INSTRUMENT LOOP TEST PACKAGE

COVER PAGE

Project: Chemicals and Refining Integrated Singapore Project (CRISP)

Client: ExxonMobil Asia Pacific Private Limited

Contractor: Tecnicas Reunidas, S.A. (Singapore Branch)

Subcontractor: 1016025010 - SINOPEC

LOOP:	S8-F-0020
DESCRIPTION:	FG TO INCINERATOR
LOCATION / UNIT:	20700
SYSTEM / SUBSYSTEM:	20700-P-0401

INSTRUMENT LOOP TEST PACKAGE

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FOLDER: S8-F-0020

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Note 1: All reports marked as (*) shall be available for checking within SQMS Data Base at any moment.

Note 2: Engineering Master Documents as following should be available in RIE/DCS during Loop Test.

- Instrument Layout
- SIL Certificates
- Hook-Up drawings
- Level Plan for Level Instruments

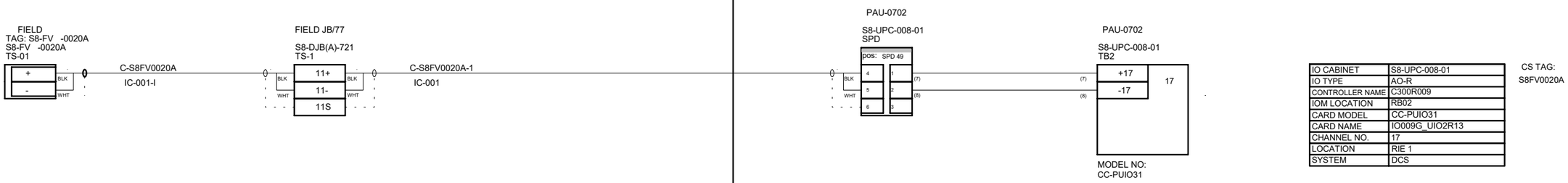
Content of the preliminary package Reviewed and Approved:

SUBCONTRACTOR	TR QUALITY SUPERVISOR	THIRD PARTY (If Required)	COMPANY (If Required)
DATE:	DATE:	DATE:	DATE:

DCS

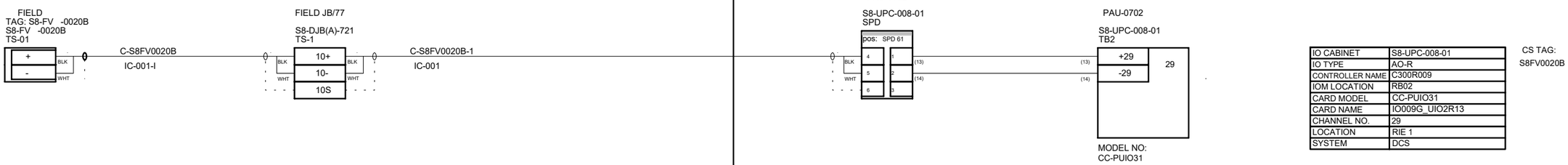
FIELD

FIELD DEVICE	SJB



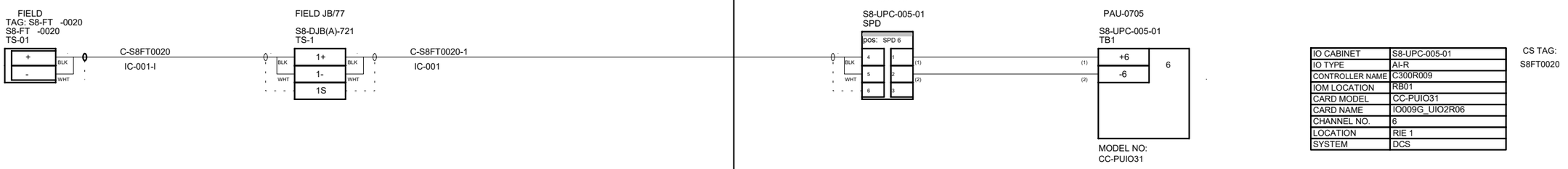
IO CABINET	S8-UPC-008-01
IO TYPE	AO-R
CONTROLLER NAME	C300R009
IOM LOCATION	RB02
CARD MODEL	CC-PUIO31
CARD NAME	IO009G_UIO2R13
CHANNEL NO.	17
LOCATION	RIE 1
SYSTEM	DCS

CS TAG:
S8FV0020A



IO CABINET	S8-UPC-008-01
IO TYPE	AO-R
CONTROLLER NAME	C300R009
IOM LOCATION	RB02
CARD MODEL	CC-PUIO31
CARD NAME	IO009G_UIO2R13
CHANNEL NO.	29
LOCATION	RIE 1
SYSTEM	DCS

CS TAG:
S8FV0020B



IO CABINET	S8-UPC-005-01
IO TYPE	AI-R
CONTROLLER NAME	C300R009
IOM LOCATION	RB01
CARD MODEL	CC-PUIO31
CARD NAME	IO009G_UIO2R06
CHANNEL NO.	6
LOCATION	RIE 1
SYSTEM	DCS

CS TAG:
S8FT0020

NOTES:

Rev	Description	Drawn	Checked	Approved	Date
1	IFC	ARB	RSM	FRB	6/2/2023
0	IFC	JJD	IPR	ACV	6/25/2021
A	IFR	JJD	IPR	ACV	3/15/2021

ExxonMobil Refining & Supply

Unit: S8-SULPHUR RECOVERY

Drawn: **Date:**

Checked: **Date:**

Approved: **Date:**

Approved By **Date:**

CRISP

CRISP

INSTRUMENT LOOP DIAGRAM

S8-F-0020

FUEL GAS TO H-20741

Dwg No: 10160-207-137-DC-0001

Sheet 1 of 1

M-20741
FLAME ARRESTOR
DP : 180.0 psig (12.4 barg) / FV @ ( )
DT : 465 °F (241 °C)
CET : ( )
INSUL. : CT

H-20741
INCINERATOR BURNER
RATED CAPACITY : 55.99 MMBTU/hr (16.4 MW)
TYPE : FD - MI
DUTY : 67.2 MMBTU/hr (19.7 MW)
DP : 50.0 psig (3.4 barg)
DT : LINING: 3200 °F (1760 °C)
SHELL: 650 °F (343 °C)
INSUL. : NI
TRIM : PA-207-9062-G1A-3-NI-R4

R-20741
INCINERATOR
SIZE : 12 ' 0.3 " (3664 mm) I.D. x 62 ' 0.3 " (18904 mm) T/T
DP : 50.0 psig (3.4 barg)
DT : LINING: 3200 °F (1760 °C)
SHELL: 650 °F (343 °C)
CET : 67 °F (19 °C)
MDMT : 67 °F (19 °C)
INSUL. : NI
TRIM : PA-207-9155-G1A-5-NI-R4

