

SHAMS POWER COMPANY
ENGINEERING DIVISION
INSPECTION & CORROSION SECTION
SHAMS 1

LOCATION : R1QH10AC00
KKS : R1QH10AC00
GRADE & CLASSIFICATION : 2

CERTIFICATE OF INSPECTION

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

ITEM : Auxiliary boiler

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	
Design pressure	
Design temperature	
Operation pressure	
Operation temperature	
Fire tube material	
Shell material	

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. Dye- penetrant test on tube sheet to tube welding.

4.4 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.
- Some combustion products found deposited inside duct (outside boiler) under chimney.

5.3 NDT

- Thickness survey of fire tube carried found in satisfactory condition with average thickness 18.5 mm. Details in attached thickness survey report.
- Dye- penetrant test carried out on tube to tube sheet welds found satisfactory.

4.4. Insulation

Found in good condition along with cladding sheet

5.5. 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.

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:

	
General view of Auxiliary boiler	Fire tube internal surface
	
Tube sheet, Tubes and its weld – outside boiler	Tube sheet, Tubes and its weld – inside boiler
	
Tube sheet, Tubes and its weld – chimney side	Combustion product deposit – chimney side



Burner refractory and tube sheet cover

ULTRASONIC THICKNESS GAUGING REPORT


Client: SHAMS POWER COMPANY			
Date:	05.03.2020	Report No.:	AD / 465
Project:	SHAMS OUTAGE MARCH 2020	Job No.:	N/A
Location:	MADINAT ZAYED	Drawing No.:	N/A
Item ID:	AUXILIARY 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	1

Description:

ULTRASONIC THICKNESS GAUGING WAS CARRIED OUT ON THE FOLLOWING AUXILIARY BOILER (R1 QH 10AC001)

LOCATION	ORIENTATION	MEASURED THICKNESS (mm)
1	12 O'CLOCK	18.40
1	3 O'CLOCK	18.26
1	6 O'CLOCK	18.33
1	9 O'CLOCK	18.29
2	12 O'CLOCK	18.27
2	3 O'CLOCK	18.34
2	6 O'CLOCK	18.39
2	9 O'CLOCK	18.30
3	12 O'CLOCK	18.38
3	3 O'CLOCK	18.43
3	6 O'CLOCK	18.59
3	9 O'CLOCK	18.39
4	12 O'CLOCK	18.58
4	3 O'CLOCK	18.46
4	6 O'CLOCK	18.30
4	9 O'CLOCK	18.25
5	12 O'CLOCK	18.42
5	3 O'CLOCK	18.43
5	6 O'CLOCK	18.46
5	9 O'CLOCK	18.30

REPORT FORMAT APPLICABLE ONLY FOR AUH & FUJ FACILITY

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

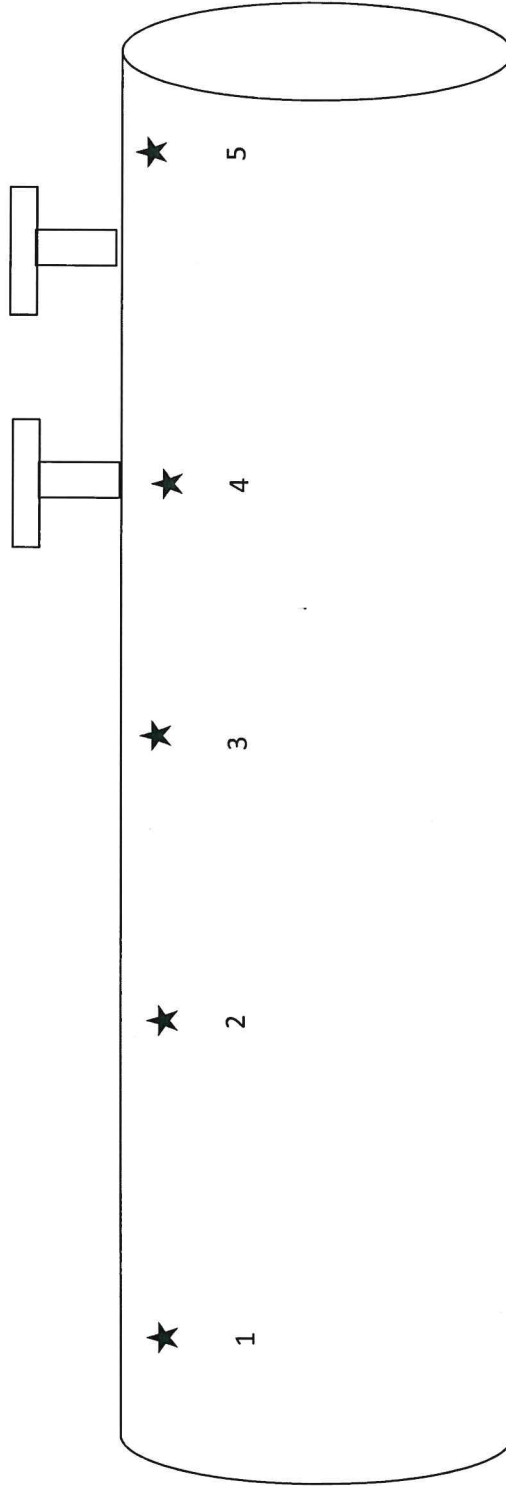
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For Complaints & Suggestions:
Please email to: suggestions.inspec@intertek.com

