Sheet Name	Description
J23-0064-ITC-003-01	FT.156: SO2 Converter - SO2 Flow
J23-0064-ITC-003-02	FT.256: NH3/Air Mixing - NH3 Flow
J23-0064-ITC-003-03	FT.304: NH3 Scrubber Recirculation Flow
J23-0064-ITC-003-04	FT.327: Discharged Water - Flow Transmitter
J23-0064-ITC-003-05	FT.406: Hose Treatment - Flushing Water Flow
J23-0064-ITC-003-06	FT.410: SO2 Scrubber - Water Flow
J23-0064-ITC-003-07	FT.414: Scrubber Spray Water - Flow Transmitter
J23-0064-ITC-003-08	FT.605: Hose Treatment - Air Flushing Flow Transmitter
J23-0064-ITC-003-09	FT.659: Air Preheater - Air Flow
J23-0064-ITC-003-10	FT.663: NH3/Air Mixing - Air Flow
J23-0064-ITC-003-11	LT.140: SO2 Bottle 1 - Level
J23-0064-ITC-003-12	LT.142: SO2 Bottle 2 - Level
J23-0064-ITC-003-13	LT.303: NH3 Scrubber Base Tank Level
J23-0064-ITC-003-14	LT.319: Scrubber Bund Level Transmitter
J23-0064-ITC-003-15	LT.320: Waste Water Tank Level
J23-0064-ITC-003-16	AT.321: Waste Water pH analyser
J23-0064-ITC-003-17	AT.520A: Hose Treatment Enclosure - SO2 Gas Analyser
J23-0064-ITC-003-18	AT.520B: Hose Treatment Enclosure - NH3 Gas Analyser
J23-0064-ITC-003-19	PT.152: SO2 Vaporiser - SO2 Pressure
J23-0064-ITC-003-20	PDT.180: SO2 Scrubber - Differential Pressure
J23-0064-ITC-003-21	PT.252: NH3 Vaporiser - NH3 Pressure
J23-0064-ITC-003-22	PDT.280: NH3 Scrubber - Differential Pressure
J23-0064-ITC-003-23	PT.670: Air Receiver - Pressure
J23-0064-ITC-003-24	TT.160: SO2 Converter - Temperature
J23-0064-ITC-003-25	TT.153: SO2 Vaporiser - SO2 Discharge Temperature
J23-0064-ITC-003-26	TT.159: SO2 Converter - SO3 Discharge Temperature
J23-0064-ITC-003-27	TT.251: NH3 Vaporiser - NH3 Discharge Temperature
J23-0064-ITC-003-28	TT.653: Air Preheater - Air Discharge Temperature
J23-0064-ITC-003-29	PT.652: Air Preheater - Air Pressure
J23-0064-ITC-003-30	TT.106: Heat Exchanger Discharge Temperature
J23-0064-ITC-003-32	TT.144: SO2 Vaporiser - Enclosure Temperature
J23-0064-ITC-003-33	TT.244: NH3 Vaporiser - Enclosure Temperature

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J23-0064-ITC-009-01

Revision: A

Template: ITC_Type
Project: MAC TLO HPULLingra

Engineering SO2 Converter - SO2 Flow			Project: Date:	MAC TLO HPU Upgrade 29/11/23		
Analogue Inst	trument					
Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [FT_156_AI] into simulation mode (if avilable) and set value between: [0.0] 8 [4.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[3.67]	[FT.156] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[3.4]	[FT.156] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[3.16]	[FT.156] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[0.0]	[FT.156] Low Low Alarm displayed		
Inspection Pas	sed Sign Off					
Date:						
	cal Engineering	Name:		Signature:		
Client Name:			Signature:			
Remarks or R	emedial Action Required					
Remedial Ac	ction Completed:					

