
Section 6

Best Available Control Technology

As stated in Section §116.111(a)(2)(C), new or modified facilities must utilize best available control technology (BACT), with consideration given to the technical practicability and economic reasonableness of reducing or eliminating the emissions from the facility. Each facility is evaluated on a case-by-case basis. Engineering principles and agency experience, concerning the practicality and reasonableness of an emission reduction option, are used in this determination.

As described in their guidance document entitled Evaluating Best Available Control Technology (BACT) in Air Permit Applications (April 2001), the TCEQ BACT evaluation is conducted using a “tiered” analysis approach. The evaluation begins at the first tier and continues sequentially through subsequent tiers only if necessary as determined by the evaluation process described in the TCEQ document. In each tier, BACT is evaluated on a case-by-case basis.

In the first tier, controls accepted as BACT in a recent permit review for the same process in the same industry are approved as BACT in a current review if no new technical developments have been made that would justify additional controls as economically or technically reasonable. According to the TCEQ, the second tier takes into account controls that have been accepted as BACT in recent permits for similar facilities in a different process or industry. The third tier of the TCEQ BACT approach consists of a detailed technical and economic analysis of all control options available for the process under review.

The following sections of the application describe the BACT Analysis for the activities covered in this amendment.

6.1 Storage Tanks

TCEQ’s current BACT guidelines for storage tanks were obtained from its Technical Guidance Package for Chemical Sources: Storage Tanks, June 2015. The TCEQ BACT guidelines for internal floating roof (IFR) tanks storing materials with a vapor pressure greater than 0.5 psia and greater than 25,000 gallon capacity, require a mechanical or liquid mounted primary seal or vapor mounted primary seal with a rim mounted secondary seal. The storage tanks included in this application will be equipped with a primary mechanical shoe and secondary rim-mounted seal. Additionally, IFR

tank convenience landings associated with products with true vapor pressures greater than 0.5 psia will be controlled by a vapor combustion unit with a minimum DRE of 99.8%. This level of control exceeds current BACT guidelines.

6.2 Marine Vessel Loading

TCEQ's current BACT guidelines for loading operations were obtained from its Technical Guidance Package for Chemical Sources: Loading Operations, 08/2011. The TCEQ BACT guidelines for the loading of VOC with a vapor pressure greater than 0.5 psia, require the vapors to be routed to a VOC control device. The TCEQ BACT guidelines for marine loading of VOC with a vapor pressure greater than 0.5 psia, require the vapors to be routed to a VOC control device and an annual vapor tightness test as specified in 40 CFR 63.565(c) or 40 CFR 61.304(f). Vapors generated during the loading of ships are collected and routed to controls using a vacuum control system with a collection efficiency of 99.89%.

The collected emissions from marine vessels are routed to one or more of eight VCUs (EPNs: MVCU-1 through MVCU-8) with a minimum DRE of 99.8%. Axis will implement the above control system to satisfy the BACT control requirements.

6.3 Piping Equipment Fugitives

TCEQ's BACT guidance for fugitive emissions requires implementing a fugitive LDAR Program, the stringency of which varies depending on the amount of uncontrolled fugitive VOC emissions. For the Harbor Island Marine Terminal, uncontrolled fugitive VOC emissions are less than 10 tpy. Per TCEQ's guidance, there is no BACT for this level of emissions.

6.4 MSS Activities

The BACT analysis addresses the following MSS activities and sources:

- MSS Vapor Control;
- Storage Tanks;
- Process Equipment and Piping;
- Air Mover, Vacuum Truck, and Frac Tanks; and
- Pipeline pigging.

BACT listings were found in the EPA RBLC search for some of the MSS activities listed above. TCEQ has no published BACT guidelines applicable to the other MSS sources or activities discussed in this application. The BACT candidates for MSS activities are based on the RBLC BACT listings and on past TCEQ permitting actions.

Best Management Practices (BMP) for MSS activities includes the following:

- Minimizing the number and duration of all planned MSS events;
- Beginning tank degassing within 24 hours after the roof has been landed and the tank completely drained;
- Degassing tanks, process equipment, and piping with volumes > 45 ft³ to a maximum outlet concentration of 10,000 ppmv, measured as VOC, and maintaining that concentration (or less) until maintenance activities are completed or refilling begins;
- Managing residual products with vapor pressures > 0.5 psia that are removed from equipment and piping as a result of an MSS activity in a controlled manner. Specifically, Axis will utilize air movers, vacuum trucks, frac tanks, and sumps equipped with vapor controls when handling materials with vapor pressures > 0.5 psia. All frac tanks will be loaded via submerged fill pipes.

Due to the insignificant level of emissions associated with the MSS activities included in this application, Axis proposes to implement the above described BMP to satisfy the BACT control requirements.