

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

FINAL DRAFT STAFF REPORT

May 22, 2018

Amendments to Rule 4692 (Commercial Charbroiling)

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I. SUMMARY

The San Joaquin Valley Air Basin (Valley) has been designated by the United States Environmental Protection Agency (EPA) as a non-attainment area for particulate matter with diameter of 2.5 micrometers or less (PM_{2.5}). Extensive scientific modeling and air quality analysis indicates that the Valley cannot attain the federal PM_{2.5} air quality attainment standards without significant reductions in emissions from underfired charbroilers. The San Joaquin Valley Air Pollution Control District (District) is currently developing a new measure for the upcoming PM_{2.5} air quality attainment plan to reduce emissions from underfired charbroiling in the Valley that will include financial incentives to help fund accelerated deployment of charbroiler emission control technologies in the Valley and a regulatory backstop to encourage participation. As a first step, to enable the District to implement this measure in a cost-effective and expeditious manner, similar to other businesses subject to the District's regulatory measures, the District must initiate registration of affected operations. The amendments to District Rule 4692 will require the submission of a one-time informational report from owners and operators of commercial cooking operations with underfired charbroilers, as well as registration of underfired charbroilers subject to Rule 4692, pursuant to District Rule 2250 (Permit-Exempt Equipment Registration).

II. BACKGROUND

Current Rule 4692 (Commercial Charbroiling)

Rule 4692 currently applies to owners and operators of commercial cooking operations (restaurants) using chain-driven charbroilers to cook beef, lamb, pork, poultry, fish, and seafood. The rule applies to operators who cook more than 400 pounds of meat per week on a chain-driven charbroiler and emit more than one pound per day of any criteria pollutant. The current rule limits emission of volatile organic compounds (VOCs)

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and particulate matter with aerodynamic diameter of 10 micrometers or less (PM10). The rule requires that chain-driven charbroilers be equipped and operated with a certified catalytic oxidizer control device and maintained in good working order to minimize visible emissions to the atmosphere. For rule language, please refer to the District's website at <http://www.valleyair.org/rules/1ruleslist.htm>.

Affected Source Category

There are two types of commercial charbroilers: chain-driven and under-fired. Chain-driven charbroilers, already subject to permitting requirements under Rule 4692, are semi-enclosed broilers designed to move food mechanically on a grated grill through the device as the food cooks. Food cooks quickly, because chain-driven charbroilers have burners located both above and below the grill. Chain-driven charbroilers are most common in fast food restaurants.

While chain-driven charbroilers use a conveyor system to ensure that meat is cooked for a specific amount of time, underfired charbroilers employ a metal "grid", a heavy-duty grill similar to that of a home barbecue. The grid commonly reaches temperatures of over 600°F and conducts a significant amount of heat to the food. Below the grid, gas broilers have a set of burners spaced every four to twelve inches along the width of the broiler. The flames are diffused by a bed of rock, ceramic briquettes, wood, or a metal shield ("radiant") just above the burners. This material between the flame and the food converts some of the flame's energy to radiant heat. Electric underfired charbroilers may have heating elements interwoven with the bars of the grid, or the elements may be sheathed inside the grid itself, in which case, heat transfer is almost entirely by conduction. As food cooks on an underfired broiler, fat drippings burn on the hot elements, coals, or radiants to create the charbroiler's characteristic flame and smoke. Drippings that are not incinerated are collected in a grease tray.

The smoke and vapors generated by cooking meat on either type of charbroiler contain water, VOCs, and PM. Larger particles and grease are typically captured by the grease filter of the ventilation hood over the charbroiler. The remaining VOCs and smaller PM (typically PM10 and smaller) are exhausted to the atmosphere, unless a secondary control is installed.

Reasons for Rule Development and Implementation

Since 2002, the District has required the installation and operation of particulate matter control devices on chain-driven commercial charbroilers through District Rule 4692 (Commercial Charbroilers). The unavailability of a technologically feasible and cost-effective control technology has been the barrier to the District's attempt to enact similar requirements for underfired charbroiling operations. Other air districts in California have encountered similar difficulties in identifying and requiring compliant control technologies for underfired charbroilers.

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In 2009, the District conducted research and outreach to Valley restaurants to determine whether Rule 4692 applicability could be expanded to include underfired charbroilers and determined that there was a lack of credible and verifiable information necessary to evaluate the costs and reliability of “in-the-field” application of these technologies. Technological feasibility issues and logistical issues requiring further evaluation included the need for extensive hood, exhaust system, and roof modifications as well as the costs associated with installation, maintenance, and labor. To help evaluate these issues, in 2009, the District’s Governing Board directed staff to initiate the Charbroiler Incentive Program (ChIP) and authorized \$500,000 in funding for the program. This program was open and advertised for 18 months, however, the program did not receive any applications. With the importance of achieving direct PM2.5 emissions reductions from underfired charbroilers to address ever-tightening federal standards, in 2015 the District’s Board approved changes to the incentive program aimed at removing what were viewed as impediments by restaurant owners. Under the new program, the District formed the Restaurant Charbroiler Technology Partnership (RCTP) and took a more active role in identifying and screening potential technology vendors and reaching out to restaurant owners. The new program committed to provide the full cost of deploying these systems including installation and maintenance and increased funding of up to \$750,000.

Despite the District’s efforts in promoting available funding under the RCTP program, the District has faced difficulty in finding restaurants willing to partner with the District to demonstrate new technologies. To date, only one restaurant, the Habit Burger Grill, has successfully completed two years of demonstration of a Molitron wet scrubber in their Stockton restaurant. Initially, the project experienced hood fan sizing issues, resulting in the restaurant filling with smoke and being forced to close temporarily. This issue has been addressed and the restaurant has now been successfully operating for about one year with this control device. The Habit Burger Grill has now installed these control devices on seven other new restaurants, with five of these installations in the Valley. The District also recently entered into contract with a new restaurant, Baja Fresh, in Bakersfield with installation anticipated in the near future.

Since 2009, the District has also partnered with the South Coast Air Quality Management District (South Coast), Bay Area Air Quality Management District (Bay Area), and EPA to further the research and evaluation of emission control technologies for underfired charbroilers. Through this effort, underfired charbroiler technology assessments have been conducted at UC-Riverside College of Engineering’s Center for Environmental Research & Technology (CE-CERT). The District provided in-kind technical support and the research was funded with over \$500,000 in contributions provided by South Coast, Bay Area, and EPA. This effort led to the establishment of published testing methodology, South Coast Method 5.1, which has been used as a benchmark methodology to standardize the testing of control efficiencies of kitchen exhaust pollution control units.

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In addition to supporting and evaluating Valley-based underfired charbroiler technology demonstrations, District staff conducted an extensive review and assessment of underfired charbroiler control technology installations in other regions. This review included reaching out to other regulatory agencies, technology manufacturers, the California Restaurant Association, and restaurants both inside and outside of the Valley to better understand the control technologies available for underfired charbroilers, and real-world costs and experiences related to these technologies.

District staff also conducted a thorough search and review of regulations adopted by other agencies for underfired charbroiling emissions and contacted these agencies to better understand the requirements and how they have been implemented. Regulations reviewed included Bay Area Regulation 6 Rule 2 (Commercial Cooking Equipment) and South Coast Rule 1138 (Control of Emissions from Restaurant Operations) as well as rules and regulations in other air districts inside and outside of California.

Modeling conducted for the District's latest PM_{2.5} attainment strategy shows that reducing emissions from underfired charbroiling is the most effective stationary source control measure in helping bring the Valley into attainment in a cost-effective manner. The District is amending Rule 4692 to require the submission of a one-time informational report from owners and operators of commercial underfired charbroiling operations, and to require the registration of underfired charbroilers subject to Rule 4692, pursuant to District Rule 2250 (Permit-Exempt Equipment Registration). The information submitted to the District will assist in better understanding the inventory from this source category, which will be necessary for evaluating the potential control of underfired charbroiler operations.

Rule Development Process

The District hosted a public workshop to present draft amendments and receive public comments on April 26, 2018, followed by a public comment period ending at 5:00 PM on May 10, 2018. Furthermore, in accordance with CH&SC Section (§) 40725, the proposed amendments to Rule 4692 and the final draft staff report were publicly noticed prior to the Governing Board public hearing to consider adoption of the proposed amendments and made available on May 22, 2018. A summary of significant comments and District responses is available in Appendix A of this staff report.

III. PROPOSED AMENDMENTS TO RULE 4692

The following outlines the specifics of the proposed amendments.

Section 2.0 Applicability

The applicability section has been updated to include commercial underfired charbroilers.

Section 3.0 Definitions

A definition for Air Pollution Control Officer (APCO), a definition for an underfired charbroiler, and a definition for outdoor operations have been added to Section 3.0. The definition of commercial cooking operations has been updated to clarify what operations will be affected by the rule.

Section 4.0 Exemptions

Draft amendments add an exemption from registration requirements for underfired charbroiling operations that cook less than a certain amount of meat upon submission of a one-time report quantifying cooking throughputs. Outdoor operations have been exempted from the rule.

Section 5.0 Requirements

Section 5.0 has been amended to remove outdated compliance deadlines in Section 5.1 and 5.2 to improve rule clarity.

Section 5.1 has been amended to consolidate the requirements for Chain-Driven Charbroilers.

Section 5.2.1 has been amended to require a one-time report from owners or operators of Valley restaurants with underfired charbroilers, in order to assist with enhancing the emission inventory data for underfired charbroiler operations and associated throughputs and emissions. The following information will be required in the one-time report (outlined in Section 5.2 of the rule).

- Name and location of the commercial cooking operation;
- Number and size, in cooking surface square feet, of all underfired charbroilers at the commercial cooking operation;
- Type of fuel used to heat the underfired charbroiler(s);
- Type and quantity, in pounds, of meat cooked on the underfired charbroiler(s) on a weekly basis for the previous 12-month period;
- Daily operating hours of the commercial cooking operation;
- Flowrate (cubic feet per minute) of hood or exhaust system(s) serving each underfired charbroiler; and
- The manufacturer and model of any installed pollution control devices designed for the reduction of particulates, kitchen smoke and/or odor.

Section 5.2.2 has been amended to require the registration of underfired charbroilers subject to Rule 4692, pursuant to Rule 2250 (Permit-Exempt Equipment Registration).

Section 6.0 Administrative Requirements

Record-keeping requirements are grouped by the type of charbroiler for clarity. Section 6.2 has been renamed “Records for Chain-Driven Charbroilers” to clarify that the section’s requirements are different from the requirements for Underfired Charbroilers.

Section 6.3 is added, “Records for Underfired Charbroilers.” This section requires that owners or operators of an underfired charbroiler subject to the rule keep weekly records of the total quantity of each type of meat cooked on each charbroiler at the facility. These records are required to be retained at the facility for a minimum period of five years.

Section 6.7 has been renamed “Chain-Driven Charbroiler Control Technology Emission Control Efficiency Limits for Certification” to clarify that the Certification requirements are only for chain-driven charbroiler control technology.

Section 7.0 Compliance Schedule

This section was deleted from the rule, since there are no new control installations required in this rule amendment.

IV. ANALYSES

A. Emissions Reduction Analysis

The 2018 amendments of Rule 4692 will require recordkeeping and the submittal of a one-time report from underfired charbroiler operations, but will not require the installation of any control technology or the modification of affected commercial cooking operations. As such, the draft amendments will not cause any measurable overall change in future year emissions reductions.

B. Cost effectiveness and Socioeconomic analysis

Pursuant to the California Health and Safety Code, the District is required to analyze the cost effectiveness of any proposed rule amendment that implements Best Available Retrofit Control Technology (BARCT). The rule amendments do not add BARCT requirements and therefore are not subject to the cost effectiveness analysis mandate.

Additionally, the California Health and Safety Code requires the District to analyze the socioeconomic impacts of any proposed rule amendment that significantly affects air quality or emission limitations. The rule amendments have neither effect, and are therefore not subject to the socioeconomic analysis mandate.

C. Rule Consistency Analysis

Pursuant to Section 40727.2 of the California Health and Safety Code, prior to adopting, amending, or repealing a rule or regulation, the District is required to perform a written analysis that identifies and compares the air pollution control elements of the rule or regulation with corresponding elements of existing or proposed District and EPA rules, regulations, and guidelines that apply to the same source category. The rule elements analyzed are emission limits or control efficiency, operating parameters and work practices, monitoring and testing, and recordkeeping and reporting requirements.

1. District Rules

Charbroilers could be subject to other District rules including:

- Rule 2010 (Permits Required),
- Rule 2201 (New and Modified Stationary Source Review Rule),
- Rule 4101 (Visible Emissions),
- Rule 4102 (Nuisance),
- Rule 4201 (Particulate Matter Concentration),
- Rule 4202 (Particulate Matter Emission Rate), and
- Rule 4301 (Fuel Burning Equipment).

The above-listed rules are not in conflict nor are they inconsistent with the requirements of draft Rule 4692.

2. Federal Rules, Regulations, and Guidelines

Federal Control Techniques Guideline (CTG)

Beginning in 1975, EPA staff has issued more than 45 CTGs covering a variety of VOC sources. None of the CTGs cover charbroilers.

Federal New Source Performance Standards (NSPS)

The federal NSPS regulations are found in the Code of Federal Regulations Title 40 Part 60 (40 CFR 60). None of the NSPSs apply to charbroilers.

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National Emission Standards for Hazardous Air Pollutants (NESHAPs) and Maximum Achievable Performance Standards (MACTs)

There are no NESHAPs (40 CFR 61) or MACT standards (40 CFR 63) that apply to charbroilers.

Federal Lowest Achievable Emission Rate (LAER) and Federal Best Available Control Technology (BACT)

EPA staff maintains a database of reasonably available control technology (RACT), BACT, and LAER technologies that have been provided to EPA by state and local permitting agencies. A review of the RACT/BACT/LAER Clearinghouse (RBLC) determined that there are no charbroilers in the database, therefore, there is no standard to apply to this source category.

EPA Policies and Guidelines

District staff reviewed policies and guidelines with respect to monitoring, testing, recordkeeping, and reporting for charbroilers.

- **Monitoring and Testing Requirements.** There are no EPA monitoring or testing policies or guidelines that apply to this source category.
- **Recordkeeping and Reporting.** Title V (federal) permits and MACT standards require five-year record maintenance. The proposed recordkeeping for District Rule 4692 requires that operators maintain records for at least five years. Revised Proposed Rule 4692 therefore is consistent with EPA recordkeeping policy.

3. Rule Consistency Analysis Conclusion

Based on the above analysis, District staff concludes that draft Rule 4692 is consistent with other District rules and is not in conflict with said rules. Further, the proposed rule is consistent with EPA rules, regulations, and guidelines that apply to the same source category.

D. Environmental Assessment

The amendments proposed to District Rule 4692 add registration and recordkeeping requirements to applicable underfired charbroilers at commercial cooking operations. There are no other actions or rule requirements associated with this project. Based on the District's investigation, substantial evidence supports the District's conclusion that the amendments will not cause either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the

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environment, and as such is not a “project” as that term is defined under the California Environmental Quality Act (CEQA) Guidelines § 15378. In addition, substantial evidence supports the District’s conclusion that assuming the amendment is a “project” under CEQA, it will not have any significant adverse effects on the environment.

The amendments to District Rule 4692 is an action taken by a regulatory agency, the San Joaquin Valley Air District, as authorized by state law to assure the maintenance, restoration, enhancement, or protection of air quality in the San Joaquin Valley where the regulatory process involves procedures for protection of air quality.

California Environmental Quality Act (CEQA) Guidelines §15308 (Actions by Regulatory Agencies for Protection of the Environment), provides a categorical exemption for “actions taken by regulatory agencies, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment. Construction activities and relaxation of standards allowing environmental degradation are not included in this exemption.” No construction activities or relaxation of standards are included in this project. Therefore, the rule amendment project is exempt from CEQA.

In addition, according to Section 15061 (b)(3) of the CEQA Guidelines, a project is exempt from CEQA if, “(t)he activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.” As such, for this additional reason, the District finds that the rule amendment project is exempt from CEQA.

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