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Bridget McCann

Manager, Southern California Region

October 11, 2017

Dr. Philip Fine
Deputy Executive Officer, Planning and Rules
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Via e-mail at: pfine@aqmd.gov

Re: RECLAIM Working Group
Comments on Future Requirements for Best Available Retrofit Control Technology (BARCT)

Dear Dr. Fine:

Western States Petroleum Association (WSPA) appreciates this opportunity to provide feedback on the transition of the Regional Clean Air Incentives Market (RECLAIM) Program to a command-and-control regulatory structure. WSPA is a non-profit trade association representing companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas and other energy supplies in five western states including California. WSPA has been an active participant in air quality planning issues for over 30 years. WSPA-member companies operate petroleum refineries and other facilities in the South Coast Air Basin that are within the purview of the RECLAIM Program administered by the South Coast Air Quality Management District (District or SCAQMD).

With the planned transition of the RECLAIM program to a command-and-control regulatory structure, the District is entering into uncharted territory. No California air district has ever contemplated or completed such a transition and there are a number of statutory, regulatory, and constitutional considerations that must be considered. These include the Federal Clean Air Act (CAA), U.S. Environmental Protection Agency (USEPA) policies and guidelines, various parts of the California Health & Safety Code (H&SC) applying to both market-based and command-and-control air pollution control programs (e.g., including but not limited to, H&SC §40001, §39616, etc.), and other California statutes (e.g., California SB288-Protect California Air Act of 2003, etc.). There may also be Federal and State constitutional considerations.

One such command-and-control requirement is for Best Available Retrofit Control Technology (BARCT). District Staff has started examining the rules that would be needed to implement BARCT for facilities exiting the RECLAIM program. These so-called "landing rules" will specify the future emissions standards for individual equipment, or (perhaps) groups of similar equipment. Generally, all equipment covered by a command-and-control rule must comply with the specified emission standards unless exempted. At the most recent RECLAIM Working Group Meeting, District Staff noted that up to 27 District rules would require amendments to implement command-and-control BARCT, along with 5 new rules. This could also include

the rescindment of certain existing rules that are outdated and were effectively subsumed by the Regulation XX RECLAIM program.¹

Due to their inclusion in the RECLAIM program, certain source types have not undergone an evaluation for command-and-control BARCT since the RECLAIM program's launch in 1993. These include the following refinery sector source types:

- Fluid catalytic cracking units (FCCUs)
- Boilers and heaters
- Coke calciners
- Sulfur recovery units (SRU) and tail gas (TG) incinerators
- Refinery gas turbines

The District recently conducted program-level analyses to demonstrate BARCT equivalency as required for market-based programs under H&SC §39616. These were last completed for the NO_x and SO_x RECLAIM programs in 2015 and 2010, respectively. The methodology employed by the District for those program-level analyses was different from that used in a command-and-control rulemaking. As such, the RECLAIM BARCT Emission Factors² ("RECLAIM Emission Factors") from those program-level analyses may not be representative of command-and-control BARCT.

The California Health and Safety Code defines BARCT as follows:

"Best available retrofit control technology means an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source."³

In establishing BARCT, a district must do all of the following:⁴

- 1) Identify one or more potential control options that achieves the emission reduction objectives for the regulation.
- 2) Review the information developed to assess the cost-effectiveness of the potential control option. For purposes of this paragraph, "cost-effectiveness" means the cost, in dollars, of the potential control option divided by emission reduction potential, in tons, of the potential control option.
- 3) Calculate the incremental cost-effectiveness for the potential control options. To determine the incremental cost-effectiveness under this paragraph, the district shall calculate the difference in the dollar costs divided by the difference in the emission reduction potentials between each progressively more stringent potential control option as compared to the next less expensive control option.
- 4) And consider the effectiveness of the proposed control option, the cost-effectiveness of each potential control option, and the incremental cost-effectiveness between the potential control options.

In short, BARCT must represent an emission limitation that is both: (a) achievable; and (b) cost effective.

¹ SCAQMD, NO_x RECLAIM Working Group Meeting, September 14, 2017, slides 11-16.

² SCAQMD Rule 2002, Table 4 (RECLAIM SO_x Tier III Emission Standards) and Table 6 (RECLAIM NO_x 2022 Ending Emission Factors).

³ CHSC §40406.

⁴ CHSC §40920.6.

