

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>ENGINEERING AND COMPLIANCE DIVISION</b>  <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE 1	PAGES 5
	APPL. NO. Zinc Furnace	REVISED DATE 07/24/08
	PROCESSOR MFN	REVIEWER DR/HW

**EQUIPMENT RELOCATION, MODIFICATION AND  
CHANGE OF CONDITION ANALYSIS**

**FACILITY MAILING ADDRESS**

Light Metals, Inc.  
13329 Ector Street  
City of Industry, CA 91746

(ID: 083102 - NOx RECLAIM Cycle 2 - Title V)

**EQUIPMENT LOCATION**

Same as above

**EQUIPMENT DESCRIPTION**

**APPLICATION NO.: 475489 FACILITY PERMIT MODIFICATION**

**APPLICATION NO.: 475490 EQUIPMENT RELOCATION-CANCEL**

PROCESS 2: MELTING OPERATIONS

SYSTEM 2: ZINC ALLOYING

D53: FURNACE, #Z, ZINC ALLOYING, JAY THERMAL, REVERBERATORY TYPE, 48,000 POUNDS CAPACITY, 7'-4" W. X 15'-6" L. X 7'-7" H., WITH 2,100,000 BTU PER HOUR NATURAL GAS FIRED BURNER.

**APPLICATION NO.: 475491 CHANGE OF CONDITION - CANCEL**

PROCESS 2: MELTING OPERATION

SYSTEM 1: ALUMINUM MELTING

D21: FURNACE, #B, ALUMINUM MELTING, REVERBERATORY TYPE, MODEL M30-CDS-C/2, 180,000 POUNDS CAPACITY, TWO BOC FLAT JET TYPE, LOW NOx BURNERS, 16,000,000 BTU PER HOUR TOTAL, OXY-FUEL, WITH ONE 20-HP COMBUSTION AIR BLOWER, AND ONE 20-HP METALLICS CIRCULATION/CHLORINE INJECTION PUMP.

**APPLICATION NO.: 475492 CHANGE OF CONDITION - CANCEL**

PROCESS 6: ALUMINUM HOLDING OPERATION

D42: FURNACE, ALUMINUM HOLDING, REVERBERATORY TYPE, 13'-0" L. X 14'-0" W. X 9'-0" H., WITH ONE ECLIPSE COMBUSTION, MODEL 500 TJ, LOW NOX BURNER, 5,000,000 BTU PER HOUR, NATURAL GAS FIRED.

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>ENGINEERING AND COMPLIANCE DIVISION</b>  <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE 2	PAGES 5
	APPL. NO. Zinc Furnace	REVISED DATE 07/24/08
	PROCESSOR MFN	REVIEWER DR/HW

**APPLICATION NO. 475493 - EQUIPMENT MODIFICATION**  
 MODIFICATION OF AIR POLLUTION CONTROL SYSTEM, DEVICE ID C23 BY  
 REMOVING THE EXHAUST OF:  
 THE CHARGE WELL AND CHLORINATION TANKS OF FURNACE B, DEVICE ID  
 D21

**APPLICATION NO. 478854 - EQUIPMENT MODIFICATION**  
 MODIFICATION OF AIR POLLUTION CONTROL SYSTEM, DEVICE ID C50 BY  
 ADDING THE EXHAUST OF:  
 THE CHARGE WELL OF FURNACE A, DEVICE ID D11  
 THE CHARGE WELL OF FURNACE B, DEVICE ID D21  
 THE CHLORINATION TANKS OF FURNACE B, DEVICE ID D21  
 THE HEARTH OF FURNACE B, DEVICE ID D21

**HISTORY**

On November 13, 2007, Application No. 475489 was filed for a Facility Permit Modification. On November 13, 2007, Application No. 475490 was filed for a Class I equipment relocation. On November 13, 2007, Application No. 475491 was filed for a Class I equipment modification. On November 13, 2007, Application Nos. 475492 and 475493 were filed for a Class I change of condition. On February 29, 2008, Application No. 478854 was filed for a Class III equipment modification.