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J23-0064-ITC-009-01

Revision: A Template: ITC

ITC_Type

MAC TLO HPU Upgrad

Engineering		NH3/Air Mixing - NH3 Flow		Project:	MAC TLO HPU Upgrade
				Date:	29/11/23
	Pre-Requisites	Test Action	Expected Result	Pass	Comment
Correct Indication Shown			· ·		
Alarm High High		Simulate Value to: >[5.42]	[FT.256] High High Alarm displayed		
Alarm High		Simulate Value to: >[5.29]	[FT.256] High Alarm displayed		
Alarm Low		Simulate Value to: <[5.03]	[FT.256] Low Alarm displayed		
Alarm Low Low		Simulate Value to: <[0.0]	[FT.256] Low Low Alarm displayed		
sed Sign Off	•			•	
al Engineering	Name:		Signature:		
Client Name: Signature: Remarks or Remedial Action Required					
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tion Completed:					
	Test Description Correct Indication Shown Alarm High High Alarm Low Alarm Low Alarm Low Low ed Sign Off al Engineering medial Action Required	Test Description Pre-Requisites Correct Indication Shown Alarm High High Alarm Low Alarm Low Alarm Low Low ed Sign Off al Engineering Name: Name: medial Action Required	Test Description Pre-Requisites Test Action Correct Indication Shown Set [FT_256_AI] into simulation mode (if avilable) and set value between: [0.0] & [6.0] Alarm High High Simulate Value to: >[5.42] Alarm High Simulate Value to: >[5.29] Alarm Low Simulate Value to: <[5.03]	Test Description Pre-Requisites Test Action Expected Result Correct Indication Shown Set [FT_256_Al] into simulation mode (if avilable) and set value between: [0.0] & Relevant HMI Indicator displays corresponding value. Alarm High High Simulate Value to: >[5.42] [FT.256] High High Alarm displayed Alarm Low Simulate Value to: >[5.29] [FT.256] High Alarm displayed Alarm Low Simulate Value to: <[5.03] [FT.256] Low Alarm displayed Alarm Low Low Simulate Value to: <[0.0] [FT.256] Low Alarm displayed Alarm Low Low Simulate Value to: <[0.0] [FT.256] Low Low Alarm displayed Beta Sign Off Beta Sign Alarm Company Signature: Signature: Signature: Mane: Signature: Signature: Mane: Signature: Mane: Signature: Mane: Mane: Signature: Mane: Mane: Signature: Mane: M	Unment Test Description Pre-Requisites Test Action Set [FT_256_AI] into simulation mode (if aviilable) and set value between: [0.0] & Relevant HMI Indicator displays corresponding value. Alarm High High Alarm High High Simulate Value to: >[5.42] FT. 256] High High Alarm displayed FT. 256] High Alarm displayed FT. 256] How Alarm displayed FT. 256] Low Low Alarm displayed FT. 256] Low Low Alarm displayed FT. 256] Low Low Alarm displayed FT. 256] Signature: FT. 256] Signature: FT. 256] Low Low Alarm displayed FT. 256] Low Low Alarm displayed

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J23-0064-ITC-009-01 Revision:

ITC_Type MAC TLO HPU Upgrade 29/11/23 Template: **NH3 Scrubber Recirculation Flow** Project: Date: Analogue Instrument Test Number Test Description Pre-Requisites Test Action Pass Comment **Expected Result** Set [FT_304_AI] into simulation mode (if avilable) and set value between: [0.0] & Correct Indication Shown Relevant HMI Indicator displays corresponding value. [3000.0] Alarm High Simulate Value to: >[2400.0] [FT.304] High Alarm displayed 3 Alarm Low Simulate Value to: <[1600.0] [FT.304] Low Alarm displayed Alarm Low Low Simulate Value to: <[0.0] [FT.304] Low Low Alarm displayed Inspection Passed Sign Off Beyond Electrical Engineering Name: Signature: Client Signature: Remarks or Remedial Action Required Remedial Action Completed:

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	Engineering

J23-0064-ITC-009-01

Revision: Α ITC_Type

Template:

	Engineering Discharged Water - Flow Transmitter		Project: Date:	MAC TLO HPU Upgrade 29/11/23		
Analogue Inst	rument				Dutc.	23/11/23
Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [FT_327_AI] into simulation mode (if avilable) and set value between: [0.0] & [600.0]	Relevant HMI Indicator displays corresponding value.		
5	Alarm Low Low		Simulate Value to: <[0.0]	[FT.327] Low Low Alarm displayed		
Inspection Pass	sed Sign Off				•	
Date:						
Beyond Electric	cal Engineering	Name:		Signature:		
Client		Name:		Signature:		
Remarks or Re	emedial Action Required					
Remedial Ac	tion Completed:					

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	Engineering

J23-0064-ITC-009-01

Revision:

Template: ITC_Type **Hose Treatment - Flushing Water Flow** MAC TLO HPU Upgrade 29/11/23 Project: Date: Analogue Instrument Test Number Test Description Pre-Requisites Test Action Comment **Expected Result** Pass Set [FT_406_AI] into simulation mode (if avilable) and set value between: [0.0] & Correct Indication Shown Relevant HMI Indicator displays corresponding value. [4000.0] Alarm High High Simulate Value to: >[3000.0] [FT.406] High High Alarm displayed 2 3 Alarm High Simulate Value to: >[2800.0] [FT.406] High Alarm displayed 4 Alarm Low Simulate Value to: <[2000.0] [FT.406] Low Alarm displayed 5 Alarm Low Low Simulate Value to: <[1800.0] [FT.406] Low Low Alarm displayed Inspection Passed Sign Off Beyond Electrical Engineering Signature: Client Signature: Name: Remarks or Remedial Action Required Remedial Action Completed:

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J23-0064-ITC-009-01

Revision:

ITC_Type

Template: **SO2 Scrubber - Water Flow** MAC TLO HPU Upgrade 29/11/23 Project: Date: Analogue Instrument Test Number Test Description Pre-Requisites Pass Comment Test Action **Expected Result** Set [FT_410_AI] into simulation mode (if avilable) and set value between: [0.0] & Correct Indication Shown Relevant HMI Indicator displays corresponding value. [2000.0] Simulate Value to: >[1400.0] [FT.410] High Alarm displayed 3 Alarm High Alarm Low Simulate Value to: <[600.0] [FT.410] Low Alarm displayed 5 Alarm Low Low Simulate Value to: <[400.0] [FT.410] Low Low Alarm displayed Inspection Passed Sign Off Beyond Electrical Engineering Name: Signature: Client Signature: Name: Remarks or Remedial Action Required Remedial Action Completed:

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J23-0064-ITC-009-01

Revision: Template:

ITC_Type

MAC TLO HPU Ungrade

Engineering	Scrubber Spray Water - Flow Transmitter		Project: Date:	MAC TLO HPU Upgrade 29/11/23	
ument					
Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
Correct Indication Shown		Set [FT_414_AI] into simulation mode (if avilable) and set value between: [0.0] & [600.0]	Relevant HMI Indicator displays corresponding value.		
Alarm Low Low		Simulate Value to: <[0.0]	[FT.414] Low Low Alarm displayed		
ed Sign Off	•				
al Engineering	Name:		Signature:		
	Name:		Signature:		
medial Action Required	<u> </u>				<u> </u>
	Engineering ument Test Description Correct Indication Shown Alarm Low Low ed Sign Off Il Engineering	Engineering ument Test Description Pre-Requisites Correct Indication Shown Alarm Low Low ed Sign Off Il Engineering Name: Name:	Engineering Scrubber Spray Water - Flow Transmitter wment Test Description Pre-Requisites Test Action Set [FT_414_AI] into simulation mode (if avilable) and set value between: [0.0] & [600.0] Alarm Low Low Simulate Value to: <[0.0] ad Sign Off It Engineering Name: Name:	Engineering Scrubber Spray Water - Flow Transmitter Test Description Pre-Requisites Test Action Set [FT_414_AI] into simulation mode (if avilable) and set value between: [0.0] & Relevant HMI Indicator displays corresponding value. [600.0] Alarm Low Low Simulate Value to: <[0.0] ETT.414] Low Low Alarm displayed and Sign Off If Engineering Name: Name: Signature: Signature: Signature:	Engineering Scrubber Spray Water - Flow Transmitter Project: Date: Date: Unment Test Description Pre-Requisites Test Action Set [FT_414_AI] into simulation mode (if avilable) and set value between: [0.0] & Relevant HMI Indicator displays corresponding value. Alarm Low Low Simulate Value to: <[0.0] If [FT.414] Low Low Alarm displayed Alarm Low Low Relevant HMI Indicator displays corresponding value. Simulate Value to: <[0.0] Simulate Value to: <[0.0] Simulate Value to: <[0.0] Signature: Signature:

Remedial Action Completed:

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	Engineering

J23-0064-ITC-009-01

Revision: A

Template: ITC_Type

Hose Treatment - Air Flushing Flow Transmitter

	Engineering		Hose Treatment - Air Flushing Flow Transmitter		Project:	MAC TLO HPU Upgrade
					Date:	29/11/23
nalogue Insti						
est Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [FT_605_AI] into simulation mode (if avilable) and set value between: [0.0] & [20.0]	Relevant HMI Indicator displays corresponding value.		
3	Alarm High		Simulate Value to: >[8.8]	[FT.605] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[4.4]	[FT.605] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[1.1]	[FT.605] Low Low Alarm displayed		
Inspection Pass	ed Sign Off	-			<u>'</u>	<u>'</u>
Date:						
Beyond Electric	al Engineering	Name:		Signature:		
Client		Name:		Signature:		
Remarks or Re	emedial Action Required					
•	-		·		•	
	·		<u> </u>	·	•	
Remedial Act	tion Completed:					