AIR CONTROL
TO XY-0126A/B
EMS-A1-20700-AXXX-0120

VENT GAS
FROM TK-20751
SULFUR DEGASSING PIT
EMS-A1-20700-AXXX-0118

TAIL GAS
FROM D-20731
SULFUR COALESCER
EMS-A1-20700-AXXX-0113

COMBUSTION AIR
FROM B-20741A/B
INCINERATOR AIR FAN
EMS-A1-20700-AXXX-0120

PILOT GAS
FROM PILOT IG-0002
EMS-A1-20700-AXXX-0143

STOICHIOMETRIC
AIR/FUEL GAS RATIO
FROM D1-AC-0015B
EMS-A1-20200-AXXX-0301

INSTRUMENT AIR
EMS-A1-21100-AX
XX-X121

O2 SIGNAL
FROM AC-0003
EMS-A1-20700-AXXX-0122

LP STEAM
EMS-A1-20700-AXXX-0152

MOL WT
FROM D1-AC-0015A
EMS-A1-20200-AXXX-0301

FUEL GAS
EMS-A1-20700-AX
XX-0156

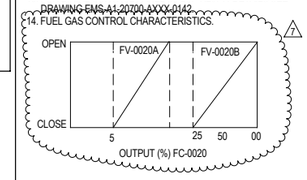
FOR CONTINUATION, SEE
EMS-A1-20700-AXXX-0122

GENERAL NOTES

A. FOR P&ID OF SYMBOLOGY AND AUXILIARY, SEE DRAWING EMS-A1-00000-AXXX-0101~0199.
B. ALL INSTRUMENT TAG NUMBERS ARE PRECEDED BY UNIT CODE S8 UNLESS OTHERWISE SPECIFIED
C. SPECIAL PIPING ITEMS TAG NUMBERS ARE PRECEDED BY UNIT CODE 207.

SPECIFIC NOTES

NOTES 1,5 HAVE BEEN DELETED.
2. DELETED.
3. LINE TO BE SLOPED (MINIMUM 1%) TOWARDS UPSTREAM OR DOWNSTREAM EQUIPMENT. NO POCKETS ALLOWED. WALL TEMPERATURE TO BE MAINTAINED AT 265°F (129°C)(MINIMUM). POTENTIAL COOLING EFFECTS OF HEAT SINKS, SUCH AS PIPE SUPPORTS, FLANGES, ETC. TO BE CONSIDERED IN THE DESIGN. SEE DETAIL "E" ON EMS-A1-20700-AXXX-00112 FOR INSTALLATION.
4. HOLDING TEMPERATURE FOR TRACING EQUAL TO OPERATING TEMPERATURE.
6. VERY LOW PRESSURE DROP FLOW MEASUREMENT.
7. SPARE NOZZLE FOR FLAME SCANNER IF USED NOZZLE IS NOT SUITABLE FOR MONITORING FLAME.
8. DELETED.
9. TUNING OF S8-TV-0037 IS REQUIRED.
10. MINIMUM OPENING MECHANICAL STOPPER SHALL BE PROVIDED.
11. PIPING SHALL BE DESIGNED TO AVOID SLUGS OF LIQUID WATER BEING INJECTED INTO THE INCINERATOR.
12. STEAM TRAPS TO BE INSTALLED AT LOW POINTS OF THE STEAM NETWORK.
13. FOR LOCAL CONTROL PANEL S8-LCP-H20741 DETAILS SEE DRAWING EMS-A1-20700-AXXX-0142.
14. FUEL GAS CONTROL CHARACTERISTICS.



PDP P&ID NUMBER: CI170600-P01-9665

HOLDS

29. DELETED.
30. DELETED.
38. DELETED.
39. DELETED.

REV	DESCRIPTION	BY	CHKD	APPRD	DATE
7	FOR CONSTRUCTION (REVISED 2)	ARV	EDC	ACV	16 Apr 2021
6	FOR CONSTRUCTION (REVISED)	ARV	ISB/EDC	JFP	11 Jun 2020
5	FOR CONSTRUCTION	ARV	ISB/EDC	KM	20 Dec 2019
4	FOR CONSTRUCTION WITH HOLDS	ARV	ISB/EDC	KM	26 Aug 2019
3	FOR DESIGN (REVISED)	MCG	ISB/EDC	JFP	24 May 2019
2	FOR ENGINEERING	TA	YS	KO	31 Jan 2019
1	FOR HAZOP	TA	YS	KO	07 Aug 2018
0	FOR APPROVAL	TA	YS	KO	31 May 2018

Chemicals and Refining Integrated Singapore Project
CONTR. No: E-LS-2428
DWG. No: 600-0-50-PR3004
APPROVED FOR CONSTRUCTION — DWG. REV. — DATE — SIGNATURE

ExxonMobil Asia Pacific Pte. Ltd.
ExxonMobil

TITLE
PIPING AND INSTRUMENT DIAGRAM
CRISP SULFUR RECOVERY UNIT
INCINERATOR

DRAWN	DATE	SCALE	REVISION
ARV	16/APR/2021		7

DRAWING NO. EMS-A1-20700-AXXX-0121 SHEET

LOOP PACKAGE INSPECTION REPORT

No.: 10160-CON-INS-27
Rev.: 1
Date: 10/Oct/23
Page: 1 of 1

PROJECT: 10160 - CRISP	**SUBCONTRACTOR:**
SYSTEM / SUBSYSTEM: / 20700-P-0401	**DRAWING:**
TAG NUMBER: S8-F-0020	**DESCRIPTION:**
FOLDER No.: S8-F-0020	**RFI No.:**

This certificate does not exempt the Subcontractor from the Terms of the Contract, Project Specifications or Quality Procedures but confirms that all these Tests have been performed according to them.

STATUS OF QUALITY INSPECTION REPORTS FOR TEST PACKAGE

1. CABLE TEST REPORT

CABLE TAG	TASK CODE	TASK DESCRIPTION	SIGN-OFF DATE
C-S8FV0020A-1	10160-CON-INS-01	INSULATION RESISTANCE TEST FOR CONTROL CABLES	2024-02-04
C-S8FV0020B-1	10160-CON-INS-01	INSULATION RESISTANCE TEST FOR CONTROL CABLES	2024-02-04
C-S8FT0020-1	10160-CON-INS-01	INSULATION RESISTANCE TEST FOR CONTROL CABLES	2024-02-04
C-S8FT0020	10160-CON-INS-01	INSULATION RESISTANCE TEST FOR CONTROL CABLES	
C-S8FV0020A	10160-CON-INS-01	INSULATION RESISTANCE TEST FOR CONTROL CABLES	
C-S8FV0020B	10160-CON-INS-01	INSULATION RESISTANCE TEST FOR CONTROL CABLES	

