# PERMIT TO CONSTRUCT & OPERATE EVALUATION
## New RTO to Replace 2 Oxidizers & C/C for 2 ICE

| | |
|---|---|
| **Applicant's Name** | **REXAM, INC.** |
| **Company I.D.** | **052517** |
| **Mailing Address** | **20730 PRAIRIE ST., CHATSWORTH, CA 91311** |
| **Equipment Address** | **SAME AS ABOVE** |

**EQUIPMENT DESCRIPTION**

**Application No. 498284 (Modification of P/O F89352, A/N 460977) (D6) (On Line No. 1)**

MODIFICATION OF THE EQUIPMENT SO THAT IT CAN BE VENTED TO APC C76.

INSIDE BAKE OVEN NO. 1, PECO ENGINEERING, 11'- 5" W. X 51'- 0" L. X 10'- 9" H., 9,000,000 BTU/HR TOTAL, INDIRECT NATURAL GAS-FIRED, WITH ONE 7.5 H.P. EXHAUST FAN. (VENTED TO AFTERBURNER DEVICE NO. C22 OR C75)

**Application No. 498285 (Modification of P/O F89353, A/N 460978) (D14) (On Line No. 2)**

MODIFICATION OF THE EQUIPMENT SO THAT IT CAN BE VENTED TO APC C76.

INSIDE BAKE OVEN NO. 2, PECO ENGINEERING, 11'- 5" W. X 51'- 0" L. X 10'- 9" H., 9,000,000 BTU/HR TOTAL, INDIRECT NATURAL GAS-FIRED, WITH ONE 7.5 H.P. EXHAUST FAN. (VENTED TO AFTERBURNER DEVICE NO. C22 OR C75)

**Application No. 498286 (Modification of P/O F89354, A/N 460979) (D19) (On Line No. 3)**

MODIFICATION OF THE EQUIPMENT SO THAT IT CAN BE VENTED TO APC C76.

PRINTER PIN OVEN, FECO ENGINEERED SYSTEMS, 8'- 0" W. X 45'-0" L. X 23'- 0" H., 4,000,000 BTU/HR TOTAL, INDIRECT NATURAL GAS-FIRED, WITH ONE 5 H.P. EXHAUST FAN, ONE 50 H. P. CIRCULATING FAN. (VENTED TO AFTERBURNER DEVICE NO. C23 OR C75)

**Application No. 498287 (Modification of P/O F89356, A/N 460981) (D20) (On Line No. 3)**

MODIFICATION OF THE EQUIPMENT SO THAT IT CAN BE VENTED TO APC C76 VIA C55.

INSIDE SPRAY STATION, CUSTOM, MODEL NO. ANC773, SIXTEEN ¾ H. P. MOTORS SERVING 8 AIRLESS SPRAY HEADS. (VENTED TO A BAGHOUSE AND AFTERBURNER DEVICE NO. C22 OR C75)

**Application No. 498288 (Modification of P/O F89357, A/N 460983) (D21) (On Line No. 3)**

MODIFICATION OF THE EQUIPMENT SO THAT IT CAN BE VENTED TO APC C76.

INSIDE BAKE OVEN, MOCO THERMAL SYSTEMS, 11'- 0" W. X 50'- 0" L. X 12'- 0" H., 9,000,000 BTU/HR TOTAL, INDIRECT NATURAL GAS-FIRED, WITH ONE 7.5 H.P. EXHAUST FAN, ONE 30 H.P. CIRCULATING FAN, AND ONE 25 H.P. COOLING FAN. (VENTED TO AFTERBURNER DEVICE NO. C23 OR C75)

**Application No. 498289 (Modification of P/O F89355, A/N 460980) (D18, D70, C71) (On Line No. 3)**

MODIFICATION OF THE EQUIPMENT SO THAT IT CAN BE VENTED TO APC C76.

