





		PROJECT	Standby SRU & Additional Tanks		
			IOCL Paradip Refinery		
		CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP-PRECOMMISSIONING OF ELECTRICAL EQUIPMENT	Project No. 080557C001	Document No. 080557C-000-QCP-1600-051		Rev. No. A	Page 1 of 10

QUALITY CONTROL PLAN

PRECOMMISSIONING ELECTRICAL EQUIPMENT

TYPE OF QUALITY CONTROL REPORT		CERTIFICATION EXTENT				NOTES
QCF 1600.P51		TRANSFORMERS WITH RELEVANT CABLES AND FEEDER UNIT				(1)
QCF 1600.P52		TRANSFORMER SOAK TEST				(1)
QCF 1600.P53		DOUBLE FED SWITCHGEAR WITH RELEVANT CABLES AND FEEDER UNIT				(1)
QCF 1600.P54		SINGLE FED SWITCHGEAR WITH RELEVANT CABLES AND FEEDER UNIT				(1)
QCF 1600.P55		MCC / DISTRIBUTION PANEL WITH RELEVANT CABLES AND FEEDER UNIT				(1)
QCF 1600.P56		EMERGENCY DISTRIBUTION SYSTEM				(1)
QCF 1600.P57		DIESEL GENSET LOAD BANK TEST				(1)
QCF 1600.P58		UPS FUNCTIONAL TEST				(1)
QCF 1600.P59		DC SYSTEM FUNCTIONAL TEST				(1)
QCF 1600.P60		BATTERIES CHARGE				(1)
QCF 1600.P61		BATTERIES DISCHARGE				(1)
QCF 1600.P62		VARIABLE FREQUENCY DRIVE FUNCTIONAL TEST				(1)
QCF 1600.P63		ELECTRICAL HEAT TRACING SYSTEM				(1)
QCF 1600.P64		CATHODIC PROTECTION - GALVANIC ANODE POTENTIAL SURVEY				(1)
QCF 1600.P65		CATHODIC PROTECTION – IMPRESSED CURRENT ANODE POTENTIAL SURVEY				(1)
QCF 1600.P66		SYNCHRONOUS MACHINES - LUBRICATION, AIR GAP AND COUPLING ALIGNMENT				(1)
			 Samit Paul 2019.10.21 18:34:47 +05'30'	 Digitally signed by Samit Paul DN: cn=Samit Paul, o=TechnoPMIC, email=Samit.Paul@technopmic.com Date: 2019.10.21 18:45:04 +05'30'	 Approved By Alakapattan L 2019.11.06 17:02:36 +05'30'	 Authorized By Morischristopher Jesuma 2019.11.06 22:32:08 +05'30'
A	21.10.2019	ISSUED FOR INFORMATION	SMP	PKP	LA/ANJ	JMC
REV.	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	AUTHORIZED

 		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
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TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT				NOTES
QCF 1600.P67	ROTATING EQUIPMENT TEST				(1)
QCF 1600.P68	LIGHTING / RECEPTACLE / AIRCRAFT DISTRIBUTION PANEL WITH RELEVANT CABLES AND FEEDER UNIT & WELDING SOCKET				(1)
QCF 1600.P69	LIGHTING SYSTEM ILLUMINATION LEVEL MEASUREMENT				(1)
QCF 1600.P70	VARIOUS EQUIPMENT WITH RELEVANT CABLES AND FEEDER UNIT				(1)
QCF 1600.P71	HVAC SYSTEM				(1)
W12	INSPECTION FORM				

REFERENCE DOCUMENTS:

- DRAWINGS

LEGENDS

H	=	HOLD (RFI required - Work stop for inspection)
W	=	WITNESS (RFI required)
WC	=	100 % SUPERVISION AND EXAMINATION BY CONTRACTOR.
P	=	PREPARATION.
S	=	SURVEILLANCE (No RFI)
R	=	REVIEW OF REPORTS
N.A.	=	NOT APPLICABLE
A	=	AUTHORIZATION / APPROVAL
IFA	=	ISSUED FOR AUTHORIZATION/APPROVAL
INFO	=	FOR INFORMATION
!	=	WARNING (control of document revision status)

