From:	Air.Pollution Control
To:	APC Permitting
Subject:	FW: CMOP 472842 - US Nitrogen Notification of Temporary Boiler Use - Insignificant Emissions
Date:	Monday, April 15, 2024 1:22:08 PM
Attachments:	image001.png 4.15.24 Notification of Temporary Boiler Use.pdf

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From: Gayle Winzenried <Gayle.Winzenried@austinpowder.com>
Sent: Monday, April 15, 2024 12:23 PM
To: Air.Pollution Control <Air.Pollution.Control@tn.gov>
Cc: Kim Ryans <Kim.Ryans@austinpowder.com>; Dylan Charles <Dylan.Charles@austinpowder.com>; Jordan Cheek <Jordan.Cheek@austinpowder.com>; James Johnston <James.Johnston@tn.gov>; Doug S. Wright <Doug.S.Wright@tn.gov>
Subject: [EXTERNAL] CMOP 472842 - US Nitrogen Notification of Temporary Boiler Use - Insignificant Emissions

Good day,

On behalf of US Nitrogen, I am submitting a notification of the emergency use of a temporary boiler which qualify as insignificant emission units. If you have further questions, please contact Kim Ryans.

Sincerely,

AUSTIN POWDER

Gayle Winzenried | Environmental, Health & Safety Administrative Coordinator
US Nitrogen, LLC | 471 Pottertown Road, Midway, TN 37809
Office: 423.422.3080 | Fax: 423.422.2050 | Email: Gayle.Winzenried@austinpowder.com

AUSTIN POWDER

April 15, 2024

Submitted Electronically to Air.Pollution.Control@tn.gov

Michelle W. Owenby, Director,
Division of Air Pollution Control
Tennessee Department of Environment and Conservation
William R. Snodgrass Tennessee Tower, 15th Floor
312 Rosa L. Parks Avenue
Nashville, Tennessee 37243

Re: Notification of the Use of Temporary Boilers Which Qualify as an Insignificant Emissions Unit

Dear Ms. Owenby,

On February 23, 2024, US Nitrogen LLC (US Nitrogen), Emission Source Number 30-0248, made notification of the anticipated use of a temporary boiler(s) while the existing permitted auxiliary boiler undergoes annual inspection. At the time of that notification, the specifications for the temporary boiler(s) were not known. The specifications are now known.

The permitted auxiliary boiler is a 113 MMBtu/hr boiler with low-NO_X burners. The permit limits for the currently permitted boiler are as follows:

Pollutant	Permit Limits		Permit Condition
PM	1.00 lb/hr	3.76 tons per 12 consecutive months	S2-4
SO2	0.1 lb/hr	0.3 tons per 12 consecutive months	S2-5
NOx	3.96 lb/hr	17.32 tons per 12 consecutive months	S2-6
CO	4.52 lb/hr	19.80 tons per 12 consecutive months	S2-7
VOC	0.61 lb/hr	2.72 tons per 12 consecutive months	S2-8

There will be two temporary boilers and it is anticipated they will be used for 60 days or less. For the purposes of calculating the emissions from the temporary boilers, we have conservatively assumed they will be used for 60 days. The temporary boilers will have maximum heat input capacities of 12.6 MMBtu/hr (300 hp output) and 10.5 MMBtu/hr (250 hp). Please see the attached specifications.

The temporary boilers meet the definition of "temporary boilers" in 40 CFR Subpart Dc due to being:

- Portable (i.e. they can be moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms);
- They will not be attached to a foundation;
- They will be used less than 180 days; and
- They are being used on a temporary basis until the permanent boiler can be inspected.

