

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATION

Page 1 of 4

Date: 08/16/11

A/P: See Page 1

PROCESSED BY: MS

CHECKED BY: DR

PERMIT TO CONSTRUCT EVALUATION

Applicant name: Mizkan Americas, Inc.

(FACILITY ID# 39855)

Mailing address: 10037 E. 8th St.
Rancho Cucamonga, Ca 91730

Equipment Location: same

EQUIPMENT DESCRIPTION:

APPLICATION NO. 517959

BOILER, FULTON, VERTICAL TUBELESS STEAM TYPE, MODEL NO. VMP100, 3,985,000 BTU PER HOUR, WITH A FULTON NATURAL GAS FIRED LOW NO_x BURNER, AND A 7.5 H.P. COMBUSTION AIR BLOWER

APPLICATION NO. 517962

BOILER, FULTON, VERTICAL TUBELESS STEAM TYPE, MODEL NO. VMP100, 3,985,000 BTU PER HOUR, WITH A FULTON NATURAL GAS FIRED LOW NO_x BURNER, AND A 7.5 H.P. COMBUSTION AIR BLOWER

APPLICATION NO. 517961

Title V Permit Revision

BACKGROUND:

Mizkan Americas, Inc. is a Title V company that produces a variety of vinegars (5 – 15% acetic acid), including white distilled, red wine, white wine, rice, and other specialty flavored vinegars, for use in industrial and retail food sales.

On 01/04/11, the facility submitted A/N's 517959 and 517962 for Permit to Construct two identical Fulton Boilers, Model VMP-100, 3.985 MMBtu/hr. The two boilers are functional identical replacements. The two boilers are replacing existing boilers (A/N 280462, Permit No. D91178 and A/N 324051, Permit No. F5859). Upon further review, it was discovered that the existing Fulton Boiler (Permit No. D91178) has a heat input rating of 4.2 MMBtu/hr although the permit was issued incorrectly with the output rating

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATION

Page 2 of 4
Date: 08/16/11
A/P: See Page 1
PROCESSED BY: MS
CHECKED BY: DR

(3.35 MMBtu/hr). The other Fulton Boiler (Permit No. F5859) is identical and also has a heat input rating of 4.2 MMBtu/hr. Therefore, the new boilers qualify for functional identical replacement since the heat input rating does not exceed the rating of the existing boilers.

On 01/04/11, the facility also submitted A/N 517961 for a Title V Revision.

On 02/17/11, the facility submitted a letter from Fulton Companies which verifies the two boilers will meet the 9 ppmv NOx compliance limit specified in Rule 1146.1.

PROCESS DESCRIPTION:

The boilers will operate 52 wks/year, 7 days/week, 24 hrs/day.

EMISSIONS

The default emissions factors for ROG, SOx, and PM are from the Annual Emissions Reporting Instruction Book

R1 = R2, since the controls are internal

NOx, lbs/hr = (3,985,000 Btu/hr) (8710 dscf/10⁶ Btu) (9 ppm NOx/10⁶) (20.9/(20.9-3.0)) (46 lbs NOx/379 scf) = 0.043 lb/hr
lbs/day = (0.043 lb/hr)(24 hr/day) = 1.03 lb/day
30 DA = (1.03 lb/day)(30 for 7-day week/30) = **1.03 lb/day** Each Boiler

CO, lbs/hr = (3,985,000 Btu/hr) (8710 dscf/10⁶ Btu) (50 ppm CO/10⁶) (20.9/(20.9-3.0)) (28 lbs CO/379 scf) = 0.14 lb/hr
lbs/day = (0.14 lb/hr)(24 hr/day) = 3.36 lb/day
30 DA = (3.36 lb/day)(30 for 7-day week/30) = **3.36 lb/day** Each Boiler

ROG, lbs/hr = (3,985,000 Btu/hr) (cf/1050 Btu) (5.5 lb ROG/10⁶ cf default factor) = .021 lb/hr
lbs/day = (0.021 lb/hr)(24 hr/day) = .50 lbs/day
30 DA = (0.5 lb/day)(30 for 7-day week/30) = **0.5 lb/day** Each Boiler