2. INSTRUMENT INSTALLATION

INSTRUMENT TAG	TASK CODE	TASK DESCRIPTION	SIGN-OFF DATE

3. JUNCTION BOX / CABINET / OPERATION STATION INSTALLATION

JB TAG	TASK CODE	TASK DESCRIPTION	SIGN-OFF DATE
S8-UPC-005-01	10160-CON-INS-28	SMART JB INSTALLATION & PRESERVATION	2023-05-30
S8-UPC-008-01	10160-CON-INS-28	SMART JB INSTALLATION & PRESERVATION	2023-05-30

REMARKS:

REVIEWED BY QC SUPERVISOR:	SIGNATURE:	PRINT NAME:	DATE:

INSULATION RESISTANCE TEST FOR CONTROL CABLES

PROJECT: 10160 - CRISP	SUBCONTRACTOR: 1016025010 - SINOPEC
SYSTEM / SUBSYSTEM: / 20700-P-0401	DRAWING:
TAG NUMBER: C-S8FV0020A-1	DESCRIPTION: INSTRUMENTATION CABLE
FOLDER No.: S8-F-0020	RFI No.: 10160-25010-IN-RFI-200927

This certificate does not exempt the Subcontractor from the Terms of the Contract, Project Specifications or Quality Procedures but confirms that all these Tests have been performed according to them.

INSULATION TEST	
CABLE IDENTIFICATION (TAG): C-S8FV0020A-1	CABLE TYPE (cores/mm2): 1 X 2 X 1.5
TEST VOLTAGE: 500 VDC (Duration: 1 min)	ACCEPTANCE TEST VALUE: > 1 MΩ
Insulation Test on Armour Vs Overall Shield: Ω	

NUMBER	ORIGIN	DESTINATION	INSULATION RESISTANCE (Ω)			CONTINUITY & CONNECTION CHECKED
			CONDUCTOR TO RACEWAY, ARMOUR OR EARTH	CONDUCTOR TO SHIELD	CONDUCTOR TO CONDUCTORS	
C-S8FV0020A-1	S8-DJB(A)-721	S8-UPC-008-01	> 550 MΩ	> 550MΩ	> 550MΩ	OK

TEST EQUIPMENT:	
EQUIPMENT NAME, MANUFACTURER AND MODEL:	INSULATION TESTER FLUKE-1503
SERIAL NUMBER:	50790065WS
CAL. CERTIFICATE NUMBER:	ELA23-1732
CALIBRATION DATE (FROM-TO):	17/MAR/2023 TO 17/MAR/2024

REMARKS:

*NOTE 1: conduct test with instruments disconnected
*NOTE 2: do not perform this test to coaxial / telecom cables
*NOTE 3: ORIGIN and DESTINATION conductor CONNECTIONS must be checked according to WIRING DIAGRAM
*NOTE 4: Test voltage Shall Not be more than 500volts for control cables

WITNESSED / REVIEWED BY:	SUBCONTRACTOR	TR QUALITY SUPERVISOR	THIRD PARTY (If Required)	COMPANY (If Required)
SIGNATURE:	SINOPEC QUALITY TEAM Vasantha Perera 01 FEB 2024 E&I Inspector CRISP PROJECT	INTEGRATED TEAM Ghulam Dastageer 03 FEB 2024 E&I Inspector CRISP PROJECT		(Note) Not applicable with Integrated Quality Team set up
PRINT NAME:				
DATE:				

INSULATION RESISTANCE TEST FOR CONTROL CABLES

PROJECT: 10160 - CRISP	SUBCONTRACTOR: 1016025010 - SINOPEC
SYSTEM / SUBSYSTEM: / 20700-P-0401	DRAWING:
TAG NUMBER: C-S8FV0020B-1	DESCRIPTION: INSTRUMENTATION CABLE
FOLDER No.: S8-F-0020	RFI No.: 10160-25010-IN-RFI-200927

This certificate does not exempt the Subcontractor from the Terms of the Contract, Project Specifications or Quality Procedures but confirms that all these Tests have been performed according to them.

INSULATION TEST	
CABLE IDENTIFICATION (TAG): C-S8FV0020B-1	CABLE TYPE (cores/mm2): 1 X 2 X 1.5
TEST VOLTAGE: 500 VDC (Duration: 1 min)	ACCEPTANCE TEST VALUE: > 1 MΩ
Insulation Test on Armour Vs Overall Shield: Ω	

NUMBER	ORIGIN	DESTINATION	INSULATION RESISTANCE (Ω)			CONTINUITY & CONNECTION CHECKED
			CONDUCTOR TO RACEWAY, ARMOUR OR EARTH	CONDUCTOR TO SHIELD	CONDUCTOR TO CONDUCTORS	
C-S8FV0020B-1	S8-DJB(A)-721	S8-UPC-008-01	>550MΩ	>550MΩ	>550MΩ	OK

TEST EQUIPMENT:	
EQUIPMENT NAME, MANUFACTURER AND MODEL:	INSULATION TESTER FLUKE-1503
SERIAL NUMBER:	50790065WS
CAL. CERTIFICATE NUMBER:	ELA23-1732
CALIBRATION DATE (FROM-TO):	17/MAR/2023 TO 17/MAR/2024

REMARKS:

*NOTE 1: conduct test with instruments disconnected
*NOTE 2: do not perform this test to coaxial / telecom cables
*NOTE 3: ORIGIN and DESTINATION conductor CONNECTIONS must be checked according to WIRING DIAGRAM
*NOTE 4: Test voltage Shall Not be more than 500volts for control cables

WITNESSED / REVIEWED BY:	SUBCONTRACTOR	TR QUALITY SUPERVISOR	THIRD PARTY (If Required)	COMPANY (If Required)
SIGNATURE:	SINOPEC QUALITY TEAM Vasantha Perera 01 FEB 2024 E&I Inspector CRISP PROJECT	INTEGRATED TEAM Ghulam Dastageer 03 FEB 2024 E&I Inspector CRISP PROJECT		(Note) Not applicable with Integrated Quality Team set up
PRINT NAME:				
DATE:				

INSULATION RESISTANCE TEST FOR CONTROL CABLES

No.: 10160-CON-INS-01
Rev.: 2
Date: 20/Oct/22
Page 1 of 1

PROJECT: 10160 - CRISP	**SUBCONTRACTOR: 1016025010 - SINOPEC**
SYSTEM / SUBSYSTEM: / 20700-P-0401	**DRAWING:**
TAG NUMBER: C-S8FT0020-1	**DESCRIPTION: INSTRUMENTATION CABLE**
FOLDER No.: S8-F-0020	**RFI No.: 10160-25010-IN-RFI-200891**

This certificate does not exempt the Subcontractor from the Terms of the Contract, Project Specifications or Quality Procedures but confirms that all these Tests have been performed according to them.