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	Electrical
	Engineering

J23-0064-ITC-009-01

Revision: Α Tomplator

ITC Type

	Engineering		Air Preheater - Air Flow		Template: Project: Date:	ITC_Type MAC TLO HPU Upgrade 29/11/23	
Analogue Inst	rument						
Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment	
1	Correct Indication Shown		Set [FT_659_A1] into simulation mode (if avilable) and set value between: [0.0] & [8.0]	Relevant HMI Indicator displays corresponding value.			
3	Alarm High		Simulate Value to: >[6.37]	[FT.659] High Alarm displayed			
4	Alarm Low		Simulate Value to: <[5.93]	[FT.659] Low Alarm displayed			
Inspection Pass	sed Sign Off						
Date:							
Beyond Electric	al Engineering	Name:		Signature:			
Client		Name:		Signature:			
Remarks or Re	emedial Action Required				•	-	
	<u> </u>			·	•		
					•		
Remedial Act	Remedial Action Completed:						

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J23-0064-ITC-009-01

Revision:

ITC_Type MAC TLO HPU Upgrade 29/11/23 Template: NH3/Air Mixing - Air Flow Project: Date: Analogue Instrument Test Number Test Description Pre-Requisites Test Action Pass Comment **Expected Result** Set [FT_663_AI] into simulation mode (if avilable) and set value between: [0.0] & Correct Indication Shown Relevant HMI Indicator displays corresponding value. [10.0] Alarm High Simulate Value to: >[9.22] [FT.663] High Alarm displayed 3 Alarm Low Simulate Value to: <[8.34] [FT.663] Low Alarm displayed Inspection Passed Sign Off Beyond Electrical Engineering Name: Signature: Client Name: Signature: Remarks or Remedial Action Required Remedial Action Completed:

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~~	Beyond
	Electrical
	Engineering

J23-0064-ITC-009-01

Revision: Α Template:

ITC Type

/ Engineering		CO2 Pottle 1 Level		remplate:	IIC_Iype
Crigineering		SOZ BOTTIE 1 - LEVEI			MAC TLO HPU Upgrade
				Date:	29/11/23
rument					
Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
Correct Indication Shown		Set [LT_140_Al] into simulation mode (if avilable) and set value between: [0.0] & [150.0]	Relevant HMI Indicator displays corresponding value.		
Alarm Low		Simulate Value to: <[35.0]	[LT.140] Low Alarm displayed		
Alarm Low Low		Simulate Value to: <[32.0]	[LT.140] Low Low Alarm displayed		
ed Sign Off					
al Engineering	Name:		Signature:		
	Name:		Signature:		
emedial Action Required					
tion Completea:					
	Test Description Correct Indication Shown Alarm Low Alarm Low Low ed Sign Off al Engineering	ument Test Description Pre-Requisites Correct Indication Shown Alarm Low Alarm Low Low ed Sign Off Il Engineering Name: Name: medial Action Required	ument Test Description Pre-Requisites Test Action Correct Indication Shown Set [LT_140_AI] into simulation mode (if avilable) and set value between: [0.0] & [150.0] Alarm Low Simulate Value to: <[35.0]	Test Description Pre-Requisites Test Action Expected Result Correct Indication Shown Simulate Value to: <[35.0] [150.0] [LT.140] Low Alarm displayed Alarm Low Low Simulate Value to: <[32.0] [LT.140] Low Low Alarm displayed Bed Sign Off Is ginature: Name: Name: Name: Signature: Signature: Signature: Signature: Signature:	ument Test Description Pre-Requisites Test Action Expected Result Pass Correct Indication Shown Simulate Value to: <[35.0] [LT.140] Low Alarm displayed Alarm Low Low Simulate Value to: <[32.0] [LT.140] Low Low Alarm displayed If Engineering Name: Signature: Mane: Mane: Signature: Mane: Mane: Mane: Signature: Mane: Man

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	Electrical
	Engineering

J23-0064-ITC-009-01

Revision: Α Template:

