Technical Support Document
for
EPA's Notice of Direct Final Rulemaking

on revisions to the
California State Implementation Plan

as submitted by the State of California, Air Resources Board
for the Mojave Desert Air Quality Management District

EPA's Analysis of
Mojave Desert Air Quality Management District's
Rule 1162, Polyester Resin Operations

United States Environmental Protection Agency, Region IX
Air Division

July 2008

Jerald S. Wamsley

Mojave Desert Air Quality Management District (MDAQMD),
Rule 1162, Polyester Resin Operations

Chronology of MDAQMD Adoption, Air Resources Board Submittal, and EPA Actions

- The MDAQMD Governing Board adopted Rule 1162 on August 27, 2007.

- The California Air Resources Board (CARB) submitted Rule 1162 to EPA on March 7, 2008 as a revision to the California State Implementation Plan (SIP).

- On April 17, 2008, EPA found complete CARB's March 7, 2008 submittal of Rule 1162.

EPA has not approved and incorporated into the SIP a prior version of Rule 1162. However, the MDAQMD staff report states that a SIP rule exists for the Blythe/Palo Verde Valley area of the district (see staff report page 9). This rule was inherited from South Coast AQMD as a 1991 submittal of the 12/07/90 version of SCAQMD Rule 1162.

Rule Summary

MDAQMD Rule 1162, Polyester Resin Operations specifies material, process, work practice, and clean-up requirements for operations that use polyester resin material to fabricate, rework, repair, or touch-up products for commercial, military, or industrial uses.

Rule Evaluation

1. Statutory Requirements & EPA Guidance

In section 182(a)(2)(A) of the Clean Air Act Amendments of 1990 (CAA), Congress required that nonattainment areas, such as MDAQMD, fix their deficient reasonably available control technology (RACT) rules for volatile organic compounds (VOCs) and established a May 15, 1991 deadline for states to submit corrections of those deficiencies. The CAA requires the MDAQMD to adopt and correct RACT rules pursuant to pre-amended (the Clean Air Act prior to its 1990 amendment) section 172(b) as interpreted in pre-amendment guidance. This guidance included the following document:

- "Issues Relating to VOC Regulation Cutpoints, Deficiencies, and Deviations," USEPA, May 28, 1988.

There are no set of Control Technique Guidelines for Polyester Resin Operations.

Because a previous version of (SCAQMD) Rule 1162 is part of the MDAQMD SIP, EPA must ensure that this most recent version of Rule 1162, adopted August 27, 2007, is consistent with Section 110(l) of the CAA. According to Section 110(l), EPA may not approve a SIP revision if that SIP revision interferes with any statutory requirements concerning reasonable

further progress (RFP) towards or attainment of the National Ambient Air Quality Standards (NAAQS), or any other applicable requirement of the CAA. In this case, EPA must review the August 27, 2007 version of Rule 1162 and compare it with the 1991 SIP-approved version. In particular, EPA is concerned that rescission, delayed implementation of a SIP-approved rule, or adoption of emission limits that are less stringent than the SIP-approved rule do not interfere with RFP and attainment of the NAAQS.

2. Evaluation of Rule

MDAQMD's Rule 1162 included the following provisions:

- A description of the rule's purpose and exemptions from the rule;
- A glossary of definitions used within the rule;
- The rule's requirements for specific work practices or VOC content;
- Monitoring and recordkeeping requirements for maintaining and ensuring compliance; and,
- A list of compliance procedures and test methods for determining compliance with the rule.

The provisions within Rule 1162 are derived from recent versions of South Coast AQMD 1162-Polyester Resin Operations, Ventura County Air Pollution Control District Rule 74.14-Polyester Resin Operations, and MDAQMD 1106-Marine Coating Operations. Rule 1162's monomer content requirements are most similar to VCAPCD Rule 74.14, adopted 4/12/05, along with SCAQMD Rule 1162, adopted 11/17/00. Instead of using compliant monomer content, a facility may use air pollution control equipment meeting an 85% overall control efficiency requirement; just above the minimum RACT requirement of 81%. In sum, Rule 1162 emission limits are consistent with nearby air districts and as stringent as those used in California.

Rule 1162 has two exemptions, again derived from VCAPCD Rule 74.14 and SCAQMD Rule 1162. The exemption at Section (A)(3)(a) sets an applicability cut-off of 20 gallons of polyester resin material use per month. Assuming a maximum monomer content and densities, these twenty gallons per month amount to approximately 502 pounds of annual VOC emissions (0.19 lb VOC/lb resin X 240 gal/yr X 11 lb/gal = 502 lb VOC/yr) This is well below the 15 pound per day general RACT applicability cut-off estimated at 3900 lbs/year (260 day/yr X 15 lb/day = 3900 lbs/yr.)

The second exemption at Section (A)(1)(b) is for coatings used in pin-striping in the amount of 1 gallon per day. MDAQMD staff report that they have three boat manufacturing facilities that might use this exemption; however, none are using gel coat spray techniques to apply pin-striping. One source hand applies a larger waterline mark on 80% its hulls, while the other two sources apply vinyl tape to create a stripe.