1. OVERVARNISH APPLICATOR.

2. UNDERVARNISH APPLICATOR.

3. HEPA FILTER, MACHINE MASTER, MODEL NO. MM-2000.

4. EXHAUST SYSTEM WITH A 2 H.P. MOTOR VENTING OVERVARNISH APPLICATOR TO THE INLET OF THE LINE 3 PIN OVEN (D19) COMBUSTION CHAMBER VIA HEPA FILTER UNIT. D19 WILL BE VENTED TO C75.

**Application No. 498290 (Modification of P/O F89360, A/N 460986) (C55)**

MODIFICATION OF THE EQUIPMENT SO THAT IT CAN BE VENTED TO APC C76.

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1 BAGHOUSE, HOSOKAWA MICROPUL, MODEL NO. 49S-8-20-C, WITH 49 FILTER BAGS, EACH 0' – 4 5/8" DIA. X 8' – 0" H., 487 SQ. FT. TOTAL FILTER AREA, AND PULSE JET SHAKER.

2. EXHAUST SYSTEM VENTING ONE INSIDE SPRAY SYSTEM (D20) WITH A 10 H.P. MOTOR. D20 WILL BE VENTED TO C75.

**Application No. 498298 (Modification of P/O F89358, A/N 460984) (D48) (On Line No. 3)**

MODIFICATION OF THE EQUIPMENT SO THAT IT CAN BE VENTED TO EITHER APC C76.

BASECOATER PIN OVEN, FECO ENGINEERED SYSTEMS, 8'- 0" W. X 45'-0" L. X 23'- 0" H., 4,000,000 BTU/HR TOTAL, INDIRECT NATURAL GAS-FIRED, WITH ONE 5 H.P. EXHAUST FAN, ONE 50 H. P. CIRCULATING FAN. (VENTED TO AFTERBURNER DEVICE NO. C22 OR C75)

**Application No. 498291 (New Construction) (C76)**

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. AFTERBURNER, REGENERATIVE, HOT-ROCK BED TYPE, MEGTEC, MODEL NO. CLEANSWITCH CS500-95, 24' - 0" W. X 43' - 5" L. X 18' - 7" H., 50,000 SCFM, WITH A MAXIMUM RATING OF 9,700,000 BTU PER HOUR MAXON NATURAL GAS FIRED BURNER, MODEL NO. KINEDIZER LE, A 30 H.P. COMBUSTION BLOWER AND A NATURAL GAS INJECTION SYSTEM OF 10,185,000 BTU/HR.

2. HEAT EXCHANGE CHAMBER, 2-CHAMBERS, STRUCTURED CERAMIC MEDIA.

3. EXHAUST SYSTEM WITH A 400 H.P. EXHAUST BLOWER VENTING LINE 3 PRINTER OVEN (D19), LINE 3 INSIDE BAKE OVEN (D21), LINE 1 INSIDE BAKE OVEN (D6), LINE 2 INSIDE BAKE OVEN (D14), LINE 3 BASECOATER PIN OVEN (D48), LINE 3 INSIDE SPRAY SYSTEM (D20) AND BAGHOUSE (C55).

**Application No. 501025 (Change of Condition, Previous A/N 320770) (D43)**

INTERNAL COMBUSTION ENGINE, CUMMINS, MODEL NO. 6AT3.4-01 (40DGAE), SERIAL NO. 53137671, DIESEL-FUELED, FOUR CYCLE, SIX CYLINDER, 65 BHP, LEAN BURN, TURBOCHARGED, DRIVING AN EMERGENCY ELECTRICAL GENERATOR.

**Application No. 501026 (Change of Condition, Previous A/N 320773) (D44)**

INTERNAL COMBUSTION ENGINE, CUMMINS, MODEL NO. N-855-F, SERIAL NO. 10430169, DIESEL-FUELED, FOUR CYCLE, SIX CYLINDER, 215 BHP, LEAN BURN, NATURALLY ASPIRATED, DRIVING AN EMERGENCY FIRE PUMP.

**Application No. 498292**

TITLE V/RECLAIM PERMIT REVISION APPLICATION.

## HISTORY

The application # 498291 from Rexam Inc. was submitted to the District to install a new Regenerative Thermal Oxidizer (RTO) with a 9.7 mm BTU/HR natural gas-fired burner. The other applications were submitted for modification to vent existing equipment such as ovens and spray systems to this new RTO. The two ICE engine applications are submitted to include different maintenance and testing hours limits to comply with the Rule 1470. The applicant decided to install a new functionally identical but more efficient regenerative thermal oxidizer at this location to replace two old thermal oxidizers. As a result, Rexam Inc. has submitted above permit application with the AQMD as class I application to install a new RTO. The new RTO will vent all the current equipment vented to the two current afterburners.

The facility currently has two oxidizers (C22 and C23) to control some of the VOC emissions from all three can manufacturing lines. The Salem regenerative thermal oxidizer (C23) is designed to handle 9000 scfm of contaminated air-flow. The Smith direct-fired afterburner is designed to handle contaminated air-flow of 16000 scfm. The applicant is proposing to install a new RTO to handle 50,000 scfm of contaminated air-flow and vent all the equipment controlled by the two afterburners. The following table describes the proposed configuration under this project.

| C22 | C23 | C76 |
|---|---|---|
| **Equipment to be vented when C74 is off-line.** | **Equipment to be vented when C74 is off-line.** | Line 1 IBO oven (D6). (4643 scfm) |
| Line 1 IBO oven (D6). (4643 scfm) | Line 3 Printer oven (D19). (3194 scfm) | Line 2 IBO oven (D14). (5580 scfm) |
| Line 2 IBO oven (D14). (5580 scfm) | Line 3 IBO oven (D21). (4537 scfm) | Line 3 coater oven (D48). (3194 scfm) |
| Line 3 coater oven (D48). (3194 scfm) | Varnish Mist Applicator filter (C71). (850 scfm) | Line 3 spray machines (D20) via baghouse (C55). (1265 scfm) |
| Line 3 spray machines (D20) via baghouse (C55). (1265 scfm) | | Line 3 Printer oven (D19). (3194 scfm) |
| | | Line 3 IBO oven (D21). (4537 scfm) |
| | | Varnish Mist Applicator filter (C71). (850 scfm) |
| 14682 scfm Total | 8581 scfm Total | 23263 scfm Total |

The applicant has already requested facility-wide VOC HAP caps (10 tons/yr for single HAP and 25 tons/yr for combined HAPs; Condition F2.2), so that they can be exempt from the NESHAP requirements under 40CFR63 Subpart KKKK.

The coating operation vented to this new control device will not have any changes under this project. Thus, there will not be any changes to the VOC emissions from the exhaust of the basic devices. The can production lines operate 24 hours a day and clean-up material usage is very minimal. Most of the coatings are water based and water is used as equipment clean-up material. A VOC emission cap has been established for this facility (1431 lbs/day). VOC emissions from the printer oven, basecoat oven, inside spray station and the inside coating bake oven will be controlled by afterburner unit. The operation of the facility is expected to comply with all the District and federal requirements.

Rexam Beverage Can Co. was previously operated under American National Can Company (name change only) and it is a RECLAIM and Title V facility. A Title V renewal permit was issued to this facility on October 6, 2004. The proposed permit revision is considered as a "minor permit revision" to the renewed Title V permit, as described in Regulation XXX evaluation.

## PROCESS DESCRIPTION

The company is in the business of manufacturing cans for the beverage companies, such as Coca-Cola, Pepsico, etc. Rules 1125 and 1171 apply to this facility. The following steps are involved in the can manufacturing process.

1. Small cups are formed on Cupper units from aluminum sheet metal.
2. Cups are transformed into can bodies in the Body-makers by extrusion method. The trimmer trims the excess material off the cans.
3. Cans are cleaned in the acid baths in washer unit to remove lubricants and oxide film layers.
4. Cans are washed in the weak acid bath followed by de-ionized water rinse in the washer lines.
5. Cans are dried in the dryers to remove the moisture.
6. Cans pass through roller-coaters to apply a high-solids water-based white basecoat on the outside of the cans. Basecoat is not required on all the cans.
7. Basecoat is cured in a pin-oven.
8. A decorative ink print and over-varnish is applied on the printer unit.
9. Bottom varnish is applied on the bottom varnish unit.
10. Printing inks and the varnish are cured in a pin-oven.
11. Inside of the cans are spray coated with a coating. A set of six to eight spray stations are generally located in a can manufacturing line. This coating is applied to provide a protective barrier between a product and the cans.
12. A bake oven cures the inside coating.
13. Can bodies are necked and flanged.
14. Inside coating is light-tested for 100% coverage.
15. Cans are palletized automatically for shipping ready.