ITC Type

	Engineering		SO2 Bottle 2 - Level		Project: Date:	MAC TLO HPU Upgrade 29/11/23
Analogue Inst	rument					
Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [LT_142_AI] into simulation mode (if avilable) and set value between: [0.0] & [150.0]	Relevant HMI Indicator displays corresponding value.		
4	Alarm Low		Simulate Value to: <[35.0]	[LT.142] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[32.0]	[LT.142] Low Low Alarm displayed		
Inspection Pass	sed Sign Off					
Date:						
Beyond Electric	cal Engineering	Name:		Signature:		
Client		Name:		Signature:		
Remarks or Re	emedial Action Required					
•	•				•	•
Remedial Act	tion Completed:					

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	Engineering

J23-0064-ITC-009-01

Revision:

Template: ITC_Type
Project: MAC TLO HPU Upgrade
Date: 29/11/23

NH3 Scrubber Base Tank Level

					Date:	29/11/23
Analogue Inst	rument					
Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [LT_303_AI] into simulation mode (if avilable) and set value between: [0.0] & [100.0]	Relevant HMI Indicator displays corresponding value.		
2	Alarm High High		Simulate Value to: >[95.0]	[LT.303] High High Alarm displayed		
3	Alarm High		Simulate Value to: >[85.0]	[LT.303] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[20.0]	[LT.303] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[10.0]	[LT.303] Low Low Alarm displayed		
Inspection Pass	sed Sign Off	•			•	
Date:						
Beyond Electric	al Engineering	Name:		Signature:		
Client		Name:		Signature:		
Remarks or Re	emedial Action Required					
Remedial Ac	Remedial Action Completed:					

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	Engineering

J23-0064-ITC-009-01

Revision: Template:

Project: Date:

ITC_Type MAC TLO HPU Upgrade 29/11/23

Scrubber Bund Level Transmitter

Analogue Inst	Analogue Instrument							
Test Number	Test Description			Expected Result	Pass	Comment		
1	Correct Indication Shown		Set [LT_319_AI] into simulation mode (if avilable) and set value between: [0.0] & [100.0]	Relevant HMI Indicator displays corresponding value.				
2	Alarm High High		Simulate Value to: >[10.0]	[LT.319] High High Alarm displayed				
3	Alarm High		Simulate Value to: >[5.0]	[LT.319] High Alarm displayed				
Inspection Pass	ed Sign Off							

Date:

Beyond Electrical Engineering Name: Signature: Client Name: Signature:

Remarks or Remedial Action Required

Remedial Action Completed:

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	Engineering

J23-0064-ITC-009-01

Revision: Template:

ITC_Type

Waste Water Tank Level MAC TLO HPU Upgrade 29/11/23 Project: Date: Analogue Instrument Test Number Test Description Pass Comment Pre-Requisites Test Action **Expected Result** Set [LT_320_AI] into simulation mode (if avilable) and set value between: [0.0] & Correct Indication Shown Relevant HMI Indicator displays corresponding value. [100.0] Alarm High High Simulate Value to: >[95.0] [LT.320] High High Alarm displayed 2 3 Alarm High Simulate Value to: >[85.0] [LT.320] High Alarm displayed 4 Alarm Low Simulate Value to: <[40.0] [LT.320] Low Alarm displayed 5 Alarm Low Low Simulate Value to: <[10.0] [LT.320] Low Low Alarm displayed Inspection Passed Sign Off Beyond Electrical Engineering Signature: Client Signature: Name: Remarks or Remedial Action Required Remedial Action Completed:

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	Electrica
	Engineering

J23-0064-ITC-009-01

Revision: Template:

ITC_Type

Waste Water pH analyser MAC TLO HPU Upgrade 29/11/23 Project: Date: Analogue Instrument Test Number Test Description Test Action Pass Comment Pre-Requisites **Expected Result** Set [AT_321_AI] into simulation mode (if avilable) and set value between: [0.0] Correct Indication Shown Relevant HMI Indicator displays corresponding value. & [14.0] Alarm High High Simulate Value to: >[9.0] [AT.321] High High Alarm displayed 2 3 Alarm High Simulate Value to: >[8.5] [AT.321] High Alarm displayed 4 Alarm Low Simulate Value to: <[6.0] [AT.321] Low Alarm displayed 5 Alarm Low Low Simulate Value to: <[5.5] [AT.321] Low Low Alarm displayed Inspection Passed Sign Off Beyond Electrical Engineering Signature: Client Signature: Name: Remarks or Remedial Action Required Remedial Action Completed:

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J23-0064-ITC-009-01

Revision: A

Template: ITC_Type

Hose Treatment Enclosure - SO2 Gas Analyser

	Engineering		Hose Treatment Enclosure - 302 Gas Analyser		Project:	MAC TLO HPU Upgrade
					Date:	29/11/23
Analogue Inst	rument					
est Number	Test Description			Expected Result	Pass	Comment
1	Correct Indication Shown		Set [AT_GSO1_AI] into simulation mode (if avilable) and set value between: [0.0] & [20.0]	Relevant HMI Indicator displays corresponding value.		
nspection Pass	sed Sign Off					
Date:						
Beyond Electric	al Engineering	Name:		Signature:		
lient		Name:		Signature:		
Remarks or Re	emedial Action Required					
	<u> </u>	·		<u> </u>		·
	·			·	•	
Remedial Act	tion Completed:					



J23-0064-ITC-009-01

Revision:

ITC_Type MAC TLO HPU Upgrade Template: Project:

Hose Treatment Enclosure - NH3 Gas Analyser

					Date:	29/11/23
Analogue Inst	rument					
Test Number	Test Description			Expected Result	Pass	Comment
1	Correct Indication Shown		Set [AT_GSO2_Al] into simulation mode (if avilable) and set value between: [0.0] & [100.0]	Relevant HMI Indicator displays corresponding value.		
Inspection Pass	sed Sign Off					
Date:						
Beyond Electrical Engineering Name:		Signature:				
Client Name:			Signature:			
Remarks or Remedial Action Required						
Remedial Action Completed:						

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	Engineering

Remedial Action Completed:

Commissioning

J23-0064-ITC-009-01 Revision:

ITC_Type MAC TLO HPU Upgrade 29/11/23 Template: **SO2 Vaporiser - SO2 Pressure** Project: Date: Analogue Instrument Test Number Test Description Pre-Requisites Test Action Pass Comment **Expected Result** Set [PT_152_AI] into simulation mode (if avilable) and set value between: [0.0] & Correct Indication Shown Relevant HMI Indicator displays corresponding value. [500.0] Alarm High High Simulate Value to: >[350.0] [PT.152] High High Alarm displayed 2 3 Alarm High Simulate Value to: >[330.0] [PT.152] High Alarm displayed Alarm Low Simulate Value to: <[270.0] [PT.152] Low Alarm displayed Inspection Passed Sign Off Beyond Electrical Engineering Name: Signature: Client Signature: Remarks or Remedial Action Required

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J23-0064-ITC-009-01 Revision: Α

Tomplator

ITC Type

	Engineering		SO2 Scrubber - Differential Pressure		Template: Project: Date:	ITC_Type MAC TLO HPU Upgrade 29/11/23
Analogue Insti	rument					
Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [PDT_180_AI] into simulation mode (if avilable) and set value between: [300.0] & [-10.0]	Relevant HMI Indicator displays corresponding value.		
4	Alarm Low		Simulate Value to: <[-5.0]	[PDT.180] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[-2.0]	[PDT.180] Low Low Alarm displayed		
Inspection Pass	sed Sign Off					_
Date:						
Beyond Electrical Engineering Name:			Signature:			
Client Name:			Signature:			
Remarks or Remedial Action Required						
Remedial Action Completed:						

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	Engineering

J23-0064-ITC-009-01 Revision:

Template:

ITC_Type MAC TLO HPU Upgrade 29/11/23 NH3 Vaporiser - NH3 Pressure Project: Date: Analogue Instrument Test Number Test Description Test Action Pass Comment Pre-Requisites **Expected Result** Set [PT_252_AI] into simulation mode (if avilable) and set value between: [0.0] & Correct Indication Shown Relevant HMI Indicator displays corresponding value. [500.0] Alarm High High Simulate Value to: >[350.0] [PT.252] High High Alarm displayed 2 3 Alarm High Simulate Value to: >[330.0] [PT.252] High Alarm displayed 4 Alarm Low Simulate Value to: <[270.0] [PT.252] Low Alarm displayed Inspection Passed Sign Off Beyond Electrical Engineering Name: Signature: Client Signature: Remarks or Remedial Action Required Remedial Action Completed:

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	Engineering

J23-0064-ITC-009-01 Revision:

Template:

ITC_Type MAC TLO HPU Upgrade 29/11/23 **NH3 Scrubber - Differential Pressure** Project: Date: Analogue Instrument Test Number Test Description Pre-Requisites Test Action Expected Result Pass Comment Set [PDT_280_AI] into simulation mode (if avilable) and set value between: Correct Indication Shown Relevant HMI Indicator displays corresponding value. [300.0] & [-10.0] Alarm Low Simulate Value to: <[-5.0] [PDT.280] Low Alarm displayed 4 5 Alarm Low Low Simulate Value to: <[-2.0] [PDT.280] Low Low Alarm displayed Inspection Passed Sign Off Beyond Electrical Engineering Name: Signature: Client Name: Signature: Remarks or Remedial Action Required Remedial Action Completed:

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	Engineering

J23-0064-ITC-009-01

Project:

Revision: A Template: IT

ITC_Type

MAC TLO HPU Upgrade

Air Receiver - Pressure

						29/11/23
nalogue Inst	rument					,,
	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment
1	Correct Indication Shown		Set [PT_670_AI] into simulation mode (if avilable) and set value between: [0.0] & [1000.0]	Relevant HMI Indicator displays corresponding value.		
3	Alarm High		Simulate Value to: >[800.0]	[PT.670] High Alarm displayed		
4	Alarm Low		Simulate Value to: <[600.0]	[PT.670] Low Alarm displayed		
5	Alarm Low Low		Simulate Value to: <[500.0]	[PT.670] Low Low Alarm displayed		
nspection Pas	sed Sign Off	,			'	·
Date:						
	al Engineering	Name:		Signature:		
Client Name: Signature:						
Remarks or R	emedial Action Required					
Remedial Ac	tion Completed:					
cculai Ac	don completed.					



Correct Indication Shown

Commissioning

J23-0064-ITC-009-01 Revision:

Date:

Template:

ITC_Type MAC TLO HPU Upgrade 29/11/23 Project:

SO2 Converter - Temperature

Analogue Instrument
Test Number Test Description Pre-Requisites Test Action Expected Result Pass Comment Set [TT_160_AI] into simulation mode (if avilable) and set value between: [0.0] & Relevant HMI Indicator displays corresponding value.

Inspection Passed Sign Off

Beyond Electrical Engineering Name: Signature: Client Name: Signature:

[600.0]

Remarks or Remedial Action Required

Remedial Action Completed:

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	Electrica
	Engineering

Remedial Action Completed:

Commissioning

J23-0064-ITC-009-01

Revision:

ITC_Type MAC TLO HPU Upgrade 29/11/23 Template: **SO2 Vaporiser - SO2 Discharge Temperature** Project: Date: Analogue Instrument Test Number Test Description Pre-Requisites Test Action Pass Comment **Expected Result** Set [TT_153_AI] into simulation mode (if avilable) and set value between: [0.0] & Correct Indication Shown Relevant HMI Indicator displays corresponding value. [100.0] Alarm High High Simulate Value to: >[70.0] [TT.153] High High Alarm displayed 2 3 Alarm High Simulate Value to: >[60.0] [TT.153] High Alarm displayed Alarm Low Simulate Value to: <[40.0] [TT.153] Low Alarm displayed Inspection Passed Sign Off Beyond Electrical Engineering Name: Signature: Client Signature: Remarks or Remedial Action Required

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	Electrica
	Engineering

Remedial Action Completed:

Commissioning

J23-0064-ITC-009-01 Revision:

ITC_Type MAC TLO HPU Upgrade 29/11/23 Template: **SO2 Converter - SO3 Discharge Temperature** Project: Date: Analogue Instrument Test Number Test Description Pre-Requisites Test Action Pass Comment **Expected Result** Set [TT_159_AI] into simulation mode (if avilable) and set value between: [0.0] & Correct Indication Shown Relevant HMI Indicator displays corresponding value. [600.0] Alarm High High Simulate Value to: >[520.0] [TT.159] High High Alarm displayed 2 3 Alarm High Simulate Value to: >[500.0] [TT.159] High Alarm displayed Alarm Low Simulate Value to: <[460.0] [TT.159] Low Alarm displayed Inspection Passed Sign Off Beyond Electrical Engineering Name: Signature: Client Signature: Remarks or Remedial Action Required

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	Electrica
	Engineering

J23-0064-ITC-009-01 Revision:

Template:

ITC_Type MAC TLO HPU Upgrade 29/11/23 **NH3 Vaporiser - NH3 Discharge Temperature** Project: Date: Analogue Instrument Test Number Test Description Pre-Requisites Test Action Pass Comment **Expected Result** Set [TT_251_AI] into simulation mode (if avilable) and set value between: [0.0] & Correct Indication Shown Relevant HMI Indicator displays corresponding value. [100.0] Alarm High High Simulate Value to: >[70.0] [TT.251] High High Alarm displayed 2 3 Alarm High Simulate Value to: >[60.0] [TT.251] High Alarm displayed Alarm Low Simulate Value to: <[40.0] [TT.251] Low Alarm displayed Inspection Passed Sign Off Beyond Electrical Engineering Name: Signature: Client Signature: Remarks or Remedial Action Required Remedial Action Completed:

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	Electrica
	Engineering

Remedial Action Completed:

Commissioning

J23-0064-ITC-009-01 Revision: A

Project:

Template:

ITC_Type MAC TLO HPU Upgrade 29/11/23

Air Preheater - Air Discharge Temperature

			•				
					Date:	29/11/23	
Analogue Instrument							
Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment	
1	Correct Indication Shown		Set [TT_653_AI] into simulation mode (if avilable) and set value between: [0.0] & [600.0]	Relevant HMI Indicator displays corresponding value.			
2	Alarm High High		Simulate Value to: >[550.0]	[TT.653] High High Alarm displayed			
3	Alarm High		Simulate Value to: >[510.0]	[TT.653] High Alarm displayed			
4	Alarm Low		Simulate Value to: <[450.0]	[TT.653] Low Alarm displayed			
Inspection Passed Sign Off							
Date:							
Beyond Electrical Engineering Name:		Name:		Signature:			
Client Name:		Name:		Signature:			
Remarks or Remedial Action Required							

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	Engineering

J23-0064-ITC-009-01

Revision:

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	Electrical Engineering Air Preheater - Air Pressure		Project:	ITC_Type MAC TLO HPU Upgrade 29/11/23					
Analogue Inst	nalogue Instrument								
Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment			
1	Correct Indication Shown		Set [PT_652_AI] into simulation mode (if avilable) and set value between: [0.0] & [500.0]	Relevant HMI Indicator displays corresponding value.					
2	Alarm High High		Simulate Value to: >[350.0]	[PT.652] High High Alarm displayed					
3	Alarm High		Simulate Value to: >[330.0]	[PT.652] High Alarm displayed					
Inspection Passed Sign Off									
Date:									
Beyond Electric	al Engineering	Name:		Signature:					
Client		Name:		Signature:					
Remarks or Remedial Action Required									
Remedial Action Completed:									

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Commissioning Heat Exchanger Discharge Temperature

J23-0064-ITC-009-01

Revision: A

ITC_Type MAC TLO HPU Upgrade

Project: Date:

					Date:	29/11/23	
Analogue Instrument							
Test Number	Test Description				Pass	Comment	
1	Correct Indication Shown		Set [TT_106_AI] into simulation mode (if avilable) and set value between: [0.0] & [600.0]	Relevant HMI Indicator displays corresponding value.			
Inspection Passed Sign Off							
Date:							

Date:

Beyond Electrical Engineering Name: Client Name: Signature: Signature:

Remarks or Remedial Action Required

Remedial Action Completed:

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Analogue Inst	Beyond Electrical Engineering	Electrical Engineering SO2 Vaporiser - Enclosure Temperature			J23-0064-ITC-009- Revision: Template: Project: Date:	- 01 A ITC_Type MAC TLO HPU Upgrade 29/11/23	
	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment	
1	Correct Indication Shown		Set [TT_144_AI] into simulation mode (if avilable) and set value between: [0.0] & [100.0]	Relevant HMI Indicator displays corresponding value.			
4	Alarm Low		Simulate Value to: <[45.0]	[TT.144] Low Alarm displayed			
5	Alarm Low Low		Simulate Value to: <[50.0]	[TT.144] Low Low Alarm displayed			
Inspection Passed Sign Off							
Date:							
	Beyond Electrical Engineering Nar			Signature:			
Client Name: Signature:		Signature:					
Remarks or Remedial Action Required							

Remedial Action Completed:

And and India	Beyond Electrical Engineering	Commissioning NH3 Vaporiser - Enclosure Temperature			J23-0064-ITC-009- Revision: Template: Project: Date:	A A ITC_Type MAC TLO HPU Upgrade 29/11/23	
Analogue Inst Test Number	Test Description	Pre-Requisites	Test Action	Expected Result	Pass	Comment	
	Correct Indication Shown	•	Set [TT_244_Al] into simulation mode (if aviilable) and set value between: [0.0] &	•			
4	Alarm Low		Simulate Value to: <[45.0]	[TT.244] Low Alarm displayed			
5	Alarm Low Low		Simulate Value to: <[50.0]	[TT.244] Low Low Alarm displayed			
Inspection Passed Sign Off							
Date: Beyond Electric Client	al Engineering	Name: Name:		Signature:			

Remedial Action Completed: