattering from particles. It is a real-time instrument that is used to measure particles above 0.05 micrometers in diameter.

Particulate Matter (PM) means any air- or gas-borne material, except water, that exists as a liquid or solid. "PM 10" means PM with an aerodynamic diameter equal to or less than 10 micrometers.

RH Correction Function refers to relative humidity correction. When this function is enabled, the particle growth effect due to high humidity is corrected by computing the mass concentration based on the original dry environment particle population.

Smoke means small gas-borne and airborne particulate matter arising from a process of combustion in sufficient quantity to be visible.

Stack means any duct, control equipment exhaust, or similar apparatus, which vents gases or particulate matter into the open air.

Test Port Plate means a template cover that is designed to prevent any of the air stream from escaping when the existing access plate is removed and which has an opening for the test probe to fit securely through the material (e.g. cardboard or Plexiglas).

Total Suspended Particulates means small airborne particles such as dust, fume and smoke with diameters less than 100 micrometers.

Under-fired commercial char broiler means a commercial char broiler that has a grill, a high temperature radiant surface, and a heat source that is located below the food.

Underwriters Laboratories (UL) means an American worldwide safety consulting and certification company.

Week means a period of 7 consecutive days starting on Sunday, unless a different start day is specified in the registration filed pursuant to § 24-109 of the Administrative Code.

Wet Scrubber System means any Emissions Control Device that mixes an aqueous stream or slurry with the exhaust gases from an indirect heat exchanger to control emissions of particulate matter.

§ 64-02 Emissions Control Technologies Required for Existing Under-Fired Commercial Char Broilers and Assessment

(a) No person shall operate an existing under-fired commercial char broiler that was installed prior to May 6, 2016, to cook more than 875 pounds of meat per week unless an Emissions Control Device that meets the requirements of this chapter has been installed. The Emissions Control Device to be used must have either been tested and certified in accordance with section 64-05 and be on the Fire Department's and the Department's approved list of Emissions Control Devices found at: https://www.nyc.gov/assets/dep/downloads/pdf/air/approved-under-fired-technology.pdf ("certified") or have passed a site-specific field test that complies with the requirements of section 64-06. The field test must demonstrate that a 75 percent PM emissions

reduction is achievable or that the measured PM concentration after the Emissions Control Device is installed is no higher than 10 mg/m3.

Except as otherwise provided in this section, the Emissions Control Device must be installed within 180 days of the effective date of this rule.

(b) If an owner cannot install an Emissions Control Device on the certified list or a non-certified Emissions Control Device that meets the requirements of this chapter, the owner must retain a professional engineer or registered architect licensed under sections 7202 or 7302 of the Education Law who shall conduct and submit an assessment. The assessment must detail the technical limitations of installing an Emissions Control Device, the financial limitations of the owner, and why they preclude the installation of an Emissions Control Device that meet the requirements of this chapter. The assessment must be submitted to the Department within one year of the effective date of this rule.

(c) If the assessment submitted pursuant to subdivision (b) of this section concludes that an Emissions Control Device can be installed to reduce an existing under-fired commercial char broiler's total PM emissions by at least 25 percent but less than 75 percent with the controlled emission being above 10 mg/m3 for total PM, such assessment must describe the Emissions Control Device that can be installed to achieve such reduction. After installation of such Emissions Control Device, the owner must conduct another assessment in accordance with subdivision (b) of this section within two years of the date on which the Emissions Control Device was installed to determine if additional or different Emissions Control Devices can be installed to reduce total PM emissions by at least 75 percent or to reduce total PM emissions to less than or equal to 10 mg/m3.

(d) If the assessment concludes that no Emissions Control Device can be installed on an existing under-fired commercial char broiler or that any Emissions Control Device that could be installed cannot achieve a reduction of the existing under-fired commercial char broiler's total PM emissions by at least 25 percent or achieve a controlled emission level of less than or equal to 10 mg/m3, the assessment must include a technical and economic evaluation as described in subdivision (b), and the applicant must submit a variance petition in accordance with the procedures set forth in section 24-110 of the Administrative Code of the City of New York.