**Complaints:**

There have been 20 Odor Complaints in the last 2 years credited to Light Metals. Seventeen of the complaints have come from a local resident, Jorge Calderon who lives about one block northeast of Light Metals' property line.

**Notices to Comply:**

There were no Notices to Comply issued to Light Metals in the last 2 years.

**Notices of Violation:**

There were no Notices of Violation issued to Light Metals in the last 2 years.

**PROCESS DESCRIPTION**

Light Metals, Inc. is an aluminum scrap and chip remelting facility. They are located in an area that is a mixture of industrial and residential areas. Their entire northeast property line borders Torch Middle School.

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<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>ENGINEERING AND COMPLIANCE DIVISION</b>  <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE 3	PAGES 5
	APPL. NO. Zinc Furnace	REVISED DATE 07/24/08
	PROCESSOR MFN	REVIEWER DR/HW

**DISCUSSION**

Custom Alloy Light Metals (CALM) owns and operates two facilities within the AQMD: Light Metals Inc. (LMI) in the City of Industry, ID 083102 and Custom Alloy Sales (CAS) in Lynwood, ID 015982. This current application project proposed to relocate an existing permitted 2.1 MMBtu/hr Zinc Reverb Furnace from CAS to LMI. They also proposed condition changes on existing equipment at LMI which they believed would result in a “net air quality benefit” for the facility.

I informed Peter Moore of York Engineering, the consultant for CALM that the proposed condition changes along with the furnace relocation are not considered a “Contemporaneous Risk Reduction” and prior to permit issuance, public notification is required per Rule 212 (c)(1). After extensive conversations and e-mails with Peter, CALM has decided not to proceed with the zinc furnace relocation at this time. Since the zinc furnace is not being relocated, the change of condition applications for Aluminum Reverb Furnace B, device ID D21 and the Aluminum Holding Furnace, device ID D42 are no longer necessary and will be canceled per applicants’ request.

In anticipation of the zinc furnace relocation, LMI altered the venting to Baghouse 3, device ID C23 by removing Furnace B, device ID D21. Even though the zinc furnace is no longer relocating to LMI, the current configuration for Baghouse 3 will remain.

When Baghouse 6 was issued a permit to construct (P/C), July 21, 2004, under A/N 421377, it was permitted to vent only combustion gasses (the hearth exhaust) from Furnaces A & B, the charge wells were vented by Baghouses 1, 2 & 3. Baghouse 6 replaced Baghouse 5 in both purpose and function with more cloth filter area (Baghouse 6 has a cloth filter area of 33,630 ft<sup>2</sup>; Baghouse 5 had a cloth filter area of 11,280 ft<sup>2</sup>). Within 6 months of receiving the P/C for Baghouse 6, LMI decided to reconfigure the exhaust of both furnaces without benefit of permit as summarized below:

<b>Furnace</b>	<b>Exhaust Of</b>	<b>Control Was</b>	<b>Cloth Filter Area</b>	<b>Control is</b>	<b>Cloth Filter Area</b>	<b>Difference</b>
<b>A, D11</b>	Charge well	C15 & C16	21,350 ft <sup>2</sup>	C50	33,630 ft <sup>2</sup>	+ 12,280
	Hearth	C50	33,630 ft <sup>2</sup>	C15 & C16	21,350 ft <sup>2</sup>	- 12,280
	*Hearth at times	-	-	C50	33,630 ft <sup>2</sup>	Same
<b>B, D21</b>	Charge well	C23	20,274 ft <sup>2</sup>	C50	33,630 ft <sup>2</sup>	+ 13,356
	Hearth	C50	33,630 ft <sup>2</sup>	C50	33,630 ft <sup>2</sup>	Same

\* Hearth to Furnace A is vented to Baghouse 6 only when Furnace B is shut down and additional heat is needed in Baghouse 6. Without sufficient heat, the baghouse may get condensation which will clog the bags.

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>ENGINEERING AND COMPLIANCE DIVISION</b>  <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE 4	PAGES 5
	APPL. NO. Zinc Furnace	REVISED DATE 07/24/08
	PROCESSOR MFN	REVIEWER DR/HW

**EVALUATION**

**Given: C50**

Operating schedule – 24 hrs/day, 7 days/wk, 52 wks/yr  
Maximum flowrate – 53,800 acfm  
Total cloth filter area – 33,630 ft<sup>2</sup>  
Net cloth filter area, during maintenance and repair – 26,804 ft<sup>2</sup>

Air to Cloth ratio – 53,800 acfm/33,630 ft<sup>2</sup> = 1.60 ft/min  
Air to Cloth ratio – 53,800 acfm/26,804 ft<sup>2</sup> = 2.0 ft/min (Worse case)

Air to Cloth ratio of 2.0 is acceptable for a fabric baghouse with a mechanical shaker cleaning system.

**C23**

Operating schedule – 24 hrs/day, 7 days/wk, 50 wks/yr  
Maximum flowrate – 20,768 acfm  
Total cloth filter area – 20,160 ft<sup>2</sup>

Air to Cloth ratio – 20,768 acfm/20,160 ft<sup>2</sup> = 1.03 ft/min

Air to Cloth ratio of 1.03 is acceptable for a fabric baghouse with a mechanical shaker.

**RULES COMPLIANCE**

**RULE 212:** Public Notification

**Paragraph 212 (c)(1)** 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. Even though Torch Middle School and LMI share a property line, there is no emission increase associated with these modifications. A 30-Day Public Notice is not required under this paragraph.

**Paragraph 212(c)(2)** The equipment will not result in on-site emission increase exceeding the daily maximums as specified in the table in Rule 212(g). Therefore, a 30-day public notice period will not be required under this paragraph.

**Paragraph 212(c)(3)** Public notice will not be required under this paragraph. There is no increase of toxic emissions associated with these modifications.

**RULE 401:** Compliance is expected. Visible emissions are not expected from proper operation of this equipment.

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<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>ENGINEERING AND COMPLIANCE DIVISION</b>  <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGE	PAGES
	5	5
	APPL. NO.	REVISED DATE
	Zinc Furnace	07/24/08
	PROCESSOR	REVIEWER
	MFN	DR/HW

**RULE 402:** Compliance is expected. Nuisance is not expected if equipment is properly operated and maintained.

**REG XIII/XX:** BACT for an Aluminum Melting Furnace is natural gas combustion for NOx and SOx and for PM<sub>10</sub> it is ingot, non-contaminated scrap or a baghouse in addition to natural gas combustion. The furnaces meet the BACT requirements.

**RULE 1407:** The combustion chamber of the furnaces are exempt per (i)(4) of this rule.

**REG XXX:** This is a minor permit revision. EPA 45-day review is required.

**Subpart TTTTTT:** The Zinc Alloy Ingot manufacturing as proposed by LMI is not subject to 40 CFR 63 Subpart TTTTTT, Secondary Nonferrous Metals Processing. LMI uses pure zinc ingot and clean aluminum scrap to manufacture zinc alloy ingot, which is not subject to this standard.

**Subpart RRR:** LMI is a Secondary Aluminum Production company and subject to 40 CFR 63 Subpart RRR. Even though LMI did not apply for an equipment modification prior to reconfiguring the exhaust of the furnaces, they did get approval from EPA Region 9 for the reconfiguration and performed the required testing. LMI's compliance status has not changed.

**RECOMMENDATION**

Furnace Z, D53, A/N 475490

Cancel Permit to Construct application per applicants' request.

Furnace B, D21, A/N 475491

Cancel Change of Condition application per applicant's request.

Holding Furnace, D42, A/N 475492

Cancel Change of Condition application per applicant's request.

Baghouse 3, C23, A/N 475493

Issue Modification Permit, PO no PC.

Baghouse 6, C50, A/N 478854

Issue PO no PC permit.