



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

**EMISSION OFFSET PROGRAM  
FEDERAL EQUIVALENCE DEMONSTRATION**

**Regulation 2-2-423**

**2004 Report for Years 2001, 2002 and 2003**

**Prepared by: K. Lim, D. Brunelle, G. Stone, C. Lee, P. Leong, F. Tanaka and  
E. Chan**

**Reviewed by: Jim Karas PE, Air Quality Engineering Manager**

**EMISSION OFFSET PROGRAM  
FEDERAL EQUIVALENCE DEMONSTRATION  
2004 Report for Years 2001, 2002 and 2003**

**Summary**

This is the 2004 annual offset equivalence report required by Regulation 2-2-423, which covers calendar years 2001, 2002 and 2003. The Bay Area Air Quality Management District's (District) emissions offset program<sup>1</sup> is shown by this report to be at least equivalent to federal offset requirements.

Federal offsets are required from new major facilities<sup>2</sup> and major modifications at major facilities<sup>3</sup> for all non-attainment pollutants. As part of the District's New Source Review (NSR) program, emission offsets are required from both major and non-major facilities and modifications.

**Background**

Federal guidelines require Emission Reduction Credits (ERCs) be real, permanent, quantifiable, enforceable, and surplus. This is achieved by adjusting ERCs considering the following:

- A District rule that is required for federal attainment demonstration purposes;
- A District rule has been approved into the State Implementation Plan (SIP);
- New Source Performance Standard (NSPS); and
- Maximum Achievable Control Technology (MACT) Standard<sup>4</sup>

The U.S. EPA recognizes that under the District program, ERCs generated at time of banking meet these federal guidelines. Since the District program does not adjust ERCs again at the time of use, EPA guidelines allow an alternative demonstration of offset equivalency. Pursuant to Regulation 2-2-423<sup>5</sup>, the District is required to make an annual demonstration that the quantity of offsets provided for all new or modified sources, less adjustments to those offsets for federal purposes, exceed the quantity of offsets required under federal law for new major facilities and major modifications at major facilities.

---

<sup>1</sup> Regulations 2-2 and 2-4 as adopted on June 15, 1994 and approved by U.S. EPA as part of the State Implementation Program (SIP) on January 26, 1999 (64 FR 3850)

<sup>2</sup> For the purposes of this demonstration, a major facility is a facility that has the potential to emit 100 tons per year or more of POC or NOx.

<sup>3</sup> For the purposes of this demonstration, a major modification of a major facility is a modification at an existing major facility that will increase the facility's emissions by 40 tons per year of POC or NOx (Regulation 2-1-204).

<sup>4</sup> National Emission Standards for Hazardous Air Pollutants (NESHAPS) require application of technology-based emissions standards referred to as Maximum Achievable Control Technology (MACT). Post-1990 NESHAPS are also referred to as MACT standards. (Regulation 2-2-221)

<sup>5</sup> See Appendix A

District staff makes an annual demonstration, with a 3-year look back, that the District's emission offsets program exceeds federal offset requirements for non-attainment pollutants from new major facilities and major modifications at major facilities. For the District, the applicable non-attainment pollutants are precursor organic compounds (POC) and oxides of nitrogen (NO<sub>x</sub>).

The District requires more facilities to obtain offsets than are required by federal law. Under federal law, offsets are required at a 1.15 to 1.0 ratio for a new major facility or a major modification at an existing major facility. In addition to these federal requirements, District Regulation 2-2-302 requires offsets at a 1.15 to 1.0 ratio for all facilities with a potential to emit (PTE) of 35 tons per year or more of NO<sub>x</sub> or POC. The District also requires offsets at a 1.0 to 1.0 ratio for all facilities with a PTE between 10 and 35 tons per year of NO<sub>x</sub> or POC. For this latter category, the District provides the POC and NO<sub>x</sub> credits from the District Small Facility Banking Account (SFBA).

### **Equivalency Procedure**

District staff uses the following procedure to determine offset equivalency. In the ensuing discussion, the term *major NSR project* is used to collectively refer to a new major facility and a major modification of an existing major facility.