The new regenerative thermal oxidizer (RTO) will be capable of processing 50,000 SCFM contaminated air for VOC emission control from the coating equipment and ovens. RTO is designed to destroy 95% collected VOCs from the contaminated process air. With the collection efficiency varying for different equipment, overall VOC control efficiency varies for different processes. The equipment initially is heated to about $1600^0$ F by a burner, which supplies heat to the ceramic media. This media is located in two process zones. The process air gets heat from a ceramic bed and further heat from the VOCs or the gas injection . The heated process air then passes through another ceramic media zone and releases heat to that media. Most of the time the incoming air contains sufficient concentrations of VOCs to act as a fuel. The equipment has gas injection system to maintain the temperature of the combustion zone. The thermal energy recovery rate is about 95% in this heat exchange process. A rotating valve switches the air direction between the two beds on a nominal 3 minute cycle time. The chambers thus get alternated continuously.

The coatings applied in this process and the clean-up solvents used will comply with Rule 1125 and 1171 with adequate control device efficiency.

## OPERATING HOURS

Average : 24 hour/day, 7 day/week, 52 weeks/year
Maximum: 24 hour/day, 7 days/week, 52 weeks/year

## EMISSION CALCULATIONS

Application No. 460988 (Afterburner)

**RTO DESIGN**

| | |
|---|---|
| Total maximum contaminated process flow rate: | 25000 scfm |
| Design capacity of the control equipment: | 50000 scfm |
| Inlet operating temperature | $70^0$ F |
| Outlet operating temperature from combustion chamber | $1600^0$ F |
| Heat exchanger efficiency: | 95% |
| Heat Input Rating of the burner for initial heating of the media | 9.7 mm BTU/HR |
| Heat required during the normal working load | nil |
| Volume of the combustion zone | 2650 $ft^3$ |

## Heat required to heat air from 70 $^0$F to 1600 $^0$F(worst case)

M = 50,000 scfm x 0.075 lb/scf x 60 min/hr = 225,000 lb/hr

$Cp_{70}$ = 0.240 Btu/lb $^0$F  $Cp_{1600}$ =0.275 Btu/lb $^0$F
$Cp_{avg}$ = 0.258 Btu/lb $^0$F

Q = MCp $\Delta$T
= 225000 x 0.258 x (1600 - 70)
= 88.82 MM Btu/hr

**After 95% heat recovery**

Q= 88.82 x 0.05 = 4.44 MM Btu/hr

Heat input needed: 4.44 X 1050/615 = 7.58 mm BTU/HR. (Table D7, Page 948, AP 40.)

This being a RTO, no excess air is necessary for most of the time during the oxidation of the VOC. Contaminated airflow is sufficient to provide the necessary air. The applicant will use the burner to start-up the RTO only. The natural gas injection and the VOCs will maintain the temperature in the combustion chamber. The RTO will have a burner rated at 9.7 x $10^6$ Btu/hr for start-up, which is sufficient to fire-up the RTO. The permit condition will require a source test upon completion of the installation, which will prove the design capacity.

**Residence time calculation**

Total flow rate = 50,000 cfm
Flow rate per minute = 50000 cfm / 60 sec/min = 833 cfs
Corrected volume = 833 cfs x 2060/ 530 = 3238 cfs (1600 $^o$F to 70 $^o$F)
Afterburner combustion zone volume = 2650 cubic feet
Residence time = 2650 / 3238 = 0.82 sec  (greater than 0.3 sec recommended - OK)

For calculation of combustion emissions, 180 minutes will be the maximum daily usage for the RTO start-up operations. The RTO will be equipped with a Maxon Kinemax LE burner with 30 ppm NOx emissions @ 3% $O_2$. Please see following table for combustion emission calculations.

