

SHAMS POWER COMPANY
ENGINEERING DIVISION
INSPECTION & CORROSION SECTION
SHAMS 1

LOCATION : R1GHC01BG001
KKS : R1GHC01BG001 – BOILER -1
R1GHCO1BB001 – EXPANSION DRUM
GRADE & CLASSIFICATION : 2

CERTIFICATE OF INSPECTION

The equipment detailed below was examined in accordance with the SHAMS code of practice for plant inspection,

ITEM : GRMS boiler-1

LOCATION : SHAMS Plant

TYPE OF INSPECTION : Major

DATE OF INSPECTION : Jan, 2020

PLACE OF INSPECTION : IN-SITU

DATE OF LAST INSPECTION : Jan, 2018

REPORT :

1.0. SUMMARY

The above boiler was taken off line, isolated, opened, vented & cleaned for major external & internal inspections.

2.0. SUBJECT

2.1. This fire tube boiler consisted of main water horizontal vessel, inside it a fire tube where burner mounted on it. Flaw gases goes inside one inch diameters tubes making two passes inside main water vessel before going to the atmosphere through vertical chimney

| | |
|-----------------------|--------------|
| Size | N/A |
| Design pressure | 30 bar |
| Design temperature | 150 C |
| Operation pressure | 3 bar |
| Operation temperature | 120 C |
| Fire tube material | Carbon steel |
| Shell material | Carbon steel |

.....
The above equipment is/ ~~is not~~ considered suitable for further service under the present operating conditions

NEXT MAJOR INSPECTION DUE :

INSPECTED : Osman Ismail

ENDORSEMENT: 48 MONTHS

REVIEWED : Ali Al Masabai

3.0 HISTORY

This boiler was commissioned in 2013. It was experienced repeated leaks from welding tubes to tube sheet welding. It was re-welded, tested and almost problem eliminated.

4.0. SCOPE OF INSPECTION

4.1. Visual Inspections were carried out on internal & external surfaces of the boiler following removal burner and internal cleaning. Internal surface condition of fire tube found satisfactory without any evidence of overheating, flame impingement, creep, or any dimension changes.

4.2 Visual Inspection of

4.3 Ultrasonic thickness survey on fire tube

5.0. CONDITIONS FOUND

5.1. External

- Insulation along with its cladding, connecting piping, safety valves, ladders, walkways, concrete foundation, burner, tube sheet covers, chimney all found in satisfactory condition.

-

5.2 Internal

- Internal surface condition of fire tube found satisfactory without any evidence of overheating, flame impingement, creep, or any dimension changes.
- welding of tube to tube sheet along with accessible parts of tube internal surfaces found in satisfactory condition.
- Dividing plates inside fire tubes found in satisfactory condition.

5.3 Expansion Drum (balloon)

- Expansion drum (balloon) found satisfactory without evidence of paint peel off or any mechanical damage.

5.4 NDT

- Thickness survey of fire tube carried found in satisfactory condition with average thickness 7.4 mm. Details in attached thickness survey report.

4.5 Insulation

Found in good condition along with cladding sheet

5.6 Supports

Found in good condition

6.0 Recommendations

- Interval of safety valve testing and floating test after major maintenance and opening internals of valves should discussed and agreed with operation and maintenance division.

7.0 Inspection Grade and Interval

In accordance with the latest revision of SHAMS Code of Practice, this boiler was endorsed for 48 months under class 2, for next Major Inspection.

FREQUENCY : 48 MONTHS.
ENDORSEMENT : 48 MONTHS,
GRADE : 2
Next Major Insp. due : March, 2024