- Identify any new major NSR project that received a Permit to Operate (P/O) in the most recent year (2003) of the reporting period. If a major NSR project received a P/O in a previous year (2001 or 2002), that project has already been addressed in a prior report and does not need to be re-evaluated in this report.
- If there is no major NSR project that received a P/O in 2003, then there is no new analysis needed to demonstrate equivalency. If there is a new major NSR project, continue with the procedure, as follows.
- Compile a list of all permit applications for which offsets were required. This includes both major and non-major new source review (NSR) projects.
- For each major NSR project identified in the first step, review the permit application to determine from which banking certificate(s) the emission reduction credits (ERCs) were provided.
- Review original banking application(s) for ERCs that were used to offset the major NSR project. Determine the basis for the original ERCs, and any federally enforceable rules in effect at the time of deposit.
- RACT-adjust the original ERCs for the following types of federally enforceable rules that were in effect at the time of use of the ERCs (when the P/O was issued for the major NSR project):
  - District rule that is required for federal attainment demonstration purposes;
  - New or modified District rule that has been adopted into the SIP;
  - New Source Performance Standard (NSPS) rule;
  - Maximum Achievable Control Technology (MACT) rule.

- For each major NSR project, subtract the RACT-adjusted ERCs from the total offsets needed, to determine the offset shortfall for that project.
- If a shortfall is identified, review ERCs and contemporaneous on-site emission reductions<sup>6</sup> from non-major projects. RACT-adjust these reductions as discussed above.
- Equivalency is achieved when RACT-adjusted offsets from non-major projects meet or exceed the shortfall.

### **New Major Facilities and Major Modifications During the Reporting Period**

Between 2001 and 2003, there was one permit to operate issued for a major NSR project. This was for the Delta Energy Center, Plant #12095. Under Application No. 19414, emission offset credits were provided and a permit to operate was issued on January 7, 2003. The emission increases and emission offset decreases for POC and NOx for the Delta Energy Center are listed in Table 1.

### **Offset Equivalency Demonstration for Delta Energy Center**

Table 1 shows all banking certificates used to offset emissions from the Delta Energy Center project and summarizes the hypothetical RACT adjustments of the original ERCs. It shows the original basis at the time of credit generation and the projected RACT adjustment at time of credit use. Details of the RACT adjustment analysis for each ERC are provided in Appendix B. The following are two examples of the analysis that is summarized in Table 1:

#### ***Analysis of Potential Shortfall***

##### *Homestake Mining Co. (Banking Application # 18058):*

22.07 tons per year of NOx credits were obtained from the shutdown of a blasting operation at the mine. The RACT level at the time of original credit issuance was based on an AP-42 emission factor of 17 lb NOx per ton of ammonium nitrate/fuel oil (ANFO) explosive used. Since there is no District or federal rule limiting NOx emissions from this blasting operation, and since the current AP-42 emission factor is still 17 lb/ton, there is no RACT adjustment required for these ERCs.

##### *Crown, Cork & Seal (Banking Application # 30863):*

69.4 tons per year of POC credit were originally issued for the shutdown of several coating sources used to manufacture beverage cans. These sources were subject to District Regulation 8-11 Metal Container, Closure and Coil Coating. Between the time of credit deposit and the time of use, the VOC standard for the interior body spray decreased from 4.3 to 3.5 lb per gallon of coating. This resulted in a RACT adjustment or decrease of 29.1 tons per year of POC credit. The net amount of credit after RACT adjusting is 40.3 tons per year (69.4 – 29.1 = 40.3 ton/yr).

The Delta project used 33.247 ton/yr of NOx offsets and 19.999 ton/yr of POC offsets from the POC credits that were originally issued to Crown, Cork & Seal. This is a total of 53.246 ton/yr of

---

<sup>6</sup> A contemporaneous on site emission reduction is a verified reduction that has not been banked but would have qualified for banking.

POC credit that was applied to the Delta project. However, based on the discussion above, there is only 40.3 ton/yr of RACT-adjusted POC credit available. This results in a shortfall of 12.946 ton/yr of POC ( $53.246 - 40.3 = 12.946$  ton/yr).

The total shortfall after analysis of the ERCs used for the Delta project was 19.029 tons per year of POC.

### ***Analysis of ERCs from Non-Major Projects***

Tables 2 and 3 show a summary of all POC and NO<sub>x</sub> credits surrendered for 2001 to 2003. Offsets from non-major facilities were reviewed and RACT-adjusted until the amount of ERCs was enough to cover the shortfall. Two applications from non-major projects were reviewed to cover the shortfall for the Delta project. The findings are summarized in Table 4. Details from of the RACT adjustment analysis for each of the non-major ERC applications are provided in Appendix C. Additional analysis from many other non-major projects was not needed.

