

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION	Page 1	Page 6
	A/N(s) 560822, 561601	Date 6/20/14
	Processed by JPV	Reviewed by

APPLICANT'S NAME: MERCURY PLASTICS INC.

MAILING ADDRESS: 14849 SALT LAKE AVENUE
INDUSTRY, CA 91746

EQUIPMENT LOCATION: SAME AS ABOVE

COMPANY ID. NO.: 58563

EQUIPMENT DESCRIPTION:

Application no. 563673 (Title V Permit Revision)

TITLE V PERMIT REVISION, DE MINIMIS SIGNIFICANT.

Application no. 561601 (Title V Permit Revision) - CANCEL

TITLE V PERMIT REVISION, DE MINIMIS SIGNIFICANT – cancel, include under A/N 563673

Application no. 560822 (PC, Modification to A/N 534716, PO #G17691)

MODIFICATION TO THE AIR POLLUTION CONTROL SYSTEM UNDER P/O G17691 (A/N 534716) CONSISTING OF:

1. REGENERATIVE THERMAL OXIDIZER #1, REOXIDIZER, TELLKAMP SYSTEMS, MODEL NO. 10, 9'-6" W. X 23'-0" L. X 12'-8" H., WITH A 1,600,000 BTU PER HOUR NATURAL GAS FIRED START-UP BURNER, A 3 HP. COMBUSTION AIR BLOWER, TWO HEAT EXCHANGER BEDS WITH CERAMIC SADDLES, AND A STANDBY NATURAL GAS INJECTION SYSTEM (MAXIMUM 1,600,000 BTU PER HOUR).
2. REGENERATIVE THERMAL OXIDIZER #2, REOXIDIZER, TELLKAMP SYSTEMS, MODEL NO. 15, 11'-0" W. X 20'-0" L. X 13'-6" H., WITH A 2,700,000 BTU PER HOUR NATURAL GAS FIRED START-UP BURNER, A 5 HP. COMBUSTION AIR BLOWER, TWO HEAT EXCHANGER BEDS WITH CERAMIC SADDLES, AND A STANDBY NATURAL GAS INJECTION (MAXIMUM 5,000,000 BTU PER HOUR).
3. EXHAUST SYSTEM, CONSISTING OF:
 - A. PERMANENT TOTAL ENCLOSURE #1, 48' W. X 25' H. X 51' L., WITH A 75 HP. EXHAUST FAN VENTING THREE FLEXOGRAPHIC PRINTING PRESSES (PRESS NOS. 7, 8 AND 9).
 - B. PERMANENT TOTAL ENCLOSURE #3, WITH A 65 HP. EXHAUST FAN VENTING ONE FLEXOGRAPHIC PRINTING PRESS (PRESS NO. 10).
 - C. ONE 20 HP. EXHAUST FAN VENTING DRYER FOR PRINTING PRESS NO. 7.
 - D. ONE 20 HP. EXHAUST FAN VENTING DRYER FOR PRINTING PRESS NO. 8.
 - E. ONE 20 HP. EXHAUST FAN VENTING DRYER FOR PRINTING PRESS NO. 9.
 - F. ONE 40 HP. EXHAUST FAN VENTING DRYER FOR PRINTING PRESS NO. 10.

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BY THE REPLACEMENT OF:

1. THE 1,600,000 BTU/HR START-UP BURNER IN RTO #1 WITH A 2,400,000 BTU/HR, MAXON, KINEDIZER LE, LOW-NOX BURNER, AND
2. THE 2,700,000 BTU/HR START-UP BURNER IN RTO #2 WITH A 2,400,000 BTU/HR, MAXON, KINEDIZER LE, LOW-NOX BURNER.

Application no. 554571 (Title V Permit Revision)

CANCELLATION – TO BE SUPERSEDED BY A/N 561601.

Application no. 554572 (PC, Modification to A/N 534716, PO #G17691)

CANCELLATION – TO BE SUPERSEDED BY A/N 560822.

HISTORY:

Mercury Plastics, Inc. submitted application no. 554572 on July 21, 2013 for a permit to construct for the modification of a natural gas-fired start-up burner on regenerative thermal oxidizer #1 (RTO #1). To comply with Rule 1147, the facility will replace the 1,600,000 BTU/hr start-up burner with a Maxon, Kinedizer LE, low-NO_x, 2,400,000 BTU/hr low-NO_x burner. The new burner has a higher rating than the one being replaced because, according to the applicant, a suitable burner of the same or lower BTU rating was not available.

It was also later determined that the start-up burner in RTO #2 needed to be replaced in order to comply with Rule 1147. The burner retrofit for RTO #1 would be incorporated into the new application, and A/N 554572 would be cancelled. The replacement burner would be the same Maxon, Kinedizer LE, low-NO_x 2,400,000 BTU/hr start-up burner. The company submitted A/N 560822 for the modification.

The facility will be required to source test both start-up burners prior to the issuance of a permit to operate in order to demonstrate that the new burners can meet the NO_x emission requirement of 60 ppm (>1200°F), per Rule 1147(c)(1).

The facility also submitted A/N 561601 for the Title V permit revision since this facility is in the Title V program. This application would supersede A/N 554571 (to be cancelled), which was previously submitted as the Title V permit revision along with A/N 554572. The previous Title V renewal facility permit was issued on May 6, 2012. This permit revision is the 2nd revision since this last Title V renewal. Also included with this revision is the addition of a new heatset flexographic printing press and RTO (under separate evaluation A/Ns 563674-5).

This facility has not been issued a notice of violation in the past two years. However, one notice to comply, NC #E20883, was issued in April 2, 2013 to provide daily and monthly VOC records during 2012, daily gas usage for ovens, and 4/1/13 records for start-up temperature. According to enforcement reports, the case was closed on 4/25/13. No complaints have been issued against this facility in the past two years.

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PROCESS DESCRIPTION:

This company manufactures plastic bags from pellets; the bags are used for frozen foods, fertilizers, and trash bags. The plastic bags are manufactured onsite, and then cooled prior to printing in the flexographic press. Once printed, the web of plastic is perforated to form tear-off serrations. The web of bags is then wound up to rolls. This air pollution control system is used to vent four heat-set printing presses within two separate permanent total enclosures. The average operating hours of the facility will be 24 hours/day, 4 days/wk and 52 weeks/year and the maximum operating time is 24 hrs/day, 5 days/wk and 52 wks/yr.

EMISSION CALCULATIONS:

The two replacement low-NO_x 2.4 mmBTU/hr start-up burners have a combined higher BTU/hr rating, but lower NO_x emissions than the combined existing 1.6 mmBTU/hr (RTO #1) and 2,700,000 BTU/hr burners (RTO #2). Because of the higher combined burner rating, there will be an increase in CO, PM₁₀ and SO_x emissions. The combined NO_x emissions will decrease by 8.55 lb/day. The emissions were calculated using spreadsheets, which are in this file as Attachments 1 and 2. See the emissions summary table below.

Summary of Emission Increases/Decreases Compared to Previous Permit to Operate

A/N	Burner rating (BTU/hr)	NO _x Emissions		CO Emissions		PM ₁₀ Emissions		ROG Emissions	
		(lb/hr)	(lb/day)	(lb/hr)	(lb/day)	(lb/hr)	(lb/day)	(lb/hr)	(lb/day)
560822	2,400,000 (RTO #1)	0.088	2.11	0.442	10.61	0.017	0.41	0.016	0.38
	and 2,400,000 (RTO #2)	0.088	2.11	0.442	10.61	0.017	0.41	0.016	0.38
Post-modification total		0.176	4.22	0.884	21.22	0.034	0.82	0.032	0.76
534716 (previous permit) ^(b)	1,600,000 (RTO #1)	0.198	4.75	0.053	1.28	0.011	0.27	0.011	0.26
	and 2,700,000 (RTO #2)	0.334	8.02	0.090	2.16	0.019	0.46	0.018	0.43
Pre-modification total		0.532	12.77	0.143	3.44	0.030	0.73	0.029	0.69
Difference		-0.36	-8.55	+0.741	+17.78	+0.004	+0.09	+0.003	+0.07

Notes: (a) R1 = R2.

(b) NSR associated with A/N 534716 updated to reflect emissions based on updated emission factors.

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RULES AND REGULATIONS

RULE 212, SIGNIFICANT PROJECT PUBLIC NOTIFICATION

A public notice will be required if one or more of the criteria is met:

- a. this equipment is located within 1000 feet of a school
- b. the increase in emissions exceeds the limits in subdivision (g), or
- c. the toxic emissions result in an MICR of more than one in a million on a worst-case basis.

However, a public notice is not required for this project since the equipment is not within 1000 feet of a school, there will be no significant increase in emissions [below Rule 212(g) thresholds], and the increase in MICR due to the increase in burner BTU rating was $<1 \times 10^{-6}$ ($\leq 4.6 \times 10^{-8}$ actual).

RULE 401, VISIBLE EMISSIONS

Visible emissions from the operation of this equipment are not expected. No notices of violation, or complaints have been issued in the past two years for nuisance. One notice to comply was issued in the past two years but it was not related to visible emissions.

RULE 402, NUISANCE

The operation of this equipment is expected to comply with this rule. Operation of the replacement natural gas-fired burners is not expected to result in any odors. No notices of violation, or complaints have been issued in the past two years for nuisance. One notice to comply was issued in the past two years but non-nuisance related.

RULE 407: LIQUID AND GASEOUS AIR CONTAMINANTS

This equipment is required to emit carbon monoxide (CO) not to exceed 2000 ppmv, measured on a dry basis, averaged over 15 consecutive minutes. The facility will be required to source test both start-up burners prior to the issuance of a permit to operate in order to demonstrate compliance with this requirement and Rule 1147 NO_x limits. The new burners are guaranteed by the manufacturer to meet 250 ppmv CO @ 3% O₂. See letter in this file (A/N 560822).

RULE 1147: NO_x REDUCTIONS FROM MISCELLANEOUS SOURCES

Both start-up burners on RTO #1 and #2 will be replaced by low-NO_x, natural gas-fired, Maxon, Kinedizer LE, 2,400,000 BTU/hr burners. Prior to issuance of a permit to operate, the facility will be required to source test both burners to demonstrate that the new burners can meet the NO_x emission requirement of 60 ppm [per Rule 1147(c)(1)]. According to the manufacturer, the Kinedizer LE burner should produce ≤ 30 ppmv NO_x @ 3% O₂. See letter in this file (A/N 560822). Compliance is expected.

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REGULATION XIII:

BACT: There will be a net decrease in NO_x emissions, and no net increase of more than 1 lb/day of PM₁₀ or ROG emissions as a result of the burner replacements. BACT is not triggered for NO_x, PM₁₀ and ROG. There is an increase in CO of 17.8 lb/day since the new burner is slightly larger than the existing burner. CO emissions are expected to meet ≤250 ppmv of CO @ 3% O₂. Compliance is expected.

Offsets: Since the new start-up burners are low-NO_x, there will be a decrease in NO_x emissions even though the total combined BTU rating will be higher. There is a slight increase in PM₁₀ and ROG due to the increase in BTU rating of the new burner. However, since these emission increases are <0.50 lb/day, offsets are not required. The CO increase is 17.8 lb/day but offsets are not required since the District is in attainment for CO.

Modeling: There will be a decrease of NO_x emissions from this project. The maximum CO and PM₁₀ emission increases will be much below the maximum allowable CO and PM₁₀ emissions for combustion sources <2 mmBTU/hr (Table A-1). See the summary table below. Therefore, no further modeling is required.

Summary of Maximum Emission Increases for Project Modeling Analysis

Burner Rating, (mmBtu/hr)	NO _x Emissions		CO Emissions		PM ₁₀ Emissions	
	Calculated (lb/hr)	Allowed (lb/hr)	Calculated (lb/hr)	Allowed (lb/hr)	Calculated (lb/hr)	Allowed (lb/hr)
<2 (increase)	-0.36	+0.20	+0.74	11.0	+0.004	1.2

RULE 1401, MAXIMUM INDIVIDUAL CANCER RISK ASSESSMENT

There will not be a significant increase in health risk as a result of the burner modifications. The MICR increase due to the 500,000 BTU/hr combined increase in burner rating is expected to be <<1 x 10⁻⁶ (≤4.6 x 10⁻⁸, actual). The HIA/HIC will be <<1.0. See attached emission calculations and screening risk assessment spreadsheets. Therefore, compliance with this rule is expected.

REG XXX, TITLE V

This facility is not in the RECLAIM program. This project is considered as a “de minimis significant permit revision” to the last Title V permit renewal, issued to this facility on May 6, 2012. Rule 3000 (b)(6) defines a “de minimis significant permit revision” as any Title V permit revision where the cumulative emission increases on non-RECLAIM pollutants or hazardous air pollutants (HAP) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

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 hazardous air pollutants (HAPs) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

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Air Contaminant	Daily Maximum (lbs/day)
HAP	30
VOC	30
NO _x	40
PM ₁₀	30
SO _x	60
CO	220

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 Title V renewal permit shall be accumulated and compared to the above threshold levels. This proposed project is the 2nd permit revision since the Title V renewal issued to this facility on May 6, 2012. The following table summarizes cumulative emission increases resulting from this permit revision.

	Revision	HAP	VOC	NO _x	PM ₁₀	SO _x	CO
1 st revision	Addition of a new flexographic printing press, PC-PO A/N 550631	0	0	0	0	0	0
2 nd revision	Replacement of burners in RTO #1 and RTO #2 with low-NO _x burner, PC A/N 560822	0	0	-9	0	0	18
	New construction of RTO #3 and heat-set flexographic printing press with dryer, PC A/N 563674-563375	0	0	8	1	0	42
	Cumulative Total	0	0	-1	1	0	60
	Maximum Daily	30	30	40	30	60	220

RECOMMENDATIONS:

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”, 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 permit will be issued to the facility (Section D) with a Permit to Construct for this modification.