INSULATION TEST	
CABLE IDENTIFICATION (TAG): C-S8FT0020-1	CABLE TYPE (cores/mm2): 1 X 2 X 1.5
TEST VOLTAGE: 500 VDC (Duration: 1 min)	ACCEPTANCE TEST VALUE: > 1 MΩ
Insulation Test on Armour Vs Overall Shield: — Ω	

NUMBER	ORIGIN	DESTINATION	INSULATION RESISTANCE (Ω)			CONTINUITY & CONNECTION CHECKED
			CONDUCTOR TO RACEWAY, ARMOUR OR EARTH	CONDUCTOR TO SHIELD	CONDUCTOR TO CONDUCTORS	
C-S8FT0020-1	S8-DJB(A)-721	S8-UPC-005-01	>550 MΩ	>550 MΩ	>550MΩ	OK

TEST EQUIPMENT:	
EQUIPMENT NAME, MANUFACTURER AND MODEL:	INSULATION TESTER FLUKE-1503
SERIAL NUMBER:	50790065WS
CAL. CERTIFICATE NUMBER:	ELA23-1732
CALIBRATION DATE (FROM-TO):	17/MAR/2023 TO 17/MAR/2024

REMARKS:

*NOTE 1: conduct test with instruments disconnected
*NOTE 2: do not perform this test to coaxial / telecom cables
*NOTE 3: ORIGIN and DESTINATION conductor CONNECTIONS must be checked according to WIRING DIAGRAM
*NOTE 4: Test voltage Shall Not be more than 500volts for control cables

WITNESSED / REVIEWED BY:	SUBCONTRACTOR	TR QUALITY SUPERVISOR	THIRD PARTY (If Required)	COMPANY (If Required)
SIGNATURE:	SINOPEC QUALITY TEAM Vasantha.P 02 FEB 2024 E&I Inspector CRISP PROJECT	INTEGRATED TEAM Ghulam Dastageer 03 FEB 2024 E&I Inspector CRISP PROJECT		(Note) Not applicable with Integrated Quality Team set up
PRINT NAME:				
DATE:				

INSULATION RESISTANCE TEST FOR CONTROL CABLES

PROJECT: 10160 - CRISP	**SUBCONTRACTOR:**
SYSTEM / SUBSYSTEM: / 20700-P-0401	**DRAWING:**
TAG NUMBER: C-S8FT0020	**DESCRIPTION: INSTRUMENTATION CABLE**
FOLDER No.: S8-F-0020	**RFI No.:**

This certificate does not exempt the Subcontractor from the Terms of the Contract, Project Specifications or Quality Procedures but confirms that all these Tests have been performed according to them.

INSULATION TEST			
CABLE IDENTIFICATION (TAG):		CABLE TYPE (cores/mm2):	
TEST VOLTAGE:	VDC (Duration: 1 min)	ACCEPTANCE TEST VALUE: >	MΩ
Insulation Test on Armour Vs Overall Shield:	Ω		

NUMBER	ORIGIN	DESTINATION	INSULATION RESISTANCE (Ω)			CONTINUITY & CONNECTION CHECKED
			CONDUCTOR TO RACEWAY, ARMOUR OR EARTH	CONDUCTOR TO SHIELD	CONDUCTOR TO CONDUCTORS	

TEST EQUIPMENT:	
EQUIPMENT NAME, MANUFACTURER AND MODEL:	
SERIAL NUMBER:	
CAL. CERTIFICATE NUMBER:	
CALIBRATION DATE (FROM-TO):	

REMARKS:

*NOTE 1: conduct test with instruments disconnected
*NOTE 2: do not perform this test to coaxial / telecom cables
*NOTE 3: ORIGIN and DESTINATION conductor CONNECTIONS must be checked according to WIRING DIAGRAM
*NOTE 4: Test voltage Shall Not be more than 500volts for control cables

WITNESSED / REVIEWED BY:	SUBCONTRACTOR	TR QUALITY SUPERVISOR	THIRD PARTY (If Required)	COMPANY (If Required)
SIGNATURE:				
PRINT NAME:				
DATE:				(Note) Not applicable with Integrated Quality Team set up

INSULATION RESISTANCE TEST FOR CONTROL CABLES

PROJECT: 10160 - CRISP	**SUBCONTRACTOR:**
SYSTEM / SUBSYSTEM: / 20700-P-0401	**DRAWING:**
TAG NUMBER: C-S8FV0020A	**DESCRIPTION: INSTRUMENTATION CABLE**
FOLDER No.: S8-F-0020	**RFI No.:**

This certificate does not exempt the Subcontractor from the Terms of the Contract, Project Specifications or Quality Procedures but confirms that all these Tests have been performed according to them.

INSULATION TEST			
CABLE IDENTIFICATION (TAG):		CABLE TYPE (cores/mm2):	
TEST VOLTAGE:	VDC (Duration: 1 min)	ACCEPTANCE TEST VALUE: >	MΩ
Insulation Test on Armour Vs Overall Shield:	Ω		

NUMBER	**ORIGIN**	**DESTINATION**	**INSULATION RESISTANCE (Ω)**			**CONTINUITY & CONNECTION CHECKED**
			CONDUCTOR TO RACEWAY, ARMOUR OR EARTH	**CONDUCTOR TO SHIELD**	**CONDUCTOR TO CONDUCTORS**	

TEST EQUIPMENT:	
EQUIPMENT NAME, MANUFACTURER AND MODEL:	
SERIAL NUMBER:	
CAL. CERTIFICATE NUMBER:	
CALIBRATION DATE (FROM-TO):	

REMARKS:

*NOTE 1: conduct test with instruments disconnected
*NOTE 2: do not perform this test to coaxial / telecom cables
*NOTE 3: ORIGIN and DESTINATION conductor CONNECTIONS must be checked according to WIRING DIAGRAM
*NOTE 4: Test voltage Shall Not be more than 500volts for control cables

WITNESSED / REVIEWED BY:	**SUBCONTRACTOR**	**TR QUALITY SUPERVISOR**	**THIRD PARTY (If Required)**	**COMPANY (If Required)**
SIGNATURE:				(Note) Not applicable with Integrated Quality Team set up
PRINT NAME:				
DATE:				

INSULATION RESISTANCE TEST FOR CONTROL CABLES

PROJECT: 10160 - CRISP	**SUBCONTRACTOR:**
SYSTEM / SUBSYSTEM: / 20700-P-0401	**DRAWING:**
TAG NUMBER: C-S8FV0020B	**DESCRIPTION: INSTRUMENTATION CABLE**
FOLDER No.: S8-F-0020	**RFI No.:**

This certificate does not exempt the Subcontractor from the Terms of the Contract, Project Specifications or Quality Procedures but confirms that all these Tests have been performed according to them.