### **Conclusion**

Staff has demonstrated that the District's offset program is at least equivalent to federal requirements for the reporting period 2001 to 2003. Emission offset credits provided by non-major facilities and non-major modifications at these facilities more than compensate for any hypothetical RACT adjustments for federal purposes at the time of credit use.

**Table 1 - Delta Energy Center AN 19414 Offset Summary with RACT Adjustments**

Pollutant Increase	Increase (tons/yr)	Offset Ratio	Pollutant Decrease	Decrease (tons/yr)	RACT Adj. (ton/yr)	Original Basis	RACT at Time of Credit Use Basis	Surrender Certificate	Emission Reduction Location	Bank Applic. No.
NO <sub>x</sub>	12.661	1.15	NO <sub>x</sub>	14.560	0.000	0.031 lb/MM BTU for boiler 0.098 lb/MM BTU for dryer	9-7-301.1 NO <sub>x</sub> < 30 ppm @ 3% O <sub>2</sub> (0.036 lb/MM BTU) No change to any rule affecting dryer NO <sub>x</sub> emissions	657	E.I. DuPont de Nemours Oakley, CA	27269
NO <sub>x</sub>	28.910	1.15	NO <sub>x</sub> (from POC ERCs)	33.247	0.000	NO <sub>x</sub> offsets provided from POC ERCs, See below	NO <sub>x</sub> offsets provided from POC ERCs, See below for Certificate 664	664	Crown, Cork & Seal Richmond, CA	30863
NO <sub>x</sub>	19.191	1.15	NO <sub>x</sub>	22.070	0.000	AP-42 emission factor of 17 lb/ton for blasting	No rule affecting NO <sub>x</sub> from blasting	670	Homestake Mining Co. Napa, CA	18058
NO <sub>x</sub> <sup>(1)</sup>	144.128	1.15	NO <sub>x</sub>	165.747	0.000	0.1 and 0.25 lb/MM BTU for natural gas and fuel oil	Reg. 9-11 306.4 prohibits non-gaseous fuel. Re-calc. using 0.1 lb/MM BTU and an equivalent amount gaseous fuel	673	PG&E Rodeo, CA	1388
<b>NO<sub>x</sub> Totals</b>	<b>204.890</b>			<b>235.624</b>	<b>0.000</b>					
<sup>(1)</sup> RACT adjustment of 101.25 TPY for B#100. Original balance of 308 - 101.25 TPY = 206.75 TPY remaining, which is sufficient to cover 165.747 TPY for NO <sub>x</sub> from B#673.										
POC	1.391	1.15	POC	1.600	0.000	AP-42 em. factor of 5.5 lb/MM scf	No change to any rule affecting boiler or dryer POC emissions	657	E.I. DuPont de Nemours Oakley, CA	27269
POC	20.626	1.15	POC	23.720	-0.800	Paint manufacturing Solvent cleaning VOC = 7.3 lb/gal	No change to Reg. 8-35 for paint manufacturing Reg. 8-16-303.5 solv. cleaning VOC < 0.42 lb/gal	663	Courtaulds Aerospace Richmond, CA	16693
POC <sup>(2)</sup>	17.390	1.15	POC	19.999	-12.946	can coating, inside, bottom & exterior VOC = 3.65, 2.79 & 2.09 lb/gal	Reg. 8-11 limits for inside, bottom & exterior coating VOC < 3.5, 3.5, & 2.1 lb/gal	664	Crown, Cork & Seal Richmond, CA	30863
POC <sup>(3)</sup>	2.420	1.15	POC	2.783	-1.283	Can mfr. end sealing compound Reg. 8-11-301 VOC < 3.7 lb/gal	Reg. 8-11-301 VOC < 0.1 lb/gal	667	Continental Can Pittsburg, CA	32763
POC	16.696	1.15	POC	19.200	-4.000	Reg. 8-4: 450 lb/MM & 3000 lb/day limits Reg. 8-12-301: 1.0 lb/gal	Reg. 8-4-301: 3.5 lb/gal No change to Reg. 8-12	669	Dexter Hysol Aerospace Pittsburg, CA	9539
POC	6.957	1.15	POC	8.000	0.000	AP-42 em. factors: 1.4 lb/MMscf for nat. & ref. gas and 0.76 lb/mgal for fuel oil	Re-calculating based on newer AP-42 em. factor (5.5 lb/MM scf for nat. & ref. gas) results in higher emissions. No RACT adjustment.	673	PG&E Rodeo, CA	1388
<b>POC Totals</b>	<b>65.480</b>			<b>75.302</b>	<b>-19.029</b>					

<sup>(2)</sup> RACT adjustment of 29.1 TPY for B#54. Original balance of 69.4 - 29.1 (RACT) = 40.3 TPY remaining. 33.247 used for NO<sub>x</sub> & 7.053 used for POC. POC RACT reduction is 33.247 + 19.999 - 40.3 = 12.946

<sup>(3)</sup> RACT adjustment of 19.8 TPY for B#85. Original balance of 21.3 - 19.8 = 1.5 TPY remaining. RACT reduction for this application is 2.783 - 1.5 = 1.283







**Table 4 - Non-Major ERCs used for Delta RACT Deficit**

<b>POC</b>						
<b>Plant No.</b>	<b>Appl. No.</b>	<b>On Site Credit</b>	<b>Decrease</b>	<b>Bank No.</b>	<b>RACT Adjustment</b>	<b>Revised Credits</b>
653	6725	10.1			0	10.1
12626	5846	12.1			0	12.1
		<b>22.2</b>				

**Total POC: 22.2**

**RACT Adjusted Total: 22.2**

<b>Delta POC Deficit</b>	<b>Excess Credits</b>
19.029	3.171

## Appendix A

### Regulation 2-2-423

**2-2-423 Demonstration of Offset Program Equivalence:** By March 1 of each year, the District shall submit to EPA a demonstration that offsets provided for all new and modified sources within the District, less adjustments to those offsets for federal purposes occurring between credit generation and use, exceed federal offset requirements for new major sources or major modifications at major stationary sources. Adjustment to emission reductions for federal purposes will be required if any of the following occur between the time the credit is generated and the time the credit is used:

423.1 BAAQMD adopts a relevant measure or rule that is required for purposes of federal attainment demonstration requirements.

423.2 A relevant rule or measure is approved into the State Implementation Plan applicable in the BAAQMD;

423.3 EPA promulgates a relevant final rulemaking for either a New Source Performance Standard or a Maximum Achievable Control Technology Standard.

The demonstration shall include:

423.4 Emission increases represented by all authorities to construct new major facilities and major modifications at major facilities issued during the three calendar years preceding the demonstration date;

423.5 A list of all emission reductions used to offset those emission increases;

423.6 The emission baselines that were used to calculate the emission reduction;

423.7 The source type, size and category that had generated the emission reduction credit;

423.8 All relevant rules that have been adopted or promulgated since the emission reduction had occurred.

423.9 Adjustments to emission reduction for federal purposes for all affected projects.

423.10 All of the above for as many non-major projects as are needed to demonstrate equivalence.

If the analysis fails to make the required demonstration, the District shall provide sufficient offsets to make up the difference out of the small facility bank. If the small facility bank does not contain the necessary surplus emission reductions, the District shall obtain the necessary surplus emission reductions.

## Appendix B

### RACT Adjustments of ERCs Provided by Delta

See the following ERC RACT Adjustment Reports for the banking certificates identified above in Table 1.

[B657 – El DuPont \(B618\)](#)

[B663 – Courtauld Aerospace \(B511\)](#)

[B664 – Crown, Cork & Seal \(B54\)](#)

[B667 – Continental Can \(B85\)](#)

[B669 – Dexter Hysol Aerospace \(B235\)](#)

[B670 – Homestake Mining Company \(587\)](#)

[B673 – PG&E \(B100\)](#)

The naming convention of *Bxxx – Plant Name (Byyy)* is used, where:

*Bxxx* is the banking certificate number that was used to provide offsets for the major NSR project.

*Plant Name* is the plant where the emission reductions originally occurred.

*Byyy* (in parentheses) is the banking certificate number for the original bank deposit of the emission credits.

## Appendix C

### RACT Adjustments of ERCs from Non-Major Projects

See the following ERC RACT Adjustment Reports for the on-site contemporaneous reductions identified above in Table 4.

#### ***On-Site Reductions***

[ONS653 – Central Marin Sanitation Agency \(AN 6725\)](#)

[ONS12626 – Valero Refining Company \(AN 5846\)](#)

The naming convention of *ONSxxx – Plant Name (AN yyyy)* is used, where:

- *xxx* is the plant number where the credit was used.
- *Plant Name* is the plant where the emission reductions occurred.
- *AN yyyy* is the permit application number under which the on-site reductions were used.