## Afterburner (RTO)

@

| | maximum | normal | | |
|---|---|---|---|---|
| hr/dy | 3 | 3 | max heat input | 9.70E+06 (BTU/hr) |
| dy/wk | 7 | 7 | gross heating value | 1050 (BTU/scf) |
| wk/yr | 52 | 52 | | |
| load | 100% | 100% | | |

| | Emission Factors | MAX (lb/hr) | AVE (lb/hr) | MAX (lb/dy) | 30-DAY (lb/dy) | MAX (lb/yr) | MAX (ton/yr) |
|---|---|---|---|---|---|---|---|
| $SO_2$ (R1) | 0.6 | 0.006 | 0.006 | 0.017 | NA | 6 | 0.003 |
| $SO_2$ (R2) | 0.6 | 0.006 | 0.006 | 0.017 | 0.017 | 6 | 0.003 |
| $NO_2$ (R1) | 38.94 | 0.360 | 0.360 | 1.079 | NA | 393 | 0.196 |
| $NO_2$ (R2) | 38.94 | 0.360 | 0.360 | 1.079 | 1.079 | 393 | 0.196 |
| CO (R1) | 80 | 0.739 | 0.739 | 2.217 | NA | 807 | 0.404 |
| CO (R2) | 80 | 0.739 | 0.739 | 2.217 | 2.217 | 807 | 0.404 |
| $N_2O$ (R1) | 2.2 | 0.020 | 0.020 | 0.061 | NA | 22 | 0.011 |
| $N_20$ (R2) | 2.2 | 0.020 | 0.020 | 0.061 | 0.061 | 22 | 0.011 |
| PM, $PM_{10}$ (R1=R2) | 7.5 | 0.069 | 0.069 | 0.208 | 0.208 | 76 | 0.038 |
| $CO_2$(R1=R2) | 0.000012 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 0.000 |
| TOC(R1=R2) | 7 | 0.065 | 0.065 | 0.194 | 0.194 | 71 | 0.035 |
| ethyle benzene | 0.0095 | 8.8E-05 | 8.8E-05 | 2.6E-04 | NA | 9.58E-2 | 4.79E-5 |
| acetaldchyde | 0.0043 | 4.0E-05 | 4.0E-05 | 1.2E-04 | NA | 4.34E-2 | 2.17E-5 |
| acrolein | 0.0027 | 2.5E-05 | 2.5E-05 | 7.5E-05 | NA | 2.72E-2 | 1.36E-5 |
| benzene | 0.008 | 7.4E-05 | 7.4E-05 | 2.2E-04 | NA | 8.07E-2 | 4.04E-5 |
| formaldehyde | 0.017 | 1.6E-04 | 1.6E-04 | 4.7E-04 | NA | 1.71E-1 | 8.57E-5 |
| napthalene | 0.0003 | 2.8E-06 | 2.8E-06 | 8.3E-06 | NA | 3.03E-3 | 1.51E-6 |
| PAH's | 0.0001 | 9.2E-07 | 9.2E-07 | 2.8E-06 | NA | 1.01E-3 | 5.04E-7 |
| toluene | 0.0366 | 3.4E-04 | 3.4E-04 | 1.0E-03 | NA | 3.69E-1 | 1.85E-4 |
| xylenes | 0.0272 | 2.5E-04 | 2.5E-04 | 7.5E-04 | NA | 2.74E-1 | 1.37E-4 |

| | | | | | |
|---|---|---|---|---|---|
| $NO_2$ @ 3% excess $O_2$ ----->>> | 30.00 | (ppmv) | $SO_2$ @ 3% excess $O_2$ ----->>> | 0.33 | (ppmv) |
| CO @ 3% excess $O_2$ ----->>> | 101.23 | (ppmv) | PM @ 12% $CO_2$ ----->>> | 5.5E-09 | (grain/$ft^3$) |

Ver. 1.3

The new larger RTO unit with 9.7 mm BTU/HR heat input starter burner will replace two smaller afterburner units of 3.5 mm BTU/HR and 8.0 mm BTU/HR heat input. Also, one of these old oxidizers (with 8 mm BTU/HR heat input) is a direct fired afterburner. Thus, there will be reduction in combustion emissions under this project.

The manufacturer guaranteed NOx emissions to be less than 30 ppm at 3% oxygen level between 2.5 mmBtu/hr to 9.7 mm Btu/hr for BACT compliance. A permit condition will be imposed to use the burner only between 2.5 to 9.7 mmBtu/hr, during the start-up operation for the BACT compliance.

There will be additional process NOx emissions from this operation. NOx emissions of 1 ppm maximum from the oxidation of the contaminated air inflow is expected from this operation. The NOx lbs/hr is calculated as follows.

Lbs/hr = PPM X MW X 60 X SCF / 379 X $10^6$
= 1 X 46 X 60 X 50,000 / 379 X 1000000
= 0.36

In a day maximum 3.0 hrs will be for the start-up burner operation with 1.08 lb NOx emission. Hence, 24 – 3 = 21 hrs for the process NOx emissions @ 0.36 lb/hr.

Total NOx emission in a day = [0.36 x 21] + 1.08 =8.64 lbs/day. (0.36 lbs/hr)

There will not be any emission increases from the facility or any individual basic equipment under this project. Hence previous emissions will be re-entered for all other administrative change applications.

Toxic Compound Emissions and Risk Assessment

A Tier 2 Risk Assessment was performed to determine the health risk from the toxic air contaminants emitted from the RTO due to combustion of natural gas. The assessment calculated a cancer risk of 0.193 in a million (1.93E-07) for the residential receptor and 0.0489 in a million (4.89E-08) for a commercial receptor. The assessment also calculated both acute and chronic hazard index risks and all the risks were below 1. Thus, the Tier 2 risk assessment demonstrated compliance with the Rule 1401 requirements.

**Application Nos. 498284/5/6/7/8/9/90/8, 501025/6**

These are administrative change applications only. Previous permit application emission data will be re-entered for these applications.

## RULES/REGULATION EVALUATION

¤ ***RULE 212, PUBLIC NOTIFICATION***

v ***SECTION 212(c)(1):***

This section requires a public notice for all new or modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school. This source is not located within 1,000 feet from the outer boundary of a school. Therefore, public notice will not be required by this section.

v ***SECTION 212(c)(2):***

This section requires a public notice for all new or modified facilities which have on-site emission increases exceeding any of the daily maximums as specified in subdivision (g). This is a replacement equipment with reduction in combustion emissions. Thus, as shown in the following table, the emission increases from this facility are below the daily maximum limits specified by Rule 212(g). Therefore, this application will not be subject to this section.

| LB/DAY | CO | NOX | $PM_{10}$ | ROG | SOX | Pb |
|---|---|---|---|---|---|---|
| MAX. LIMIT | 220 | 40 | 30 | 30 | 60 | 3 |
| INCREASES | 0 | 0 | 0 | 0 | 0 | 0 |

v ***SECTION 212(c)(3):***

There is no toxic emission increase from the use of coatings in this equipment since the VOC cap will remain the same. The small quantity of toxics from the combustion of natural gas in the start-up burner results in MICR below 1 in a million. Therefore, this application will not be subject to this section.

v ***SECTION 212(g):***

This section requires a public notice for all new or modified sources which undergo construction or modifications resulting in an emissions increase exceeding any of the daily maximum specified in the table below. As shown in the following table, the emission increases from this project are below the daily maximum limits specified by Rule 212(g). Therefore, public notice will not be required by this section.

| LB/DAY | CO | NOX | $PM_{10}$ | ROG | SOX | Pb |
|---|---|---|---|---|---|---|
| MAX. LIMIT | 220 | 40 | 30 | 30 | 60 | 3 |
| INCREASES | 1 | 5 | 0 | 0 | 0 | 0 |

¤ ***RULES 401 & 402, VISIBLE EMISSIONS & NUISANCE***

AQMD database has no records of any visible emissions or nuisance violations against this company in the last two years.