INSULATION TEST			
CABLE IDENTIFICATION (TAG):		CABLE TYPE (cores/mm2):	
TEST VOLTAGE:	VDC (Duration: 1 min)	ACCEPTANCE TEST VALUE: >	MΩ
Insulation Test on Armour Vs Overall Shield:	Ω		

NUMBER	**ORIGIN**	**DESTINATION**	**INSULATION RESISTANCE (Ω)**			**CONTINUITY & CONNECTION CHECKED**
			CONDUCTOR TO RACEWAY, ARMOUR OR EARTH	**CONDUCTOR TO SHIELD**	**CONDUCTOR TO CONDUCTORS**	

TEST EQUIPMENT:	
EQUIPMENT NAME, MANUFACTURER AND MODEL:	
SERIAL NUMBER:	
CAL. CERTIFICATE NUMBER:	
CALIBRATION DATE (FROM-TO):	

REMARKS:

*NOTE 1: conduct test with instruments disconnected
*NOTE 2: do not perform this test to coaxial / telecom cables
*NOTE 3: ORIGIN and DESTINATION conductor CONNECTIONS must be checked according to WIRING DIAGRAM
*NOTE 4: Test voltage Shall Not be more than 500volts for control cables

WITNESSED / REVIEWED BY:	**SUBCONTRACTOR**	**TR QUALITY SUPERVISOR**	**THIRD PARTY (If Required)**	**COMPANY (If Required)**
SIGNATURE:				
PRINT NAME:				
DATE:				(Note) Not applicable with Integrated Quality Team set up

CRISP TECNICAS REUNIDAS SINGAPORE BRANCH ExxonMobil	SMART JB INSTALLATION & PRESERVATION	No.: 10160-CON-INS-28 Rev.: 0 Date: 24/Nov/22 Page 1 of 1

PROJECT: 10160 - CRISP	SUBCONTRACTOR: 1016125402 - BJC
SYSTEM / SUBSYSTEM: / 20700-I-0301	DRAWING:
TAG NUMBER: S8-UPC-005-01	DESCRIPTION: DCS Smart Junction Box
FOLDER No.:	RFI No.: 10160-25402-IN-RFI-200465

This certificate does not exempt the Subcontractor from the Terms of the Contract, Project Specifications or Quality Procedures but confirms that all these Tests have been performed according to them.

No.	DESCRIPTION	ACCEPTED	REJECTED	N/A
1	Foundation and / or structure installed as per details and released	✓		
2	Equipment properly installed as per layout drawing and typical details	✓		
3	Support installation according to latest drawings and typical details	✓		
4	Identification and Tag numbering correct and fitted as per schedule	✓		
5	Equipment undamaged and access is not obstructed	✓		
6	Mounting bolt tightened secured and galvanic isolator installted where required (teflon sheet)	✓		
7	Levelling and alignment is satisfactory	✓		
8	Confirm that all seals and enclosure latches work and sealing properly	✓		
9	Earthing as per typical detail drawing and correctly installed (EQ bonding, IS earthing, Non - IS earthing) is lower than 0.1 ohm	✓		
10	Ensure that SJB/LCP/FOPP are protected from direct sunlight.	✓		
11	Ensure that The SJB/LCP/FOPP installation facilitate a natural air convection around the enclosure, minimum following criteria shall be considered. - There must be at least 8 inches (20 cm) of clearance between adjacent enclosures. - There must be at least 4 inches (10 cm) of clearance between the cabinet and surrounding walls, except for the mounting wall. -There must not be any obstruction within 24 inches (60 cm) from the top of the cabinet that would hinder air circulation. The bending radious for FOC is not exceeding the requirement: 1) FO-SM-48 (20 x Outer Diameter (Installation)) = 300 mm 2) FO-SM-4/6 (20 x Outer Diameter (Installation)) = 240 mm	✓		
12	Ensure that the SJB/LCP/FOPP are not installed closed to heat producing surfaces	✓		
13	Ensure that not objects are place top of the SJB/LCP/FOPP and ensure the air flow path around the SJB/LCP/FOPP is free of obstruction.	✓		
14	Ensure that the SJB/LCP/FOPP are protected for wheater conditions (high-humidity or rainy conditions), the interior does not get wet or overheated.	✓		
15	Ensure that the SJB/LCP/FOPP are equiped with a dry cloth before closing the door.	✓		

	PRESERVATION - DESCRIPTION	ACCEPTED	REJECTED	N/A
1	VCI Emitters provided according to the volume inside the JB	✓		
2	VCI sheet Fully wrapped and propally sealed to prevent any dust contamination	✓		
3	Preservation Tag provided with Accepted warning sign	✓		
4	Avoid opening / installing the SJB/LCP/FOPP in high-humidity or rainy conditions, so the interior does not get wet or overheated.	✓		

REMARKS:

Referances details :

SIF CABINET LAYOUT DRAWING	: V-1016010020-0012/0037/0041/0045/0049/0058/0060/0062/0065/0075/0076
GENERAL ARRANGEMENT WITH DIMENSIONS AND LOADING DATA	: V-1016010100-0019/0020/0021/0022/0023/0024/0026/0027
GENERAL ARRANGEMENT DRAWING - TYPICAL UPC CABINETS AND LIST	: V-1016010010-0032
INSTRUMENT INSTALLATION MOUNTING DETAILS	: 10160-000-137-CP-0001

WITNESSED / REVIEWED BY:	SUBCONTRACTOR	TR CONSTRUCTION SUPERVISOR	THIRD PARTY (If Required)	COMPANY (If Required)
SIGNATURE:	Watchai Ng	INTEGRATED TEAM Somsak Ph. 30 MAY 2023 CRISP PROJECT		
PRINT NAME:	WATCHARA NG			
DATE:	29/05/23			(Note) Not applicable with Integrated Quality Team set up

CRISP / TECNICAS REUNIDAS SINGAPORE BRANCH / ExxonMobil	SMART JB INSTALLATION & PRESERVATION	No.: 10160-CON-INS-28 Rev.: 0 Date: 24/Nov/22 Page 1 of 1

PROJECT: 10160 - CRISP	SUBCONTRACTOR: 1016125402 - BJC
SYSTEM / SUBSYSTEM: / 20700-I-0301	DRAWING:
TAG NUMBER: S8-UPC-008-01	DESCRIPTION: DCS Smart Junction Box
FOLDER No.:	RFI No.: 10160-25402-IN-RFI-200467

This certificate does not exempt the Subcontractor from the Terms of the Contract, Project Specifications or Quality Procedures but confirms that all these Tests have been performed according to them.