However, because the pinstriping exemption sets aside application and monomer content requirements, we estimated an improbable but worst case estimate for VOC emissions allowed under the exemption. This exemption results in approximately 8278 pounds of annual VOC emissions assuming all of the gel coat is styrene and 100% of the gel coat used is emitted to the

atmosphere. In reality, this 8278 pound amount would be reduced because some of the gel coat would contain pigment not VOC and in most cases production efficiencies would favor application techniques other than spray on applications (see our endnote for further discussion). When compared to the polyester resin source category emissions inventory for the Mojave Desert non-attainment area, these VOC emissions are approximately 0.8%, a de minimis amount allowed by EPA's RACT policy.

To conclude this evaluation, Rule 1162's contains adequate monitoring, record keeping, and test methods provisions for maintaining and determining the compliance of regulated facilities.

2.a. Section 110(l) Requirements.

EPA must compare the August 27, 2007 version of Rule 1162 with the 1991 SIP-approved version for Blythe/Palo Verde Valley. In particular, EPA is concerned that a rescission, delayed implementation of a SIP-approved rule, or adoption of emission limits or requirements that are less stringent than the SIP-approved rule do not interfere with RFP and attainment of the NAAQS. The submitted Rule 1162 set more stringent emission limits and updates work practices compared to the 1991 SIP approved version inherited from SCAQMD. Furthermore, the submitted Rule 1162 applies across the entire district as opposed to simply the Blythe/Palo Verde area. In sum, the rule does not interfere with reasonable further progress or attainment of the NAAQS.

3. Recommendations for Future Revisions

We recommend that MDAQMD adopt a 90% overall control efficiency as in SCAQMD Rule 1162 and VCAPCD Rule 74.14. Also, while the rule's exemptions are allowable and used in other polyester resin rules, MDAQMD should review these exemptions and consider either lowering them consistent with the practices of sources operating in the air district, or removing them where they are not used by district facilities.

4. Rule Deficiencies

There are no deficiencies in Rule 1162 providing cause for EPA to propose either a limited approval/disapproval, or full disapproval of the rule.

Recommendation

Section 110(k) of the CAA contains provisions governing EPA's review of plans and regulations submitted by State of California, air districts, and localities for inclusion in the California State Implementation Plan. EPA can propose one of four actions on Rule 1162: full approval, conditional approval, limited approval/disapproval, or a full disapproval.

Rule 1162's content requirements, emission controls, and work practices are consistent with other similar nonattainment area rules. The rule contains adequate record keeping provisions

and test methods to monitor the compliance status of regulated facilities. The rule contains no appendix D/RACT deficiencies and fulfills the RACT requirements of CAA section 182(a)(2)(A). Rule 1162 contains neither enforceability deficiencies, nor do the amendments to the SIP raise section 110(l) rule relaxation issues.

In conclusion, EPA proposes full approval of the August 27, 2007 adopted version of MDAQMD's Rule 1162 - Polyester Resin Operations and its inclusion into the California State Implementation Plan.

Attachments

MDAQMD, Rule 1162 - Polyester Resin Operations, adopted August 27, 2007.

"Issues Relating to VOC (Volatile Organic Compound) Regulation Cutpoints, Deficiencies, and Deviations," USEPA, May 28, 1988, cover piece only.

"Final Staff Report, Proposed Adoption of Rule 1162, Polyester Resin Operations, Adopted on 8/27/07" Mojave Desert Air Quality Management District, November 6, 2007.

Email received from Alan De Salvio, MDAQMD staff to Jerry Wamsley, USEPA staff, dated July 9, 2008, detailing VOC estimates associated with exemption at Section (A)(3)(b).

Endnotes

Exemption at Section (A)(3)(b): As we pointed out, the estimated 8278 lbs/year of VOC emissions allowed by this exemption is a very conservative estimate for several reasons. First, All three facilities were assumed to use the entire 1 gallon/day exemption 365 days per year in contrast to a 5 day work week resulting in 260 days per year. Second, all of the pigmented gel coat used is assumed to be 100% monomer in the form of styrene which is emitted in full. In reality the gel coat would contain pigment displacing some of the monomer/styrene and the pigment would not be emitted as VOC but be imbedded to form the stripe. Third, using a spray on application method for pin-striping may be inefficient given the amount of masking preparation needed to prevent overspray. As was noted, the three facilities in Mojave Desert use other application methods. A more realistic estimate of VOC emissions follows below considering the first two factors and that pigmented gel coat monomer content is consistent with the Part 63, Subpart VVVV, National Emission Standards for Hazardous Air Pollutants requirements for boat manufacturing.

(1) Pigmented VOC gel coat emissions factor:
33 lb monomer/100 lb resin X 0.5lb VOC/lb monomer = 0.165 lb VOC/ resin.
(2) Gallons used: 52 weeks/yr X 5 days/week X 1 gal/day X 3 facilities = 780 gallons/yr.
(3) Resin density: 11 lbs/gal (compare to styrene at 7.56 lb/gal).

0.165 lb VOC/lb resin X 780 gal/yr X 11 lbs/gal = 1987 lbs VOC/yr

Compared to 8278 lbs VOC/yr, 1987 lbs VOC/yr is 0.2% of the maximum allowable polyester resin source category VOC emissions inventory (1,056,216 lbs VOC/yr) for the Mojave Desert non-attainment area

To review:
3 facilities X 365 days/year X 1 gal/day X 7.65 lb/gal (density of styrene) = 8278 lbs/VOC/yr.