The command-and-control regulations now being contemplated would require the former RECLAIM facilities to install control equipment and incur the full cost of such installation. Since the District's 2015 RECLAIM analysis did not demonstrate that the RECLAIM Emission Factors would be achievable or cost effective in such a command-and-control setting (that was not the regulatory intent), the District will need to complete new BARCT assessments as part of the coming command-and-control rulemakings. This is certainly the case for refinery sector sources.

1. The 2015 RECLAIM Emission Factors may not be achievable under command-and-control.

For the 2015 program-level BARCT equivalency analysis, the District adopted RECLAIM Emission Factors of 2 ppmv NO_x for FCCUs, refinery heaters and boilers greater than 40 mmbtu/hr, refinery gas turbines, and SRU/TGs. While the District contended that one or some of the units in each of these categories could meet the 2015 RECLAIM Emission Factors, the evidence strongly suggested that many units may be unable to achieve those levels absent replacement of basic equipment. The District's analysis did not consider basic equipment replacement or stranded asset costs.

For example, the District's analysis found that only 4 of the 76 installed Selective Catalytic Reduction (SCR) systems in the refinery boiler and heater category were currently performing below 2 ppmvd NO_x.⁵ A confidential WSPA refinery survey,⁶ conducted by a third party contractor, suggested that perhaps only 2 of those 4 were even retrofits (as opposed to basic equipment replacements).

A similarly aggressive position was taken with respect to FCCUs where the District proposed a 2 ppm NO_x emission factor based on a single FCCU. As explained by the District's third-party expert consultant, Norton Engineering, of the three FCCUs currently operating with SCRs, only one of them was able to meet 2 ppmv NO_x.⁷ Norton noted a number of design and operation factors for this condition. Each refinery has unique circumstances such as equipment type, age, and configuration that factor into its ability to achieve prescribed emission levels. Thus, what may be achievable for one piece of equipment may not guarantee similar performance in other units, particularly where the units operate under different conditions.

This concern was highlighted by Norton Engineering, who stated:

"While a few existing units can meet this guideline...many more, similarly designed units have not demonstrated similar low emissions capabilities. With the exception of Gas Turbine installations (which have an equivalent emission level of 6 ppmv @ 3% O₂) most low emission SCRs in service today, being built today and even those being designed today carry manufacturer's guarantees to meet a NO_x limit of 5 vppm @ 3% O₂."⁸ [Emphasis Added]

The District's own expert clearly indicated that the 2015 emission factors may not be achievable over the long term, irrespective of cost. The District will need to reconsider and revise the proposed BARCT levels to ensure that they are achievable in the real-world under a command-and-control scheme.

⁵ SCAQMD, Preliminary Draft Staff Report for Proposed Amended Regulation XX (RECLAIM, Appendix B.

⁶ WSPA/ERM confidential survey of WSPA members concerning refinery heaters/boilers, March 2015.

⁷ Norton Engineering, *Comments on Preliminary Draft Staff Report Proposed Amendments to Regulation XX Regional Clean Air Incentives Market (RECLAIM) NO_x RECLAIM-SCRs for FCCUs Document No. 14-045-7* (August 10, 2015).

⁸ Norton Engineering (J. Norton) letter to SCAQMD (P. Fine), *Comments on Preliminary Draft Staff Report Proposed Amendments to Regulation XX Regional Clean Air Incentives Market (RECLAIM) NO_x RECLAIM – SCRs for Fired Heaters & Boilers Document No. 14-045-8*, September 4, 2015.

2. The 2015 RECLAIM Emission Factors may not be cost effective.

Under RECLAIM's market-based design, facilities were not obligated to install emissions controls to meet the Rule 2002 emission factors unless needed to reduce their actual emissions to match their RECLAIM Trading Credit (RTC) holdings. Alternatively, command-and-control regulations would require these former-RECLAIM facilities to install control equipment to meet BARCT levels and to incur the full cost of such installations. The District has not shown that the 2015 RECLAIM Emission Factors can be achieved in a cost effective manner.