No.	DESCRIPTION	ACCEPTED	REJECTED	N/A
1	Foundation and / or structure installed as per details and released	✓		
2	Equipment properly installed as per layout drawing and typical details	✓		
3	Support installation according to latest drawings and typical details	✓		
4	Identification and Tag numbering correct and fitted as per schedule	✓		
5	Equipment undamaged and access is not obstructed	✓		
6	Mounting bolt tightened secured and galvanic isolator installted where required (teflon sheet)	✓		
7	Levelling and alignment is satisfactory	✓		
8	Confirm that all seals and enclosure latches work and sealing properly	✓		
9	Earthing as per typical detail drawing and correctly installed (EQ bonding, IS earthing, Non - IS earthing) is lower than 0.1 ohm	✓		
10	Ensure that SJB/LCP/FOPP are protected from direct sunlight.	✓		
11	Ensure that The SJB/LCP/FOPP installation facilitate a natural air convection around the enclosure, minimum following criteria shall be considered. - There must be at least 8 inches (20 cm) of clearance between adjacent enclosures. - There must be at least 4 inches (10 cm) of clearance between the cabinet and surrounding walls, except for the mounting wall. -There must not be any obstruction within 24 inches (60 cm) from the top of the cabinet that would hinder air circulation. The bending radious for FOC is not exceeding the requirement: 1) FO-SM-48 (20 x Outer Diameter (Installation)) = 300 mm 2) FO-SM-4/6 (20 x Outer Diameter (Installation)) = 240 mm	✓		
12	Ensure that the SJB/LCP/FOPP are not installed closed to heat producing surfaces	✓		
13	Ensure that not objects are place top of the SJB/LCP/FOPP and ensure the air flow path around the SJB/LCP/FOPP is free of obstruction.	✓		
14	Ensure that the SJB/LCP/FOPP are protected for wheater conditions (high-humidity or rainy conditions), the interior does not get wet or overheated.	✓		
15	Ensure that the SJB/LCP/FOPP are equiped with a dry cloth before closing the door.	✓		

	PRESERVATION - DESCRIPTION	ACCEPTED	REJECTED	N/A
1	VCI Emitters provided according to the volume inside the JB	✓		
2	VCI sheet Fully wrapped and propally sealed to prevent any dust contamination	✓		
3	Preservation Tag provided with Accepted warning sign	✓		
4	Avoid opening / installing the SJB/LCP/FOPP in high-humidity or rainy conditions, so the interior does not get wet or overheated.	✓		

REMARKS:

Referances details :

SIE CABINET LAYOUT DRAWING	: V-1016010020-0012/0037/0041/0045/0049/0058/0060/0062/0065/0075/0076
GENERAL ARRANGEMENT WITH DIMENSIONS AND LOADING DATA	: V-1016010100-0019/0020/0021/0022/0023/0024/0026/0027
GENERAL ARRANGEMENT DRAWING - TYPICAL UPC CABINETS AND LIST	: V-1016010010-0032
INSTRUMENT INSTALLATION MOUNTING DETAILS	: 10160-000-137-CP-0001

WITNESSED / REVIEWED BY:	SUBCONTRACTOR	TR CONSTRUCTION SUPERVISOR	THIRD PARTY (If Required)	COMPANY (If Required)
SIGNATURE:		INTEGRATED TEAM Somsak Ph.		
PRINT NAME:	TEERAWAT B.	29 MAY 2023		
DATE:	27-05-23	CRISP PROJECT		(Note) Not applicable with Integrated Quality Team set up

成績表
TEST CERTIFICATE

製品名称 DY形 渦流量計 PRODUCT NAME DY VORTEX FLOWMETER	タグNO. TAG NO. S8-FT-0020
形名(一体形または検出器形名) MODEL DY080-JBLBA2-2D/SF2/SCT/E02/T02/R1	計器番号 SERIAL NO. S5X501242
手配 NO. ORDER NO. 1006141558-000010-0001	
	タグNO. TAG NO. =======
変換器形名 CONVERTER MODEL =======	計器番号 SERIAL NO. =======

測定範囲
MEASURING RANGE 0 - 501 kcf/d

実流量検査 ACTUAL FLOW TEST

許容差 ACCURACY ± 1.0 %
水温 WATER TEMP. 18.8 ℃
水の動粘度 WATER KINEMATICS VISCOSITY 1.0331 10^{-6} m²/s {cSt}

Re数 Reynolds number	流速 FLOW VELOCITY Vi (m/s)	流量係数 FLOW COEFFICIENT Ki (P/L)	平均流量係数 MEAN FLOW COEFFICIENT K (P/L)	誤差 ERROR (Ki-K)/K*100 (%)
51 *10 ³	1.03	8.788		+0.23
101 *10 ³	2.05	8.755	8.768	-0.15
200 *10 ³	4.04	8.748		-0.23
274 *10 ³	5.53	8.760		-0.09

K-ファクタ
K-factor KM 8.770 P/L

項目 ITEM		結果 RESULT	項目 ITEM	結果 RESULT
絶縁抵抗 INSULATION RESISTANCE	電源端子 - アース端子 POWER TERM to GND TERM 20MΩ/500V DC	良, GOOD	フィールドバス通信出力 FIELDBUS OUTPUT	=======
			アナログ出力検査 ANALOG OUTPUT	良, GOOD
耐電圧検査 DIELECTRIC STRENGTH	電源端子 - アース端子 POWER TERM to GND TERM 500V AC/1 min	良, GOOD	パルス出力検査 PULSE OUTPUT	良, GOOD
			通信機能検査 COMMUNICATION FUNCTION	良, GOOD
耐圧検査 PRESSURE TEST	試験圧力 7.5 MPa TEST PRESSURE 10 min	良, GOOD	表示器動作確認 DISPLAY	良, GOOD
			温度検査(/MVのみ) THERMOMETER	=======
プロセス接続口 PROCESS CONNECTION	ANSI Class 300 フランジ形 ANSI Class 300 Flange Type	良, GOOD	外観 APPEARANCE	良·GOOD

NOTES

日付 DATE	2021-04-18	室内温度. 湿度 AMBIENT TEMP. &HUM.	21 ℃ 61 %
検査者 INSPECTOR	JIANG QIANG	承認者 APPROVED BY	WU HAO WH