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ELECTRICAL EQUIPMENT

S.No	CHECK AND INSPECTION ITEM	QCF CODE	SITE INSPECTION EXTENT		NOTES
			CONTR.	TECHNIP	
A	TRANSFORMERS WITH RELEVANT CABLES AND FEEDER UNIT				
1	Pre-energization checks	1600.P51	W/C	W/R	
1-A1	Tap changer on central position and power supply available on protective devices	1600.P51	W/C	W/R	
1-A2	Neutral grounding monitoring devices turned on	1600.P51	W/C	W/R	
1-A3	Relays set and locking / racking provisions applied where required	1600.P51	W/C	W/R	
2	Energization	1600.P51	W/C	W/R	
3	Post-energization checks	1600.P51	W/C	W/R	
3-C1	Voltage, current and frequency readings on upstream relay / meter	1600.P51	W/C	W/R	
3-C2	Voltage and phase sequence readings on upstream relay / meter terminal	1600.P51	W/C	W/R	
3-C3	Voltage and frequency readings on downstream relay / meter display	1600.P51	W/C	W/R	
3-C4	Pickup check on upstream and downstream relays	1600.P51	W/C	W/R	
3-C5	Transformer visual and acoustical inspection	1600.P51	W/C	W/R	
3-C6	Associated neutral earthing transformer visual and acoustical inspection	1600.P51	W/C	W/R	
3-C7	Associated neutral earthing resistor visual and acoustical inspection	1600.P51	W/C	W/R	
3-C8	Associated neutral earthing resistor monitoring panel visual inspection	1600.P51	W/C	W/R	
3-C9	Voltage readings and phase sequence on downstream VT terminals	1600.P51	W/C	W/R	
3-C10	Voltage readings and phase sequence on downstream relay / meter terminals	1600.P51	W/C	W/R	
B	TRANSFORMER SOAK TEST				
1	Soak Test	1600.P52	W/C	W/R	
C	DOUBLE FED SWITCHGEAR WITH RELEVANT CABLES AND FEEDER UNIT				
1	Pre-energization checks	1600.P52	W/C	W/R	
1-A1	Power supply available on protective devices	1600.P52	W/C	W/R	
1-A2	Relays set and locking / racking provisions applied where required	1600.P52	W/C	W/R	
2	Energization – Busbar “A”	1600-P53	W/C	W/R	
3	Post-energization checks – Busbar “A”	1600-P53	W/C	W/R	

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S.No	CHECK AND INSPECTION ITEM	QCF CODE	SITE INSPECTION EXTENT		NOTES
			CONTR.	TECHNIP	
3-C1	Voltage and frequency readings (L1, L2, L3) on relay / meter display	1600-P53	W/C	W/R	
3-C2	Relays pickup	1600-P53	W/C	W/R	
3-C3	Voltage readings (L1, L2, L3) and phase sequence on relays terminals	1600-P53	W/C	W/R	
3-C4	Voltage readings (L1, L2, L3) and phase sequence on busbar VT terminal	1600-P53	W/C	W/R	
3-C5	Voltage comparison between busbar and incoming VT terminals	1600-P53	W/C	W/R	
4	Energization – Busbar “B”	1600-P53	W/C	W/R	
5	Post-energization checks – Busbar “B”	1600-P53	W/C	W/R	
5-E1	Voltage and frequency readings (L1, L2, L3) on relay / meter display	1600-P53	W/C	W/R	
5-E2	Relays pickup	1600-P53	W/C	W/R	
5-E3	Voltage readings (L1, L2, L3) and phase sequence on relays terminals	1600-P53	W/C	W/R	
5-E4	Voltage readings (L1, L2, L3) and phase sequence on busbar VT terminals	1600-P53	W/C	W/R	
5-E5	Voltage comparison between busbar and incoming VT terminals	1600-P53	W/C	W/R	
6	Phasing check	1600-P53	W/C	W/R	
6-F1	Synchronization checked between half busbars A and B	1600-P53	W/C	W/R	
6-F2	Voltage measurement, across phases	1600-P53	W/C	W/R	
6-F3	Voltage measurement, phase to phase (top)	1600-P53	W/C	W/R	
6-F4	Voltage measurement, phase to phase (bottom)	1600-P53	W/C	W/R	
7	Other checks	1600-P53	W/C	W/R	
7-G1	Bus tie manual closure	1600-P53	W/C	W/R	
7-G2	Automatic transfer	1600-P53	W/C	W/R	
D	SINGLE FED SWITCHGEAR WITH RELEVANT CABLES AND FEEDER UNIT				
1	Pre-energization checks	1600-P54	W/C	W/R	
1-A1	Power supply available on protective devices	1600-P54	W/C	W/R	
1-A2	Relays set and locking / racking provisions applied where required	1600-P54	W/C	W/R	
2	Energization	1600-P54	W/C	W/R	