ULTRASONIC THICKNESS SCANNING DRAWING SHEET

AUXILIARY BOILER



★ UTG LOCATION

LEVEL II TECHNICIAN

Name :- SHEKHAR PAUL
UTG No. _____

Sign :- _____

Date :- 05-03-2020

LIQUID PENETRANT EXAMINATION REPORT

Report No.:	AD / 53664	Date:	05.03.2020	Page:	1	Of	1
Client :	SHAMS POWER COMPANY	Job No. :	PROJECT :- SHAMS OUTAGE MAINTENANCE -2020				
Location :	MADINAT ZAYED	Item :	AS BELOW				
Material :	CS	Ref / Procedure No. :	INS/ASME/PT/001				
Thickness :	VARIOUS	Revision :	22				
Surface condition :	AS WELDED & CLEANED	Test Temp. :	AMBIENT (25°)				
Viewing condition :	DAY LIGHT (>1076 LUX)	Penetrant Type / Technique :	VISIBLE SOLVENT REMOVABLE				
Penetrant dwell time :	10 MIN	Dev. Time:	10 MIN				
Date of test :	05.03.2020	ACCP - Criteria :	ASME SEC VIII DIV-1				
Consumables Type & Batch	MAGNAFLUX - SPOTCHECK						

Penetrant Remover	Penetrant	Developer
SKC-S (BATCH NO-180108) JAN 2021	SKL-SP2 (BATCH NO-171201) DEC 2020	SKD-S2 (BATCH NO-180102) JAN 2021

Observation & Evaluation :

100% DPT WAS CARRIED OUT ON THE FOLLOWING ITEM

AUXILIARY BOILER (R1Q1H-10AC001)

PT WAS DONE ON TUBE END WELD JOINT

NO RELEVANT INDICATION WAS OBSERVED DURING THE TIME OF INSPECTION.

FOUND ACCEPTABLE AS PER THE SPECIFICATION.

RESULT	ACCEPT	REJECT
	<input checked="" type="checkbox"/>	<input type="checkbox"/>

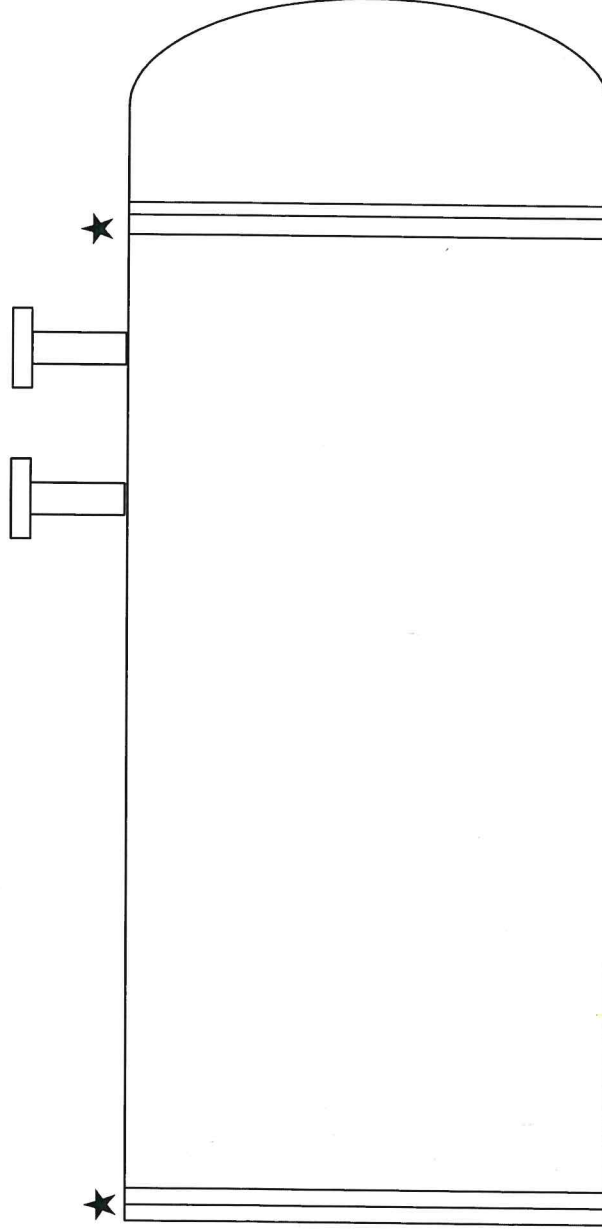
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LEVEL II TECHNICIAN		CLIENT REP		AI / TPI	
Name :	AFZAL ANSARI & SHYAMAL PAUL	Name :		Name :	
Sign :		Sign :		Sign :	
Date :	05.03.2020	Date :		Date :	
Dubai Branch	P.O. Box: 96535, Dubai, U.A.E.	Tel: 04 3241955	Fax: 04 3241957	Email: inspec.dubai@intertek.com	INSPEC IS PART OF INTERTEK GROUP Please email to suggestions.inspec@intertek.com
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LIQUID PENETRANT EXAMINATION - DRAWING SHEET

AUXILIARY BOILER



★ PT DONE LOCATION

LEVEL II TECHNICIAN

Name :- AFZAL ANSARI & SHYMAL PAUL

Sign :-  Sign

Date :- 05.03.2020