成　績　表
TEST CERTIFICATE

計器番号
SERIAL No. S5X501242

パラメータの設定値
PARAMETER SETTINGS

設定パラメータ PARAMETER		設定値 VALUE	○有効/Effective						
Brain code (参考)	HART通信形 HART Communication (DY-E, DYA-E, DY-J, DYA-J) 名称 NAME		a	b	c	d	e	f	g
B20	Online/Device setup/Review/Review 2/Contact output	OFF	○	○	○	○	○	○	○
B21	Online/Device setup/Review/Review 2/Pulse rate	1.0	○	○	○	○	○	○	○
B30	Online/Device setup/Review/Review 2/Upper display	FLOW RATE	○	○	○	○	○	○	○
B31	Online/Device setup/Review/Review 2/Lower display	BLANK	○	○	○	○	○	○	○
B40	Online/Device setup/Review/Review 2/Total start/stop	STOP	○	○	○	○	○	○	○
B45	Online/Device setup/Review/Review 2/Total rate	1.0	○	○	○	○	○	○	○
C10	Online/Device setup/Review/Review 1/Tag	S8-FT-00	○	○	○	○	○	○	○
C10	Online/Device setup/Review/Review 1/ Long Tag *2	S8-FT-0020	○	○	○	○	○	○	○
C20	Online/Device setup/Review/Review 2/Fluid	GAS/STEAM:Volume	○	○	○				
C22	(Online/Device setup/Review/Review 2/Flow span)	kcf	○						
C25	(Online/Device setup/Review/Review 2/Process density)			○					
C26	Online/Device setup/Review/Review 2/Process density			○					
C27	(Online/Device setup/Review/Review 2/Flow span)			○					
C30	(Online/Device setup/Review/Review 2/Process temp)				○				
C31	Online/Device setup/Review/Review 2/Process temp				○				
C32	Online/Device setup/Review/Review 2/Base temp				○				
C33	(Online/Device setup/Review/Review 2/Process pressure)				○				
C34	Online/Device setup/Review/Review 2/Process pressure				○				
C35	Online/Device setup/Review/Review 2/Base pressure				○				
C36	Online/Device setup/Review/Review 2/Deviation				○				
C37	(Online/Device setup/Review/Review 2/Flow span)				○				
C40	(Online/Device setup/Review/Review 2/Flow span)	/d	○	○	○				
C45	Online/Device setup/Review/Review 2/Flow span	501	○	○	○				
D10	Online/Device setup/Review/Review 2/Low cut *1	17.498	○	○	○	○	○	○	○
D20	(Online/Device setup/Review/Review 2/Process temp)	deg C	○	○	○	○	○	○	○
D21	Online/Device setup/Review/Review 2/Process temp	48.9	○	○	○	○	○	○	○
D25	(Online/Device setup/Review/Review 2/Process density)	kg/m3	○	○	○	○	○	○	○
D26	Online/Device setup/Review/Review 2/Process density	4.003	○	○	○	○	○	○	○
E10	Online/Device setup/Review/Review 3/Nominal size	80mm	○	○	○	○	○	○	○
E20	Online/Device setup/Review/Review 3/Body type	Low Flow Unit(1)	○	○	○	○	○	○	○
E30	Online/Device setup/Review/Review 3/Sensor type	Standard	○	○	○	○	○	○	○
E40	(Online/Device setup/Review/Review 3/K-factor)	P/L	○	○	○	○	○	○	○
E41	Online/Device setup/Review/Review 3/K-factor	8.770	○	○	○	○	○	○	○
E50	Online/Device setup/Review/Review 3/Detector No	S5X501242	○	○	○	○	○	○	○
F10	Online/Device setup/Review/Review 4/Function					○	○	○	○
F12	(Online/Device setup/Review/Review 2/Flow span)					○			
F14	(Online/Device setup/Review/Review 2/Process pressure)						○		
F15	Online/Device setup/Review/Review 2/Process pressure						○		
F16	(Online/Device setup/Review/Review 2/Flow span)						○		
F18	(Online/Device setup/Review/Review 2/Process temp)							○	
F19	Online/Device setup/Review/Review 2/Base temp							○	
F20	(Online/Device setup/Review/Review 2/Process pressure)							○	
F21	Online/Device setup/Review/Review 2/Process pressure							○	
F22	Online/Device setup/Review/Review 2/Base pressure							○	
F23	Online/Device setup/Review/Review 2/Deviation							○	
F24	(Online/Device setup/Review/Review 2/Flow span)							○	
F26	(Online/Device setup/Review/Review 2/Process density)								○
F27	Online/Device setup/Review/Review 4/Base density								○
F32	(Online/Device setup/Review/Review 2/Flow span)								○
F35	(Online/Device setup/Review/Review 2/Flow span)					○	○	○	○
F40	Online/Device setup/Review/Review 2/Flow span					○	○	○	○

STANDARD	CASE a: if C20[Fluid]= "LIQUID:Volume"or "GAS/STEAM:Volume" CASE b: if C20[Fluid]= "LIQUID:Mass" or "GAS/STEAM:Mass" CASE c: if C20[Fluid]= "GAS:STD/Normal"
/MV	CASE a: if (F10[Function]= "Monitor Only "or"Not use") and (C20[Fluid]= "LIQUID:Volume"or "GAS/STEAM:Volume") CASE b: if (F10[Function]= "Monitor Only "or"Not use") and (C20[Fluid]= "LIQUID:Mass" or "GAS/STEAM:Mass") CASE c: if (F10[Function]= "Monitor Only "or"Not use") and C20[Fluid]= "GAS:STD/Normal" CASE d: if F10[Function]= "Saturated Steam" CASE e: if F10[Function]= "Superheat Steam" CASE f: if F10[Function]= "GAS:STD/Normal" CASE g: if F10[Function]= "LIQUID:Mass"

*1) UHIでは有効桁で表示されます。HART Communicator displays the value by an effective digit.
*2) DY-J/DYA-J、かつHART通信REV=7の場合のみ DY-J/DYA-J and HART Protocol Rev=7

LOOP TEST

PROJECT: 10160 - CRISP	**SUBCONTRACTOR:**
SYSTEM / SUBSYSTEM: / 20700-P-0401	**DRAWING:**
TAG NUMBER: S8-F-0020	**DESCRIPTION: FG TO INCINERATOR**
FOLDER No.: S8-F-0020	**RFI No.:**

This certificate does not exempt the Subcontractor from the Terms of the Contract, Project Specifications or Quality Procedures but confirms that all these Tests have been performed according to them.

TRANSMITTER / ANALYZER / FGS

TAG:	MANUFACTURER AND MODEL:	SERIAL Nº:
RANGE & EU	DEVICE:	ICSS:

FIELD TO DCS / ESD / FGS

	INPUT FROM FIELD		DCS READING			
%	mA	PROCESS VALUE	%	DCS/ESD/FGS VALUE	RESULT	REMARKS
0						
25						
50						TX CHARACERISTIC LINEAR _____ SQRT _____
75						TX FAILURE DIRECTION LO_____ HI _____
100						SENSOR BURNOUT DIRECTION (ONLY TEMPERATURE TX): LO_____ HI _____
75						TX STANDART SATURATION LIMIT (LO: 3,8 HI: 20,5 mAmp) LO_____ HI_____
50						FAULT SET POINT (<= 3,65 AND >= 20,8 mAmp) LO_____ HI _____
25						LOCAL DISPLAY: _____ LINEAR _____ SQRT _____
0						RANGE Unit of Measurement

TAG:	MANUFACTURER AND MODEL:	SERIAL Nº:
RANGE & EU	DEVICE:	ICSS:

FIELD TO DCS / ESD / FGS

	INPUT FROM FIELD		DCS READING			
%	mA	PROCESS VALUE	%	DCS/ESD/FGS VALUE	RESULT	REMARKS
0						
25						
50						TX CHARACERISTIC LINEAR _____ SQRT _____
75						TX FAILURE DIRECTION LO_____ HI _____
100						SENSOR BURNOUT DIRECTION (ONLY TEMPERATURE TX): LO_____ HI _____
75						TX STANDART SATURATION LIMIT (LO: 3,8 HI: 20,5 mAmp) LO_____ HI_____
50						FAULT SET POINT (<= 3,65 AND >= 20,8 mAmp) LO_____ HI _____
25						LOCAL DISPLAY: _____ LINEAR _____ SQRT _____
0						RANGE Unit of Measurement