¤ ***RULE 1125( c)1), METAL CONTAINER, CLOSURE, AND COIL COATING OPERATIONS***

The applicant is in compliance with these requirements by using inks and coatings with the following VOC content less water and exempt compounds. (Information obtained from the previous evaluation.)

| Coating Type | Material Used | Rule VOC Limit (gram/liter) | VOC as applied (gram/liter) | Compliance |
|---|---|---|---|---|
| Base coat | PPG/CE3780-1 | 2.1 | 1.8 | Yes |
| Overvarnish | PPG/CC3625XLV | 2.1 | 2.1 | Yes |
| Bottom Varnish | PPG/3655 | 2.1 | 2.1 | Yes |
| Interior Spray | Valspar 4020 Formerly ECODEX | 3.7 | 2.49 | Yes |
| Inks | INX Inks | 2.5 | 2.5 | Yes |

¤ ***RULE 1125( c)(4),, METAL CONTAINER, CLOSURE, AND COIL COATING OPERATIONS***

The applicant has an approved transfer efficiency equivalency plan on file to comply with these requirements.

¤ ***REGULATION IX, NSPS, SUBPART WW, METAL CONTAINER, CLOSURE, AND COIL COATING OPERATIONS***

The applicant will be in compliance with these requirements by using coatings with the following VOC content. (Information obtained from the previous evaluation.)

| Coating Type | Material Used | Rule VOC Limit (kg/l solids) | VOC as applied (kg/l solids) | Compliance |
|---|---|---|---|---|
| Base coat | PPG/CE3780-1 | 0.29 | 0.28 | Yes |
| Overvarnish | PPG/CC3625XLV | 0.46 | 0.35 | Yes |
| Bottom Varnish | PPG/3655 | 0.46 | 0.34 | Yes |
| Interior Spray | Valspar 4020 Formerly ECODEX | 0.89 | 0.75 | Yes |

¤ ***RULE 1171, EMISSIONS FROM CLEAN-UP SOLVENTS***

¤ ***RULE 1171, SOLVENT CLEANING OPERATIONS***

Clean-up materials to be used on the coater, spray stations and printer comply with the Rule requirements. (Information obtained from the previous evaluation.)

| Material Used | Method Of Cleaning | Rule VOC (gm/liter) | VOC as Applied (gm/liter) | Compliance |
|---|---|---|---|---|
| Freedom Kleen | Hand-wipe | 100 | 96 | Yes |
| By pas 1500 | Hand-wipe | 25 | 0 | Yes |

***REGULATION XIII***

⊙ ***RULE 1303(a), BEST AVAILABLE CONTROL TECHNOLOGY (BACT)***

(a) VOC EMISSIONS

The proposed regenerative thermal oxidizer with a 9.7 mm BTU/HR burner will be used to replace an existing direct-flame afterburner with 4.0 mm BTU/HR burner and a RTO with 3.5 mm BTU/HR burner. The regenerative thermal oxidizer is expected to achieve a minimum destruction efficiency of 95%. In addition, the regenerative thermal oxidizer is expected to result in a net decrease in all criteria pollutant emissions. Therefore, compliance with BACT requirements is expected.

The proposed regenerative thermal oxidizer (RTO) will replace existing direct-flame afterburner and one smaller size RTO unit. The same VOC emissions will be vented to a new efficient air pollution control system with no increase in the VOC emissions. This will comply with the provisions of the current BACT requirements.

(a) NOx EMISSIONS

The RTO burner will be used for start-up operation only to get the bed up to 1600 degrees F. Thus, NOx emissions are expected to be <0.5 lb/day with the usage of the burner for <120 minutes/day. A permit condition to automatically monitor and record the burner usage time will show compliance with this time limit.

The RTO burner will be used for start-up operation only to get the bed up to $1600^0$ F. Thus, NOx emissions are expected to be <1 lb/day with the usage of the burner for <504 minutes/day. A permit condition to automatically monitor and record the burner usage time will show compliance with this time limit.