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S.No	CHECK AND INSPECTION ITEM	QCF CODE	SITE INSPECTION EXTENT		NOTES
			CONTR.	TECHNIP	
3	Post-energization checks – Busbar	1600-P54	W/C	W/R	
3-C1	Voltage and frequency readings (L1, L2, L3) on relay / meter display	1600-P54	W/C	W/R	
3-C2	Relays pickup	1600-P54	W/C	W/R	
3-C3	Voltage readings (L1, L2, L3) and phase sequence on relays terminals	1600-P54	W/C	W/R	
3-C4	Voltage readings (L1, L2, L3) and phase sequence on busbar VT terminals	1600-P54	W/C	W/R	
3-C5	Voltage comparison between busbar and incoming VT terminals	1600-P54	W/C	W/R	
E	MCC / DISTRIBUTION PANEL WITH RELEVANT CABLES AND FEEDER UNIT				
1	Pre-energization checks	1600-P55	W/C	W/R	
1-A1	Power supply available on protective devices	1600-P55	W/C	W/R	
1-A2	Relays set and locking / racking provisions applied where required	1600-P55	W/C	W/R	
2	Energization	1600-P55	W/C	W/R	
3	Post-energization checks – Busbar	1600-P55	W/C	W/R	
3-C1	Voltage and frequency readings (L1, L2, L3) on relay / meter display	1600-P55	W/C	W/R	
3-C2	Relays pickup	1600-P55	W/C	W/R	
3-C3	Voltage readings (L1, L2, L3) and phase sequence on relays terminals	1600-P55	W/C	W/R	
3-C4	Voltage readings (L1, L2, L3) and phase sequence on busbar VT terminals	1600-P55	W/C	W/R	
3-C5	Voltage comparison between busbar and incoming VT terminals	1600-P55	W/C	W/R	
F	EMERGENCY DISTRIBUTION SYSTEM				
1	Pre-transfer checks	1600-P56	W/C	W/R	
1-A1	Relays set and locking / racking provisions applied where required	1600-P56	W/C	W/R	
2	System test	1600-P56	W/C	W/R	
2-B1	Automatic transfer sequence from normal to emergency	1600-P56	W/C	W/R	
2-B2	Automatic retransfer sequence from emergency to normal	1600-P56	W/C	W/R	
2-B3	Manual transfer sequence from normal to emergency	1600-P56	W/C	W/R	
2-B4	Manual transfer sequence from emergency to normal	1600-P56	W/C	W/R	

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ELECTRICAL EQUIPMENT

S.No	CHECK AND INSPECTION ITEM	QCF CODE	SITE INSPECTION EXTENT		NOTES
			CONTR.	TECHNIP	
2-B5	Maintenance transfer sequence from normal to emergency	1600-P56	W/C	W/R	
2-B6	Maintenance transfer sequence from emergency to normal	1600-P56	W/C	W/R	
G	DIESEL GENSET LOAD BANK TEST				
1	Load Bank Test	1600-P57	W/C	W/R	
H	UPS FUNCTIONAL TEST				
1	Functional Test	1600-P58	W/C	W/R	
I	DC SYSTEM FUNCTIONAL TEST				
1	Functional Test	1600-P59	W/C	W/R	
J	BATTERIES CHARGE				
1	Batteries Charge	1600-P60	W/C	W/R	
K	BATTERIES DISCHARGE				
1	Batteries Discharge	1600-P61	W/C	W/R	
L	VARIABLE FREQUENCY DRIVE FUNCTIONAL TEST				
1	Functional Test	1600-P62	W/C	W/R	
M	ELECTRICAL HEAT TRACING SYSTEM				
1	Heaters Performance	1600-P63	W/C	W/R	
2	Temperature Control	1600-P63	W/C	W/R	
3	Alarms / Monitoring / Ground Fault	1600-P63	W/C	W/R	
N	CATHODIC PROTECTION - GALVANIC ANODE POTENTIAL SURVEY				
1	Readings	1600-P64	W/C	W/R	
O	CATHODIC PROTECTION - IMPRESSED CURRENT ANODE POTENTIAL SURVEY				
1	Readings	1600-P65	W/C	W/R	
P	SYNCHRONOUS MACHINES - LUBRICATION, AIR GAP AND COUPLING ALIGNMENT				
1	Lubrication	1600-P66	W/C	W/R	
2	Air gap measurement for synchronous machines	1600-P66	W/C	W/R	

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S.No	CHECK AND INSPECTION ITEM	QCF CODE	SITE INSPECTION EXTENT		NOTES
			CONTR.	TECHNIP	
3	Coupling alignment and rotor supports distances for synchronous machines	1600-P66	W/C	W/R	
Q	ROTATING EQUIPMENT TEST				
1	Motor run in folder preparation	1600-P67	W/C	W/R	
2	Preliminary checks on starter unit	1600-P67	W/C	W/R	
1-A1	Insulation resistance tested	1600-P67	W/C	W/R	
1-A2	Protective relay set	1600-P67	W/C	W/R	
1-A3	T set (EEx-e motors only)	1600-P67	W/C	W/R	
1-A4	Frequency limits set (VFD motors only)	1600-P67	W/C	W/R	
1-A5	VFD parameters set (VFD motors only)	1600-P67	W/C	W/R	
1-A6	Electrical and mechanical operation	1600-P67	W/C	W/R	
3	First start	1600-P67	W/C	W/R	
4	4 Hours No-Load Running Test	1600-P67	W/C	W/R	
R	LIGHTING/RECEPTACLE/AIRCRAFT DISTRIB. PANEL WITH RELEVANT CABLES AND FEEDER UNIT & WELDING SOCKET				
1	Pre-energization checks	1600-P68	W/C	W/R	
1-A1	Grounding connection of the panel	1600-P68	W/C	W/R	
1-A2	Connection tightness	1600-P68	W/C	W/R	
1-A3	Power supply available on protective devices	1600-P68	W/C	W/R	
1-A4	Relays set and locking / racking provisions applied where required	1600-P68	W/C	W/R	
2	Energization	1600-P68	W/C	W/R	
3	Post-energization checks	1600-P68	W/C	W/R	
3-C1	Panel indication lamps (voltage presence, heater on/off, etc.)	1600-P68	W/C	W/R	
3-C2	Voltage and frequency readings (L1, L2, L3) on relay / meter display	1600-P68	W/C	W/R	
3-C3	Relays pickup	1600-P68	W/C	W/R	
3-C4	Voltage readings (L1, L2, L3) and phase sequence on busbar terminals	1600-P68	W/C	W/R	

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S.No	CHECK AND INSPECTION ITEM	QCF CODE	SITE INSPECTION EXTENT		NOTES
			CONTR.	TECHNIP	
3-C5	Flasher alarm LEDs (only for aircraft warning lighting fixtures)	1600-P68	W/C	W/R	
3-C6	Space heater and relative thermostat operation	1600-P68	W/C	W/R	
3-C7	Welding socket operation	1600-P68	W/C	W/R	
3-C8	Beacons operation as steady burning / flashing (only for aircraft warning lighting fixtures)	1600-P68	W/C	W/R	
3-C9	As-built block diagram attached to this form	1600-P68	W/C	W/R	
3-C10	Visual inspection of all lighting fixtures energized	1600-P68	W/C	W/R	
S 1	LIGHTING SYSTEM ILLUMINATION LEVEL MEASUREMENT				
	Measures	1600-P69	W/C	W/R	
T 1	VARIOUS EQUIPMENT WITH RELEVANT CABLES AND FEEDER UNIT				
	Pre-energization checks	1600-P70	W/C	W/R	
1-A1	Grounding connection of the panel	1600-P70	W/C	W/R	
1-A2	Connection tightness	1600-P70	W/C	W/R	
1-A3	Selector switch in "off" position (off/auto/on)	1600-P70	W/C	W/R	
1-A4	Power supply available on protective devices	1600-P70	W/C	W/R	
1-A5	Relays set and locking / racking provisions applied where required	1600-P70	W/C	W/R	
2	Energization	1600-P70	W/C	W/R	
		1600-P70	W/C	W/R	
3	Post-energization checks	1600-P70	W/C	W/R	
3-C1	Panel indication lamps (voltage presence, heater on/off, etc.)	1600-P70	W/C	W/R	
3-C2	Voltage and frequency readings (L1, L2, L3) on relay / meter display	1600-P70	W/C	W/R	
3-C3	Relays pickup	1600-P70	W/C	W/R	
3-C4	Voltage readings (L1, L2, L3) and phase sequence on busbar terminals	1600-P70	W/C	W/R	
3-C5	Selector switch (off/auto/on) and main thermostat operation	1600-P70	W/C	W/R	
3-C6	Space heater and relative thermostat operation	1600-P70	W/C	W/R	
3-C7	Absorbed current readings (L1, L2, L3)	1600-P70	W/C	W/R	
3-C8	Thermostat final setting temperature	1600-P70	W/C	W/R	

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			CONTR.	TECHNIP	
U	HVAC SYSTEM				
1	Pre-energization checks	1600-P71	W/C	W/R	
1-A1	Grounding connection of the panels	1600-P71	W/C	W/R	
1-A2	Connection tightness	1600-P71	W/C	W/R	
1-A3	Selector switches in "off" position (off/auto/manual)	1600-P71	W/C	W/R	
1-A4	Cleanliness of the air filters and of the work areas for the equipment's start-up	1600-P71	W/C	W/R	
1-A5	Manual / motorized volume control dampers position	1600-P71	W/C	W/R	
1-A6	As-built auto / manual operation flow chart and process air flow diagram attached to this form	1600-P71	W/C	W/R	
1-A7	Power supply available on protective devices	1600-P71	W/C	W/R	
1-A8	Relays set and locking / racking provisions applied where required	1600-P71	W/C	W/R	
2	Energization	1600-P71	W/C	W/R	
3	Post-energization checks	1600-P71	W/C	W/R	
3-C1	Voltage and frequency readings (L1, L2, L3) on relay / meter display	1600-P71	W/C	W/R	
3-C2	Voltage readings (L1, L2, L3) and phase sequence on busbar terminals	1600-P71	W/C	W/R	
3-C3	Absorbed current readings (L1, L2, L3)	1600-P71	W/C	W/R	
3-C4	HVAC – I/O signals list	1600-P71	W/C	W/R	
3-C5	Panel indication lamps for all equipment's (voltage presence, on, off, run, trip, etc.)	1600-P71	W/C	W/R	
3-C6	Touch screen control panel indications for all equipment's (volt. presence, on, off, run, trip, etc.)	1600-P71	W/C	W/R	
3-C7	Motor. dampers, duct heaters, fans, compressors and steam humidify. operation (visual inspection)	1600-P71	W/C	W/R	
3-C8	Dirty filter fault indications alarm by differential pressure switch intervention	1600-P71	W/C	W/R	
3-C9	Unit shut down simulation by: fire alarm, overload, airflow loss, high gas conc., etc.	1600-P71	W/C	W/R	
3-C10	Unit alarms simulation by: high and high high temp., press. loss, loss airflow, system fail, etc.	1600-P71	W/C	W/R	
3-C11	Fresh air mode operation	1600-P71	W/C	W/R	
3-C12	Recirculation air mode operation	1600-P71	W/C	W/R	
3-C13	Fans interlocks with air handling and conditioning units	1600-P71	W/C	W/R	