§ 64-03 Types of Control Devices

Only the following technologies may be used to achieve the reduction in PM 10:

(a) Wet Scrubbers Systems and Air Filtration Devices must comply with UL 1978 (2010) and be correctly sized for the cooking appliance as specified by the manufacturer of the under-fired commercial char broiler.

(b) Electrostatic Precipitators must comply with UL 867 (2011) or UL 8782 (2017), must have a certificate of approval from the Fire Department, and must be correctly sized for the cooking appliance as specified by the manufacturer.

(c) Air Filtration Devices such as a carbon cartridge.

(d) Other technology approved by the Department as posted on the Department's website.

§ 64-04 Emissions Control Device Certification

(a) The manufacturer of an Emissions Control Device may seek Department certification by submitting documentation that field testing has been conducted in accordance with the procedures in subdivisions (a) and (b) of section 64-05 of this chapter. Such documentation must be submitted in accordance with the requirements of subdivision (c) of section 64-05 of this chapter.

(b) The Department will maintain a list of certified Emissions Control Devices for use with particular models of under-fired commercial char broilers on the Department's website and will update the list when there are changes.

§ 64-05 Testing Requirements for Certification

(a) Test Methods. Testing for filterable and condensable particulate matter must be performed following Environmental Protection Agency Method 5, Appendix A-3 to 40 C.F.R. Part 60, or South Coast Air Quality Management District Method 5.1.

(b) Test Conditions. Tests pursuant to this section must be administered under the following test conditions derived from ASTM International Standard Test Method F 1695-20. Other provisions contained within ASTM F 1695-20, but not listed here, may be used for guidance. It is recommended that the full provisions of ASTM F 1695-20 be consulted prior to testing.

(i) The Emissions Control Device must have been installed per manufacturer specifications.
(ii) The Emissions Control Device must be tested using the heavy load cooking test specifications from ASTM F 1695-20.
    a. The exhaust hood must have the capacity to operate at a nominal net exhaust ventilation rate of 400 CFM for each linear foot of active hood length. The hood must extend over the surface of the under-fired commercial char broiler by at least 6 inches in the front and sides.
    b. The under-fired commercial char broiler must be warmed up for a minimum of 30 minutes before testing and the char broiler controls must be set such that the broiling area does not exceed 600 degrees Fahrenheit.
    c. Pure beef finished grind hamburgers of 0.33 lbs each must be cooked on the under-fired commercial char broiler during testing. The patties must be shaped into 0.625-inch thick round patties of 5-inch diameter.
    d. The patties must consist of 18 - 22% fat by weight and 58 - 62% moisture.

e. Hamburger patties must be loaded, cooked, and removed in accordance with Section 10 of ASTM International Test Method F 1695-20 using heavy load conditions.

(c) Reporting. The results of the testing required by this section must be submitted on forms prescribed by the Department available on the Department's website and must include the following information:

(i) Name and address of the manufacturer of the under-fired commercial char broiler, brand name, trade name, model number of the under-fired commercial char broiler, any accoutrements installed to enhance or support the operation of the Emissions Control Device, the maximum air flow rate, and other relevant operating conditions during the test, as specified by the Department.

(ii) A description of the certified Emissions Control Device used on the under-fired commercial char broiler model.

(iii) A statement that testing has been conducted in accordance with the requirements of this section.

§ 64-06 Field Testing Requirements for Emission Control Devices That Are Not Certified

Field testing must be performed on any Emissions Control Device that is not found on the certified emissions control list established pursuant to 64-04(b) before such Emissions Control Device may be used. This one-time testing must comply with the requirements of this section. Approval is specific to the location where the test was performed. The test must demonstrate that the Emissions Control Device achieved at least a 75 percent emissions reduction or resulted in controlled emissions no higher than 10 mg/m3 to be approved by the Department.

(a) Test methods

Tests must be performed using the OPC Method or the NIOSH 0500 Method. AFDs or ESPs must be used with the OPC method. Wet Scrubber Systems, ESPs, and Air Filtration Devices must be used with the NIOSH 0500 Method. The test conditions of section 64-05 (b) must be complied with for all methods.