8.0 Photos:



GRMS Boiler # R1GHC01BG001



General view of GRMS boiler



Fire tube internal surface



Tube sheet, Tubes and its weld – outside boiler



Fire tube dividers and cover refractory



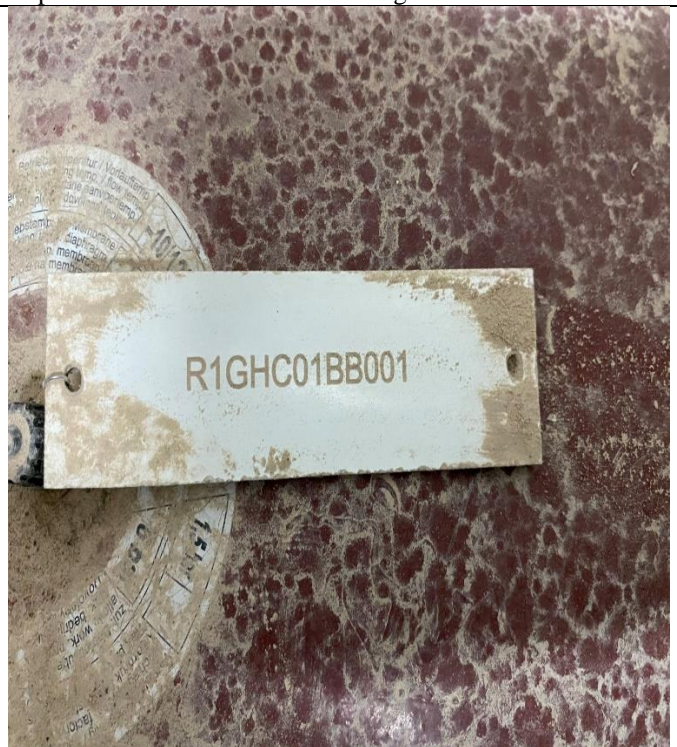
Expansion drum of Boiler # R1GHC01BG001



Expansion drum external surface in good condition



No evidence of paint peel off of the paint



Expansion drum KKS number

Form No.: IN-QSF-36 Rev. 05E Dtd.: 20-10-2018

ULTRASONIC THICKNESS GAUGING REPORT

| | | | |
|------------------------------------|----------------------------------|--|-----------------------------------|
| Client: | SHAMS POWER COMPANY | | |
| Date: | 05.03.2020 | Report No.: | AD / 463 |
| Project: | SHAMS OUTAGE MARCH 2020 | Job No.: | N/A |
| Location: | MADINAT ZAYED | Drawing No.: | N/A |
| Item ID: | GRMS BOILER | Material: | CS |
| Ref/ Procedure No: | INSPEC/UTG/001 Rev.10 | Ref. Standard: | ASME SEC V |
| UTG Equipment Model/ Manufacturer: | USM 35 X DAC / GE | Serial No.: | 7292a |
| Calibration Block No.: | STEP WEDGE, IIW V2 BLOCK | EQPT Calibration Certificate & Due Date: | INS/UT/CAL-043/19/AUH |
| Probe Type/ Size/Frequency: | WK TR 0° PROBE/ 10mm DIA / 5 MHz | Couplant Brand Name & Type: | POLYCELL + WATER |
| Connecting Cable Type & Length: | LEMO TO MICRODOT & 2 MTR | Special Attachment/ Equipment/ Block: | STEP WEDGE BLOCK (SL NO : AZB270) |
| Test Temperature: | AMBIENT | Surface Condition: | AS CLEANED |
| Inspection Date: | 05.03.2020 | Page: | 1 of 1 |
| Description: | | | |

ULTRASONIC THICKNESS GAUGING WAS CARRIED OUT ON THE FOLLOWING GRMS BOILER (R1 GHC01 BG001)

| LOCATION | ORIENTATION | MEASURED THICKNESS (mm) |
|----------|-------------|-------------------------|
| 1 | 12 O'CLOCK | 7.03 |
| 1 | 3 O'CLOCK | 7.05 |
| 1 | 6 O'CLOCK | 7.06 |
| 1 | 9 O'CLOCK | 7.08 |
| 2 | 12 O'CLOCK | 7.89 |
| 2 | 3 O'CLOCK | 7.67 |
| 2 | 6 O'CLOCK | 7.79 |
| 2 | 9 O'CLOCK | 7.42 |
| 3 | 12 O'CLOCK | 7.09 |
| 3 | 3 O'CLOCK | 7.03 |
| 3 | 6 O'CLOCK | 7.10 |
| 3 | 9 O'CLOCK | 7.06 |

