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INTRODUCTION

The Bay Area Air Quality Management District's New Source Review Rule, Regulation 2, Rule 2, and the District's Air Toxics Risk Management Policy require that new or modified sources of air pollutants undergo permit review for Best Available Control Technology (BACT) and/or Best Available Control Technology for Toxics (TBACT) when certain thresholds are exceeded.

BACT Background

By Regulation 2, Rule 2, any new or modified source which results in an increase in emissions of precursor organic compounds (POC), non-precursor organic compounds (NPOC), nitrogen oxides (NOx), sulfur dioxide (SO2), particulate matter (PM10), or carbon monoxide (CO) in excess of 10 pounds per highest day must be reviewed for possible application of BACT. California Health and Safety Code Section 42300 authorizes delegation of stationary source permitting authority from the state to the local air pollution control districts, including the setting of rules and definitions. The California Air Resources Board (CARB) has noted that many districts have BACT definitions that are much more stringent than BACT as defined in federal regulations, indeed perhaps nearly qualifying for federal LAER, Lowest Achievable Emission Rate. The Bay Area Air Quality Management District's (BAAQMD) BACT definition, given in Section 206 of Rule 2 and listed in the next chapter of this Workbook, follows that trend and is consistent with CARB guidelines, while maintaining the flexibility of addressing site-specific, case-by-case limitations, opportunities, and concerns.

TBACT Background

The District's Risk Management Policy, approved by the Board of Directors and implemented by District staff as a permit policy since 1987, is now Regulation 2, Rule 5. The Risk Management Policy requires that TBACT be applied on any new or modified source with a health impact greater than or equal to a cancer risk of one in a million and/or a hazard index of one. Rule 5 is a risk-based program and requires a review of new or modified sources that emit toxic air contaminants. Table 2-5-1 of the rule provide toxic compound emission trigger levels which when exceeded subject the source(s) to air dispersion model-based, site-specific, health risk assessment. The results of the health risk assessment determine the need for TBACT review. Rule 5 was also being developed to meet the mandate of the Title III amendments to the federal Clean Air Act, Section 112(g).

The District currently requires TBACT on sources of air toxic emissions which have health risks that exceed specified levels, as discussed above. District TBACT determinations have historically been at least as stringent as federal Maximum Achievable Control Technology (MACT). If no applicable MACT standard has been established for the source category, a case-by-case MACT determination must be made, if the facility is a major source of hazardous air pollutants, i.e, a facility which emits or has the potential to emit at least 10 tons per year of any federally listed hazardous air pollutant (HAP), or at least 25 tons per year of any combination of HAPs.

In order for the District to receive delegation from EPA to implement Title III of the Federal Clean Air Act Amendments, the District's toxics review programs must be equal to or more stringent than the federal requirements. Sources regulated under Section 112(g) of the Title III amendments to the federal Clean Air Act must install MACT for emissions of listed hazardous air pollutants. The Act includes a list of 189 toxic air pollutants whose emissions must be reduced. MACT is considered to be the "maximum degree of reduction in emissions ... taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements ... achievable for new and existing sources...".

It should be noted that MACT standards can include emission control equipment, process modifications, material substitutions, control procedures, workplace standards, or a combination of methods. Where possible, the District prefers methods that reduce or prevent the creation of pollution at its source, as opposed to "end-of-stack" treatment, provided that equivalent emission reductions can be achieved.

Purpose of the BACT/TBACT Workbook

The purpose of the BACT/TBACT Workbook document is to specify the BACT and TBACT requirements for commonly permitted sources subject to New Source Review in the Bay Area Air Quality Management District. It is intended to be used as a guide by BAAQMD staff engineers, the regulated community, and interested public in determining the specific emission limits and emission control devices or techniques needed to meet the BACT and TBACT requirements of Regulation 2, Rule 2 and the District's Risk Management Policy, respectively. In most cases, TBACT will be the same as BACT.

The applicability, efficiency, performance, and cost of controls are often dependent on site specific factors such as the source's process throughput and material usage, operating duty, the proximity of other sources and abatement equipment, and site limitations such as availability of cleaner burning natural gas or electric utilities. For example, while it may not be appropriate to require a carbon adsorption system on a single solvent vapor degreaser, it may be cost effective for a group of high solvent usage degreasers all abated by a common control device. As another example, consider the BACT review for an internal combustion engine. In general, a natural gas, spark ignited, lean-burn technology engine emitting 1.0 g/bhp-hr of NOx or less may be considered to be BACT (see page 96.3.1 of this Workbook). However, if the engine is a portable unit to be temporarily located at a remote site with no natural gas supply line, then a diesel fired compression ignition engine equipped with timing retard and turbocharging and capable only of 6.6 g/bhp-hr may be the appropriate BACT determination rather than a Selective Catalytic Reduction (SCR) equipped unit with potentially lower emissions (1.5 g/bhp-hr) but much higher control costs (ref. page 96.1.1). Thus, BACT and TBACT determinations may need to be made or confirmed on a case-by-case basis, as necessary, as they have been in the past. As their names imply, BACT and TBACT will continue to evolve as more efficient control technologies develop. District staff engineers will review, verify and incorporate appropriate new performance data and information, as they become available, in their permit evaluations. The BACT/TBACT Workbook will be periodically revised to include these BACT and TBACT updates.

The next chapter of this Workbook, Definition of BACT and TBACT, will review the District's definitions of BACT and TBACT. Policy and Implementation Procedure summarizes the District's policy in interpreting the definitions of BACT and TBACT and making their determinations. A user's guide to this Workbook is given in User's Guide to BACT/TBACT Workbook, and the listing of BACT and TBACT determinations by source category is presented in Sections 2 through 11. A glossary of acronyms and abbreviations is tabulated in Appendix A.