US Nitrogen believes the temporary boilers each, and in combination, constitute an *insignificant emissions unit* as defined in Tennessee Air Pollution Control Regulations 1200-03-09-.04(2)(a)3 since their use will result in potential emissions of less than five tons per year of each air contaminant and each regulated air pollutant that is not a hazardous air pollutant, and less than 1,000 pounds per year of each hazardous air pollutant. The calculated total emissions for the time the temporary boilers will be used are as follows:

Pollutant	**Emissions from Temporary Boilers During Period of Usage (TPY)**		
	Temporary Boiler #1	**Temporary Boiler #2**	**Both Boilers**
PM	0.07	0.07	0.13
SO_2	0.01	0.01	0.01
NOx	0.89	0.74	1.62
CO	0.74	0.62	1.36
VOC	0.05	0.04	0.09
Total HAP	0.02	0.01	0.03

The supporting emissions calculations for the temporary boilers are enclosed.

US Nitrogen expects to have the temporary boilers in operation by April 22, 2024.

If you have any questions regarding this request, please contact Kim Ryans at 423-422-2052 or Kim.Ryans@austinpowder.com.com

Dylan Charles
Plant Manager

Enclosures

300 HP TEMPORARY BOILER SPECIFICATIONS

30 day rental for $18,000. ~10,000 lbs/hr steam
Justin Steigerwald 513-254-1320
Smith-Hughes Company, Cincinnati, OH

3753 ROUND BOTTOM RD. CINCINNATI, OH 45244
PH 513 271-2226 FAX 513 271-2310 www.smithhughes.com info@smithhughes.com

RB-300A&B (2 Units Available)

300HP, 900 PSIG Vapor Steam Generators
10,350PPH From and at 212 Deg. F
Natural Gas/Propane-Fired

Compatible with Feedwater System
RFWS-300AB

Skid-mounted Steam Generator capable of full output and pressure within 5 minutes.

Design Details:
- 300HP (2,943 KW)
- 10,350PPH from and at 212 deg F
- Thermal Output: 10,042,500 BTU/Hr
- Construction Codes: ASME, Hartford, Nat. Board
- Fast Start-up
- Compact Size and Low Weight
- Modulating Output
- High Pressure
- Safe Operation

Controls:
- Steam pressure
- Low water cutoff
- Flame failure protection
- Coil temperature limit
- Exhaust stack temperature limit

Burner Requirements:
- 1 psig

Power Requirements:
- 230 or 460 VAC, 3 Ph, 60 Hz

Customer Connections:
- **Stack Outlet:** 24" OD
- **Steam Outlet:** 3" x 600# Flanged
- **Main Gas Supply:** 3" NPT
- **Feedwater Inlet:** 2-1/2" NPT
- **Blowdown Outlet (2):** 1" NPT
- **Fill Test Valve:** ½" NPT
- **Water Pump Relief Valve:** ½" NPT
- **Trap Return:** 1-1/2" NPT
- **Safety Valve Outlet (2): 1-1/4" NPT**

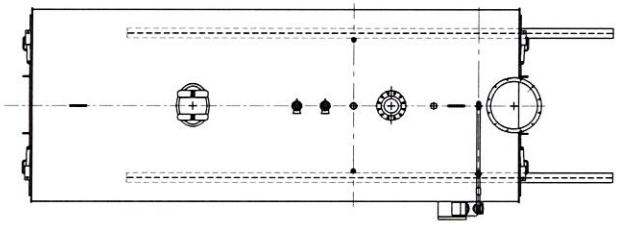
Dimensions:
- 120" L x 84" W x 131" H
- **Approx. Floor Loading:** 250#/sq ft