(b) Sampling locations for all methods

For AFDs or ESPs, when taking samples while the char broiler unit is on, readings must be taken from within the clean out Access Point downstream of the device, or at the Discharge Point. When taking samples while the unit is off, samples must be taken upstream of the Emissions Control Device. When the Emissions Control Device upstream Access Point is not reachable, the test must be conducted at a downstream Access Point or at the chimney output point. A field tester must remove the access plate and replace with a Test Port Plate and place the sampling probe inside a precut hole or place the probe directly within the Discharge Point.

(c) Flow rate and volume for OPC samples

Samples taken using OPC must be taken for a minimum of ten minutes at two liters per minute pump speed, or if the flow rate is not adjustable using the constant flow, but no more than 2 L/min. This procedure must be done with two to four samples collected with the unit on and two to four samples with the unit off. If the OPC is equipped with a filter assembly, a new glass or PVC fiber filter must be used for each test. If the OPC is equipped with RH Correction Function, it should be enabled when the humidity is expected to exceed 50 percent.

(d) Protocols for NIOSH samples

(i) A minimum 20-liter sample must be drawn into a 37mm glass or PVC fiber filter. The sample should be drawn for a minimum of ten minutes at two liters per minute pump speed, with two to four samples collected with the unit on and two to four samples with the unit off. Filters should be changed for each test.

(ii) Samples must be taken in accordance with the following sections of NIOSH Method 0500, Issue 2, August 15, 2004: "Equipment" section (except that a 37mm glass or PVC fiber filter should be used), "Preparation of Filters" section, "Sampling" section (except that the total sample volume must be a minimum 20 liters), and "Sample Preparation" section. The filters must then be collected, and the weight of the filters must be certified by an Industrial Hygienist in an accredited laboratory.

(iii) Laboratory Testing. Laboratory testing must be performed in a National Environmental Laboratory Accreditation (NELAC) or New York State Department of Health Environmental Laboratory Approval Program (ELAP) certified laboratory and must follow measurements for nuisance dust as per the NIOSH 0500 method. During each test, samples must be collected from the sampling port of the Emissions Control Device.

(e) Reporting for all methods

For OPC, the installer of the Emissions Control Device must submit a printout to the Department with the readings of Total PM and submit pictures of the filter with the unit on and off. For NIOSH 0500, complete laboratory results certified by an Industrial Hygienist must be submitted to the Department to document the reduction in PM. The owner must submit a report for site-specific testing that will include a project and test condition description, diagram of the sampling location with the cooking equipment and emissions control information, results of testing either printout readings from Total PM from OPC or laboratory results for NIOSH 0500, any supporting information including calculations, photos, and a conclusion.

§ 64-07 Emissions Control Device and Cooking Exhaust System Maintenance

(a) Any Emissions Control Device subject to the requirements of this chapter must be installed, operated, cleaned, and maintained in accordance with the manufacturer's specifications.

(b) Every Emissions Control Device subject to the requirements of this chapter must be inspected, cleaned and serviced in accordance with section 609.5.3 of the New York City Fire Code (2022 or subsequent standard) by a person holding a FDNY Certificate of Fitness as a Commercial Kitchen Exhaust & Precipitator Cleaning Technician.

(c) The cooking exhaust system must be inspected, cleaned and serviced in accordance with section 609.5.3 of the New York City Fire Code (2022 or subsequent standard) by a person holding a FDNY Certificate of Fitness as a Commercial Kitchen Exhaust System Cleaning Technician.

(d) Recordkeeping

On or after the effective date of this rule, any person who owns or operates an existing under-fired commercial char broiler must maintain, for at least one year, records showing date of installation of and all maintenance work performed on the Emissions Control Device, including the date, time, and a brief description of maintenance work performed. For purposes of this subdivision, maintenance includes, but is not limited to, preventative maintenance, breakdown repair, and cleaning. Such records shall be made available to the Department upon request.

§ 2. This rule shall take effect six months after publication in the City Record.