REPORT FORMAT APPLICABLE ONLY FOR AUH & FUJ FACILITY

| LEVEL II TECHNICIAN | | CLIENT REPRESENTATIVE | | AI / TPI |
|---------------------|-------------|-----------------------|--|----------|
| Name : | SHYMAL PAUL | Name : | | |
| Sign : | | Sign : | | |
| Date : | 05.03.2020 | Date : | | |

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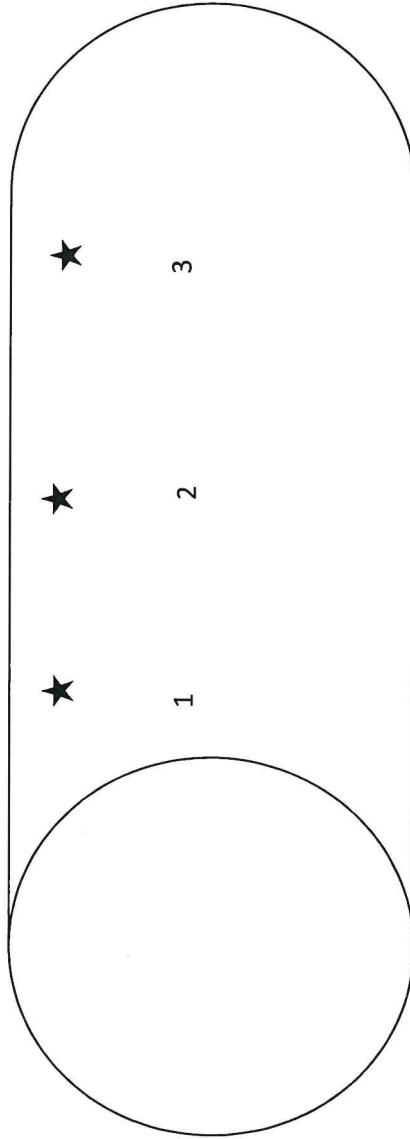
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ULTRASONIC THICKNESS SCANNING DRAWING SHEET


GRMS BOILER



★ UTG LOCATION

LEVEL II TECHNICIAN

Name :- SHYMA PAUL

Sign :-  Level II No. 680

Date :- 05.03.2020

Form No.: IN-QSF-36 Rev. 05E Dtd.: 20-10-2018


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|---------------------|---|-----------------------|--|----------|
| Name : | SHYMAL PAUL | Name : | | |
| Sign : |  | Sign : | | |
| Date : | 05.03.2020 | Date : | | |

Level II No. 660

INSPEC
Level II No. 660
Date: 05.03.2020

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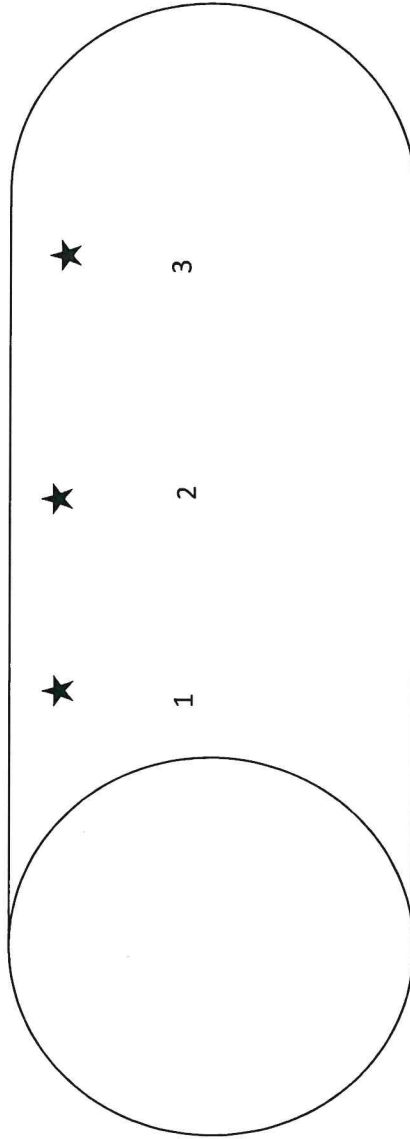
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GRMS BOILER



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Name :- SHYAM PAUL

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