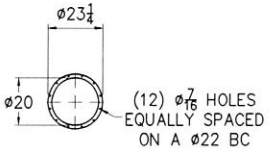
Shipping Weight:
- 17,500 lbs

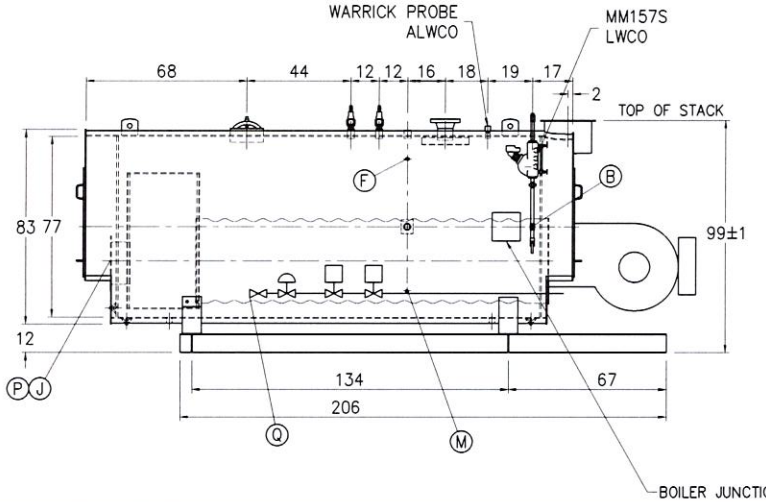
250 HP TEMPORARY BOILER SPECIFICATIONS

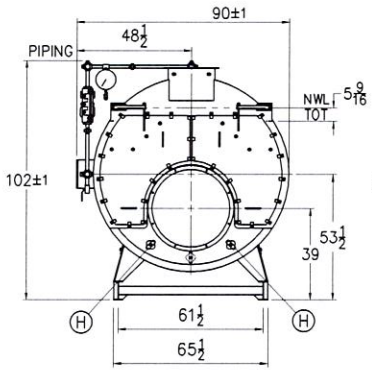
INDUSTRIAL BOILER & MECHANICAL CO
3325 N HAWTHORNE ST
CHATTANOOGA TN 37406
423-629-1117

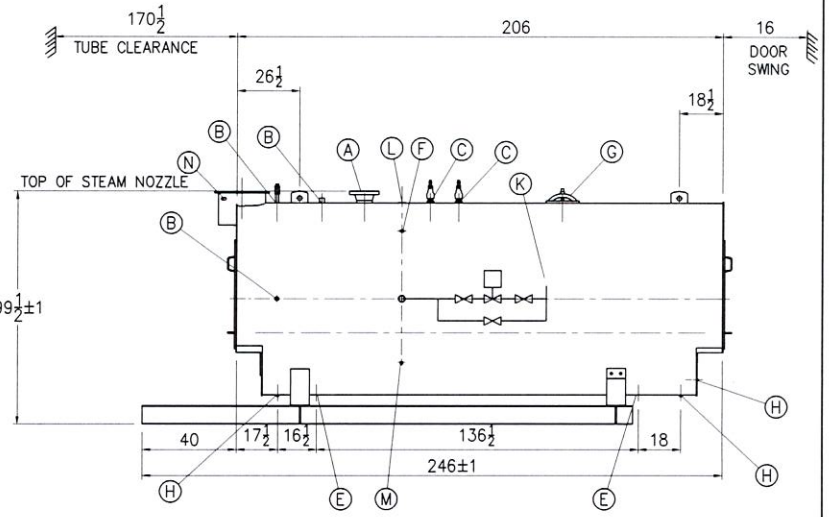
Low Pressure Steam Rental
Boiler
9/12/2022











BOILER CONNECTIONS	
A.(1) STEAM OUTLET	4" 300# FLANGE
B.(4) LWCO	1" NPT
C.(2) SAFETY VALVE	2" NPT
D.( ) SAFETY VALVE	
E.(2) BOILER BLOWDOWN	1 1/4" NPT
F.(2) SURFACE BLOWDOWN	1" NPT
G.(1) MANWAY	12" x 16"
H.(5) HANDHOLE	3" x 4"
J.(1) CLEANOUT PORT	17" ID
K.(2) FEEDWATER	1" NPT
L.(1) AUXILIARY/VENT	2" NPT
M.(2) LOW FIRE HOLD	1/2" NPT
N.(1) STACK TEMP	1/2" NPT
P.(1) SIGHT PORT	1" NPT
Q.(1) NAT GAS	3" NPT 5-10 PSI
R.(1) ELECTRICAL	460V 3-PH 20A
S.( )	