WITNESSED / REVIEWED BY:	SUBCONTRACTOR	TR PRECOMMISSIONING SUPERVISOR	THIRD PARTY (If Required)	COMPANY (If Required)
SIGNATURE:				
PRINT NAME:				
DATE:				(Note) Not applicable with Integrated Quality Team set up

LOOP TEST

PROJECT: 10160 - CRISP	**SUBCONTRACTOR:**
SYSTEM / SUBSYSTEM: / 20700-P-0401	**DRAWING:**
TAG NUMBER: S8-F-0020	**DESCRIPTION: FG TO INCINERATOR**
FOLDER No.: S8-F-0020	**RFI No.:**

This certificate does not exempt the Subcontractor from the Terms of the Contract, Project Specifications or Quality Procedures but confirms that all these Tests have been performed according to them.

VALVES

TAG:	MANUFACTURER AND MODEL:		SERIAL Nº:
VALVE TYPE AND SIZE:		AIR / ELECTRICAL SUPPLY:	
THEORIC CLOSING/OPENING TIME:		TIME VALVE OPEN/CLOSE:	
ACTION ON INCREASE SIGNAL:	FAIL ACTION LOST OF AIR:	FAIL ACTION LOST OF SIGNAL:	POSITIONER ACTION (DIR/REV):

DCS TO FIELD

	INPUT FROM DCS	READING AT VALVE / ADC		REMARKS
	%	%	RESULT	
0				
25				
50				
75				
100				
75				
50				
25				
0				

TAG:	MANUFACTURER AND MODEL:		SERIAL Nº:
VALVE TYPE AND SIZE:		AIR / ELECTRICAL SUPPLY:	
THEORIC CLOSING/OPENING TIME:		TIME VALVE OPEN/CLOSE:	
ACTION ON INCREASE SIGNAL:	FAIL ACTION LOST OF AIR:	FAIL ACTION LOST OF SIGNAL:	POSITIONER ACTION (DIR/REV):

DCS TO FIELD

	INPUT FROM DCS	READING AT VALVE		REMARKS
	%	%	RESULT	
0				
25				
50				
75				
100				
75				
50				
25				
0				

WITNESSED / REVIEWED BY:	SUBCONTRACTOR	TR PRECOMMISSIONING SUPERVISOR	THIRD PARTY (If Required)	COMPANY (If Required)
SIGNATURE:				
PRINT NAME:				
DATE:				

(Note) Not applicable with Integrated Quality Team set up

PROJECT: 10160 - CRISP	**SUBCONTRACTOR:**
SYSTEM / SUBSYSTEM: / 20700-P-0401	**DRAWING:**
TAG NUMBER: S8-F-0020	**DESCRIPTION: FG TO INCINERATOR**
FOLDER No.: S8-F-0020	**RFI No.:**

This certificate does not exempt the Subcontractor from the Terms of the Contract, Project Specifications or Quality Procedures but confirms that all these Tests have been performed according to them.

PHYSICAL SWITCHES / PUSH BUTTON: ALARMS AND TRIPS

TAG:	DESCRIPTION:
INVERTED IN DCS:	ACTION (ALARM / TRIP):
ACTIVATES AT (DCS / ESD VALUE WHEN ACTIVE):	RESETS AT (DCS / ESD VALUE WHEN INACTIVE):
RESULT:	

TAG:	DESCRIPTION:
INVERTED IN DCS:	ACTION (ALARM / TRIP):
ACTIVATES AT (DCS / ESD VALUE WHEN ACTIVE):	RESETS AT (DCS / ESD VALUE WHEN INACTIVE):
RESULT:	

TAG:	DESCRIPTION:
INVERTED IN DCS:	ACTION (ALARM / TRIP):
ACTIVATES AT (DCS / ESD VALUE WHEN ACTIVE):	RESETS AT (DCS / ESD VALUE WHEN INACTIVE):
RESULT:	

WITNESSED / REVIEWED BY:	**SUBCONTRACTOR**	**TR PRECOMMISSIONING SUPERVISOR**	**THIRD PARTY (If Required)**	**COMPANY (If Required)**
SIGNATURE:				(Note) Not applicable with Integrated Quality Team set up
PRINT NAME:				
DATE:				

PUNCH LIST

No.: 10160-CON-PIP-02
Rev.: 1
Date: 06/May/22

PROJECT: 10160 - CRISP	**SUBCONTRACTOR: 1016025010 - SINOPEC**
SYSTEM / SUBSYSTEM: / 20700-P-0401	**DRAWING:**
TAG NUMBER:	**DESCRIPTION:**
FOLDER No.: S8-F-0020	**RFI No.:**

This certificate does not exempt the Subcontractor from the Terms of the Contract, Project Specifications or Quality Procedures but confirms that all these Tests have been performed according to them.

Category:	**Discipline:**		**Action by:**	**Status:**	
A1: Shall stop any test (such us hydraulic test, loop test, motor run…) or any activity that would result in HSE issue or in any risk for the integrity of the plant.	01 - Civil / UG Piping	07 - Instrumentation	ENG - Engineering	Open	O
	02 - Buildings / HVAC	08 - Insulation	CON - Construction	Close	C
A: Items must be completed before Turnover.	03 - Steel Structure	09 - Coating	PRE - Precommissioning	Cancelled	N
B: Items can be completed after Turnover but before Start-up of the Facility.	04 - Mechanical Equip.	10 - Fireproofing	QAC - QA/QC		
C: Items can be completed anytime, but are required before Acceptance of Facility.	05 - Piping	11 - As-Built	OTH - Others		
Am: Items must be completed before release for shipment to site. Only applicable for Modules Yards	06 - Electrical	12 - Others			

Item No.	Unit	TP,Equ,Mot, Loop No.	Equipm./Line/ Instrument/... No.	System /Sub-System No.	Punch item Description	Category	Originator & (Company)	Origin Date	Discipline	Mat. Requ.	Action by	Subcon. Rep.	TR Rep.	Expected Date	Sign Rep. Clear (Subcon)	Clear Date (Subcon)	Sign Rep. Clear (TR)	Clear Date (TR)	Sign Rep. Clear (Orig)	Clear Date (Orig)	Comments / References	Status	Official	Attach.

WITNESSED / REVIEWED BY:	**SUBCONTRACTOR**	**TR CONSTRUCTION SUPERVISOR**	**COMPANY (If required)**
SIGNATURE:			
PRINT NAME:			
DATE:			

(Note) Not applicable with Integrated Quality Team set up