Scoping Meeting for District Rule 4692 (Commercial Charbroiling)

December 12, 2019

webcast@valleyair.org
What is Charbroiling?

• A charbroiler is a cooking device composed of a grill and a heat source, where food resting on grill cooks as food receives direct heat
  – Chain-driven charbroilers: semi-enclosed broilers designed to move food mechanically on a grated grill through the device as the food cooks (common at fast food restaurants)
  – Under-fired charbroilers: similar to a home barbecue, employing a metal grill with a heat source below

• Charbroiling meat is a source of fine particulate matter (PM2.5)
Current District Rule 4692 Requirements

• First adopted in 2002, Rule 4692 (Commercial Charbroiling) limits emissions of VOCs and PM10 from commercial cooking operations

• **Chain-driven charbroilers** are required to be equipped and operated with a certified catalytic oxidizer control device

• **Underfired charbroiler** owner/operators are required to submit a one-time report to District
  – Permit Exempt Equipment Registration (PEER) is required for units that cook more than 400 lbs of meat per week, or more than 10,800 lbs of meat per year
  – Recordkeeping is required
Further Emission Reductions Needed from Commercial Underfired Charbroilers

• Valley’s challenges in meeting federal air quality standards unmatched due to unique geography, meteorology, and topography
• Air quality modeling shows that emissions reductions from commercial charbroiling sources are critical for Valley’s attainment of health-based federal PM2.5 standards
• 2018 PM2.5 Plan includes commitments to evaluate potential emission reductions from underfired charbroiling sources through a combined incentive-based and regulatory approach
# Commercial Charbroiling Emissions Inventory (tons per day)

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
<th>2017</th>
<th>2019</th>
<th>2020</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM2.5</td>
<td>2.89</td>
<td>3.06</td>
<td>3.16</td>
<td>3.21</td>
<td>3.30</td>
<td>3.36</td>
<td>3.41</td>
</tr>
</tbody>
</table>
Upcoming Rule 4692 Amendment

• Due to enormous amount of emission reductions needed to meet health-based PM2.5 air quality standards, in 2018 PM2.5 Plan District committed to evaluate amending Rule 4692 to require the installation of control technologies for underfired charbroiling operations in the Valley
  – Collected survey and registration data will be used to evaluate inventory information and number of underfired charbroilers in the Valley
  – Feasibility of potential rule requirements for new and existing commercial cooking operations will be evaluated through technical analysis, including using demonstration data obtained through RCTP-funded projects
• Rule amendment scheduled for 2020, with implementation of new rule requirements to be implemented no later than 2024
Potential Control Technologies

• Mechanical Filtration Systems
  – Banks of filters (pre-filters, metal mesh screens, MERV filters, may have HEPA or charcoal filters)
  – Large footprint: space and weight considerations
  – For wood-fired or highest volume restaurants, may have prohibitively high maintenance costs due to required filter replacement

• Electrostatic Precipitators (ESPs)
  – Prefilters, followed by ESP cells that ionize pollution particles
  – May have self-washing feature for daily maintenance (monthly maintenance required by service company)

• Wet-Scrubbers
  – Prefilters, followed by water wash tank
  – Increased plumbing/water costs
  – Requires maintenance includes changing wash solution, changing prefilters
Estimated Control Technology Costs

• Control unit equipment purchase price
  – Price ranges from $40,000 to $200,000 (increased cost with increased air flow, number of exhaust points, number of hoods, level of smoke/odor control)
  – Purchase of fire-suppression system costs needed for some installations, with unit cost of approximately $10,000

• Additional installation costs
  – Installation costs $10,000 to $50,000 for new construction
  – Retrofit installations costs range from $20,000 to $100,000 or higher, depending on structural and electrical modifications required, or other permitting issues

• Maintenance costs
  – Maintenance, required to ensure control effectiveness, can range from $6,000 to $30,000 or more annually, depending on throughput and fuel source
Potential Feasibility Issues

• Increased installation costs for existing restaurants
  – Installation may require structural, electrical, or water-line modifications
    resulting in higher costs for existing restaurants compared to new restaurants
    that can integrate pollution control units into initial construction design

• Structural limitations for existing restaurants
  – Existing structure may not have the necessary space or structural support for a
    pollution control unit, so retrofit may be technologically infeasible

• Interruption of operations
  – Installation may require the restaurant to temporarily shut down, resulting in
    loss of revenue

• Prohibitively expensive maintenance
  – Regular maintenance is critical for effective control operation
  – Costs to owners/operators include electricity, water, filter replacement, staff
    labor, and/or service company costs
Restaurant Charbroiler Technology Partnership

• Funding is now available for Valley restaurants to install control technology to reduce pollution
• Program will fund **full cost** of purchase, installation, and maintenance of control equipment for two years
• Project participants must meet minimum eligibility
  – Demonstration restaurants must be located in the District
  – Systems should be operated and maintained for two years
  – Restaurants required to make fiscally reasonable efforts to continue operating control equipment after demonstration
  – Funding not be used for day to day operations
• District is actively looking for partners - for more information:
  [http://valleyair.org/grants/rctp.htm](http://valleyair.org/grants/rctp.htm)
Socioeconomic Impact Analysis for Rule 4692

• Socioeconomic Impact Analysis will be conducted by independent consultant to analyze impacts of proposed regulation on Valley economy

• Recent Request for Proposals (RFP) to select consultant
  – RFP closed November 27, 2019
  – District staff expect to select a consultant by end of 2019
  – Analysis to begin Quarter 1, 2020

• Results of analysis to be publicly available and included with proposed rule amendment package
Next Steps: Public Engagement Process for Rule 4692 Amendment

- Scoping Meeting
- Public Workshop(s)
- Publication of Proposed Rule
- 2020 Governing Board Public Hearing

Public Participation and Comment Invited throughout Process
Contact

Contact: Crystal Yunker
Mail: San Joaquin Valley APCD
1990 E. Gettysburg Ave
Fresno, CA 93726
Phone: (559) 230-5800
Fax: (559) 230-6064
Email: crystal.yunker@valleyair.org
Listserv: http://lists.valleyair.org/mailman/listinfo/commercial_charbroiling
Open Discussion

webcast@valleyair.org