SOx, lbs/hr = (3,985,000 Btu/hr) (cf/1050 Btu) (0.6 lb SOx/10⁶ cf default factor) = .002 lb/hr
lbs/day = (0.002 lb/hr)(24 hr/day) = 0.048 lb/day
30 DA = (0.048 lb/day)(30 for 7-day week/30) = **0.048 lb/day** Each Boiler

Assume PM is 100% PM10

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATION

Page 3 of 4

Date: 08/16/11

A/P: See Page 1

PROCESSED BY: MS

CHECKED BY: DR

PM10, lbs/hr = (3,985,000 Btulhr) (cf/1050 Btu) (7.6 lb PM10/10⁶ cf default factor) = .029 lb/hr

lbs/day = (0.029 lb/hr)(24 hr/day) = 0.7 lb/day

30 DA = (0.7 lb/day)(30 for 7-day week/30) = **0.7 lbs/day** Each Boiler

RULES EVALUATION:

Rule 212- Standard for Approving Permits

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. According to the website mapquest.com the nearest school, Rancho Cucamonga Middle School, is less than 1,000 ft from the project location. This project is a functional identical replacement. The total permitted combined rating of the two existing boilers (A/N's 280462, 324051) is 7.55 MMBtu/hr. After further review, it was discovered that the actual combined rating of the boilers is 8.4 MMBtu/hr. The new boilers have a combined rating of 7.97 MMBtu/hr. There is a slight decrease in actual total rating and emissions. A 30-Day Public Notice is not required under this paragraph.

Paragraph 212(c)(2) The equipment will not result in on-site emission increases exceeding the daily maximum emissions 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.

Rule 401- Visible Emission: No visible emission is expected if the equipment is well maintained and properly operated. Therefore, compliance is expected.

Rule 402- Nuisance: With proper operation and maintenance, the boilers are not likely to create a public nuisance.

Rule 407 – Liquid and Gaseous Air Contaminants: The boilers are expected to comply with the 2000 ppmv CO limit required by this rule.

Rule 409 – Combustion Contaminants: With the use of natural gas as fuel, the operation of the boiler is anticipated to comply with the .1 grains per cubic foot of gas limit.

Rule 1146.1 - Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATION

Page 4 of 4
Date: 08/16/11
A/P: See Page 1
PROCESSED BY: MS
CHECKED BY: DR

The boilers are expected to comply with fuel limits of 9 ppmv NO_x and 400 ppmv CO, corrected to 3% oxygen as required in this rule on or before January 1, 2012. Fulton Companies has provided a guarantee that the boiler will achieve a NO_x level of 9 ppm.

REGULATION XIII – New Source Review:

Rule 1303(a)-BACT: The increases in CO and NO_x emissions resulting from the installation of the new boilers are greater than 1 lb/day, therefore the boilers are required to meet current BACT/LAER limits. The non-major source BACT limits for a natural-gas fired, firetube type boiler, rated at 3.985 MMBTU/hr, are 12 ppmv NO_x and 50 ppmv CO, corrected to 3% O₂. The non-major BACT limit for NO_x is not as stringent as Rule 1146.1. The boilers will need to achieve a NO_x level of 9 ppm by January 1, 2012. The boilers are expected to meet the Rule 1146.1 limits, which are considered to be LAER.

Rule 1303 -Modeling: Exemption applies for functionally identical replacements to a source when there is no increase in maximum rating, and the potential to emit of any air contaminant will not be greater. Modeling not required.

Rule 1303 -Offsets: Exemption applies for functionally identical modification to a source when there is no increase in maximum rating, and the potential to emit of any air contaminant will not be greater. Offsets are not required.

Rule 1401 – New Source Review of Toxic Air Contaminants
Toxic Air Contaminants from natural gas usage is expected to be negligible.

Reg XXX – Title V Permits: Applications for De minimis Significant Permit Revisions require EPA 45-day review.

CONCLUSIONS AND RECOMMENDATIONS:

Based on the evaluation contained herein, the subject equipment is expected to comply with all of the District's rules and regulations; therefore, I recommend a Permit to Construct be issued to the two identical Fulton Boilers (A/N 517959, A/N 517962).