The District's analysis in support of the 2015 RECLAIM Emission Factors selectively excludes many pieces of equipment from further BARCT-equivalency consideration based on a lack of cost effectiveness. This was appropriate for that analysis given the flexibilities afforded under RECLAIM's market-based design. For example, the District's analysis concluded that the 2015 Emission Factors were not cost effective for 77 percent of the refinery heaters and boilers examined.⁹ So even if technically achievable (which is disputed), the District itself concluded that more than three-quarters of the refinery heaters/boilers universe could not cost effectively meet the proposed 2 ppm NOx emission factor. Given that BARCT is required to be both achievable and cost effective, the 2015 Emission Factor for Refinery Heaters/Boilers would not appear to represent BARCT. Reanalysis will be necessary.

3. The baseline used for the 2015 RECLAIM analysis was inappropriate for a command-and-control BARCT determination; cost effectiveness will need to be reconsidered in order to determine BARCT.

Under the District's 2015 RECLAIM analysis, cost effectiveness was calculated using a 2011 emissions baseline, and a cost baseline that hypothetically assumed that emissions controls had been installed to meet the 2011 RECLAIM Emission Factors.¹⁰ Of course, RECLAIM facilities were never obligated to install emission controls to meet the 2011 RECLAIM Emission Factors. The record clearly demonstrates that many units do not presently have such controls. Such a hypothetical would be an inappropriate baseline for calculating cost effectiveness in a command-and-control BARCT determination. The baseline for equipment and control costs will need to be corrected, which will likely change the cost effectiveness determinations from what was concluded in the 2015 RECLAIM analysis. Such a corrected analysis is necessary for establishing command-and-control BARCT.

4. The timetable for transition to command-and-control BARCT could materially affect what is achievable, and whether it is cost effective.

Under RECLAIM's market-based design, covered facilities have successfully reduced aggregate program emissions for NOx and SOx in accordance with the programs' declining RTC caps. Facilities have implemented custom compliance strategies to meet these caps, which included installing emissions controls on equipment where it was cost effective and using the compliance market where physical changes were not cost effective. This is exactly what the program was designed to do, and it has been successful.

⁹ SCAQMD, Summary of Cost Effectiveness for Refinery Boilers/Heaters, presented to RECLAIM Working Group February 2, 2015. 164 of 212 units reported as not cost effective and excluded from further program-level shave consideration.

¹⁰ SCAQMD Rule 2002. See Table 3 - RECLAIM NOx 2011 Ending Emission Factors.

Due to program design, RECLAIM facilities within a given sector may have pursued widely varied strategies and as such now find themselves in widely varied situations with respect to their basic equipment, currently installed emissions controls, and the investments and construction needed to achieve command-and-control BARCT limits that are not yet defined. Given these varied starting points, the implementation schedule for command-and-control BARCT rules could be an important factor in defining what is achievable or cost effective as BARCT. Upcoming BARCT deliberations should therefore include consideration of both what will be required (i.e., the emission limit) and when (i.e., schedule). This is especially true for refinery sector facilities where investments must be coordinated with turnaround schedules, capital projects have a long planning and engineering schedule, and the labor pool may be limited by the requirement to meet the “skilled and trained workforce” requirements of SB 54.

Finally, there are important considerations of fundamental fairness, equity, and ensuring a continuing competitive environment. If implemented in a manner that does not maintain a level playing field, sunseting the RECLAIM program may have significant unintended consequences that could result in significant stranded costs.

5. Command-and-control BARCT must be defined for each class and category of equipment, taking into account the operating requirements of the application.

BARCT is required to represent an emission limitation that is both achievable and cost effective, and must be defined for each class and category of equipment. As you know, the operating requirements for a particular type of equipment can affect what is achievable and/or cost effective in terms of emissions controls. Examples of this would include baseload v. peaking gas turbines, or emergency v. non-emergency internal combustion engines. Additionally, the fuel requirements for a given application can materially affect the degree of emissions control possible. For many refinery source categories, refinery fuel gas (RFG) is used as the primary fuel type which may force different BARCT outcomes as compared to similar equipment in non-refining settings. Such specifics must be considered in the determinations of command-and-control BARCT for these source categories.

The transition of the RECLAIM program will clearly require a significant amount of effort and time to properly develop the needed rules to establish BARCT levels for RECLAIM facilities. Thank you for considering these comments. We look forward to continuing to work with you and your Staff on this rulemaking which is critically important to stakeholders as well as the regional economy.

If you have any questions, please contact me at (310) 808-2146, or by email at bmccann@wspace.org.

Sincerely,



cc: Cathy Reheis-Boyd, WSPA
Patty Senecal, WSPA
Wayne Nastri, SCAQMD