¤ ***RULE 1303(b)(1), MODELING***

The Tier III modeling of the NOx emissions from the afterburner unit for the worst case receptor indicated 7.05 $\mu g/m^3$ concentration for 1 hour (<20 $\mu g/m^3$ ) and 0.564 $\mu g/m^3$ concentration annually (<1 $\mu g/m^3$ ). Thus, afterburner unit complies with the modeling requirements.

¤ ***RULE 1303 (b)(2), EMISSION OFFSETS***

Rexham Inc, holds sufficient RTCs to offset the NOx emission increase. All other criteria pollutants are <0.5 lb/day.

***RULE 1303(b)(1), MODELING***

Modeling is not required since PM10, NOx and CO emissions are below the Table A-1 allowable emissions.

| NOx (lbs/hr) | | PM10 (lbs/hr) | | CO (lbs/hr) | |
|---|---|---|---|---|---|
| Allowed | Actual | Allowed | Actual | Allowed | Actual |
| 0.31 | 0.119 | 1.9 | 0.017 | 17.1 | 0.36 |

## REGULATION XXX

This facility is in the RECLAIM program. The proposed project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants or hazardous air pollutants (HAPs), and a "minor permit revision" for RECLAIM pollutants to the RECLAIM/Title V permit for this facility.

Non-RECLAIM Pollutants or HAPs

Rule 3000(b)(6) defines a "de minimis significant permit revision" as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or HAPs from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

| Air Contaminant | Daily Maximum (lbs/day) |
|---|---|
| HAP | 30 |
| VOC | 30 |
| NOx* | 40 |
| $PM_{10}$ | 30 |
| SOx* | 60 |
| CO | 220 |

* Not applicable if this is a RECLAIM pollutant

To determine if a project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants or HAPs, emission increases for non-RECLAIM pollutants or HAPs resulting from all permit revisions that are made after the issuance of the initial Title V permit shall be accumulated and compared to the above threshold levels. This proposed project is the 1st permit revision to the renewed Title V permit issued to this facility on October 6, 2009. The following table summarizes the cumulative emission increases resulting from all permit revisions since the initial Title V permit was issued:

| Revision | HAP | VOC | NOx* | $PM_{10}$ | SOx | CO |
|---|---|---|---|---|---|---|
| 1st Permit Revision. Add device C75 (P/C, New construction and permit condition change of D6, D14, D19, D20, D21, D48, D18, D70, C71, C55 (P/Cs) D43 and D44 (P/Os). | 0 | 0 | 9 | 0 | 0 | 0 |
| Total | 0 | 0 | 9 | 0 | 0 | 4 |
| Maximum Daily | 30 | 30 | 40 | 30 | 60 | 220 |

* RECLAIM pollutant, not subject to emission accumulation requirements

Since the cumulative emission increases resulting from all permit revisions are not greater than any of the emission threshold levels, this proposed project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants or HAPs.

RECLAIM Pollutants

Rule 3000(b)(12)(A)(v) defines a "minor permit revision" as any Title V permit revision that does not result in an emission increase of RECLAIM pollutants over the facility starting Allocation plus nontradeable Allocations, or higher Allocation amount which has previously undergone a significant permit revision process.

Since NOx is a RECLAIM pollutant for this facility, a separate analysis shall be made to determine if the proposed permit revision is considered a "minor permit revision" for RECLAIM pollutants. Section B of the Title V permit shows that this facility's NOx starting Allocation plus the non-tradable Allocation is 28,756 pounds. The proposed project is expected to result in an increase of 9 lbs/day (3285 lbs/year) of NOx emissions from this permit revision, less than the starting Allocation plus the non-tradable Allocations of 28756 pounds. As a result, this proposed project is considered as a "minor permit revision" for RECLAIM pollutants.

## RECOMMENDATION

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants or hazardous air pollutants (HAPs), and a "minor permit revision" for RECLAIM pollutants, it is exempt from the public participation requirements under Rule 3006(b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not have any objections within the review period, a revised Title V/RECLAIM permit will be issued to this facility.