RATINGS & CAPACITIES	
HORSEPOWER	250*
DESIGN PRESSURE	150 PSIG STEAM
GROSS OUTPUT	8369 MBH*
STEAM (FROM & AT 212F)	8625 Lbs/HR*
HEAT RELEASE: (FURNACE ONLY)	134235 BTU/CuFt*
RATED INPUT	10461 MBH*
HEATING SURFACE (ASME)	1269 SqFt
FURNACE HEATING SURFACE	118.97 SqFt
FURNACE VOLUME	77.93 CuFt
TURNAROUND VOLUME	42.09 CuFt
STEAMING VOLUME	37.70 CuFt
STEAM RELEASE AREA	64.68 SqFt
WATER CAPACITY:	
(FULL) 2,200 Gal	@ 18,300 Lbs
(NWL) 1,918 Gal	@ 15,954 Lbs
SHIPPING WEIGHT:	23,200 Lbs

LTR	DATE	REVISION	BY

REPRESENTATIVE:

PROJECT:

NOTES

1. ALL CONTROLS MOUNTED AS PER SPECIFICATION SHEET.
2. SPECIFICATION SHEET TAKES PRIORITY OVER R & D SHEET.
3. BOILER DESIGN CODE ASME SECTION I.
4. BOILER INSULATED WITH 2" - 8# DENSITY MINERAL FIBER INSULATION WITH 22 GAUGE STEEL JACKET.
5. ALL DIMENSIONS ARE ±1/2" UNLESS OTHERWISE NOTED.
*6. HORSEPOWER & RELATED INFO BASED ON 5 SqFt FIRING.

SUPERIOR BOILER WORKS, INC.
HUTCHINSON, KANSAS

CHECKED BY	DATE
DRAWN BY: ?	DATE:

MOHICAN BOILER MODEL
7-5-1250-S150

SCALE	DRAWING No
1/54	?

TEMPORARY BOILERS EMISSIONS CALCULATIONS

Process Name - US Nitrogen Temporary Boilers

Maximum Days of Operation	60	days
Maximum Hours of Operation	1440	hr
High Heat Value of Natural Gas	1020	BTU/scf
Rental Boiler #1, Maximum Heat Input	12.6	MMBtu/hr [1]
Rental Boiler #2, Maximum Heat Input	10.5	MMBtu/hr [2]

Potential to Emit for Rental Boiler #1 (300 hp)

Pollutant	PM	SO_2	NO_X	CO	VOC	CO_2e	HAP
Emission Factor (lb/MMScf) [3]	7.6	0.6	100	84	5.5	120000	1.89
Emissions (lb/hr)	0.09	7.38E-03	1.23	1.03	0.07	1477	0.02
Emissions (TPY)	0.07	0.01	0.89	0.74	0.05	1063	0.02

Potential to Emit for Rental Boiler #2 (250 hp)

Pollutant	PM	SO_2	NO_X	CO	VOC	CO_2e	HAP
Emission Factor (lb/MMScf) [3]	7.6	0.6	100	84	5.5	120000	1.89
Emissions (lb/hr)	0.09	6.2E-03	1.03	0.86	0.06	1231	0.02
Emissions (TPY)	0.07	4.4E-03	0.74	0.62	0.04	886	0.01

Potential to Emit for Both Boilers Combined

Pollutant	PM	SO_2	NO_X	CO	VOC	CO_2e	HAP
Emissions (lb/hr)	0.19	0.01	2.26	1.90	0.12	2708	0.04
Emissions (TPY)	0.13	0.01	1.62	1.36	0.09	1949	0.03

1. Based on a thermal output of 10,042,500 BTU/hr (see attached specification sheet) and an 80% efficency.
2. From boiler drawing (attached) of boiler.
3. From AP-42, Chapter 1.4 Natural Gas Combustion