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			CONTR.	TECHNIP	
3-C14	Fans automatic change over	1600-P71	W/C	W/R	
3-C15	Relays pickup	1600-P71	W/C	W/R	
3-C16	Manual operation mode (selector switches in "manual" position)	1600-P71	W/C	W/R	
3-C17	Automatic operation mode (by varying temperature and relative humidity settings)	1600-P71	W/C	W/R	
3-C18	Automatic change over: from unit on duty to stand-by unit, compress. stages, weekly program	1600-P71	W/C	W/R	
3-C19	Temperature and relative humidity final settings	1600-P71	W/C	W/R	
V	MISCELLANEOUS				
1	Inspection Form	W12	P	W/R	(1)

NOTES: ⁽¹⁾ SINGLE CERTIFICATE FOR EACH ITEM

GENERAL NOTES

- THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THE JOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN- CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.
- CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.

		PROJECT:		
		OWNER:		
QUALITY CONTROL REPORT 1600-P51		PROJ. No.:	REV.	SH. ____ OF ____
ELECTRICAL EQUIPMENT - PRECOMMISSIONING TRANSFORMERS WITH RELEVANT CABLES AND FEEDER UNIT		CONTRACTOR :		1600-P51 N° _____

GENERAL DATA									
Location / area:			System / subsystem:			Date (dd/mm/yy):			
<input type="checkbox"/> Transformer <input type="checkbox"/> Reactor		Tag:		Manufacturer:		Serial no.:			
Rated kVA:		Rated V _{cc} %:		Primary kV:		Secondary kV:			

1 - Pre-energization checks								Accepted		
Step	Activity							Yes	No	NA
A1.	Tap changer on central position and power supply available on protective devices									
A2.	Neutral grounding monitoring devices turned on									
A3.	Relays set and locking / racking provisions applied where required									



2 - Energization				Date (dd/mm/yy):		Time (hh:mm)	
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3 - Post-energization checks								Accepted		
Step	Activity							Yes	No	NA
C1.	Voltage, current and frequency readings on upstream relay / meter									
C2.	Voltage and phase sequence readings on upstream relay / meter terminals									
C3.	Voltage and frequency readings on downstream relay / meter display									
C4.	Pickup check on upstream and downstream relays									
C5.	Transformer visual and acoustical inspection									
C6.	Associated neutral earthing transformer visual and acoustical inspection									
C7.	Associated neutral earthing resistor visual and acoustical inspection									
C8.	Associated neutral earthing resistor monitoring panel visual inspection									
C9.	Voltage readings and phase sequence on downstream VT terminals									
C10.	Voltage readings and phase sequence on downstream relay / meter terminals									

Upstream protective devices readings									
Switchgear _____	Cubicle _____	Relay _____	Display	Volts	V	kV	L1	L2	L3
				Current (A)			L1	L2	L3
				Frequency (Hz)					
				Terminals	Volts	V	kV	L1	L2
			Phase sequence			<div style="display: flex; justify-content: space-between;"> Clockwise Counterclockwise </div>			
Switchgear _____	Cubicle _____	Relay _____	Display	Volts	V	kV	L1	L2	L3
			Terminals	Volts	V	kV	L1	L2	L3
			Phase sequence			<div style="display: flex; justify-content: space-between;"> Clockwise Counterclockwise </div>			

Downstream protective devices readings									
Switchgear _____	Cubicle _____	Relay _____	Display	Volts	V	kV	L1	L2	L3
			Terminals	Volts	V	kV	L1	L2	L3
			Phase sequence			<div style="display: flex; justify-content: space-between;"> Clockwise Counterclockwise </div>			
	Cubicle _____	Relay _____	Display	Volts	V	kV	L1	L2	L3

Test completed at		Date (dd/mm/yy):		Time (hh/mm):
REMARKS :				
INSPECTORS	CONTRACTOR	PMC	OWNER	THIRD PARTY
NAME				
SIGNATURE				
DATE				

 		PROJECT:		
		OWNER:		
QUALITY CONTROL REPORT		1600-P53	PROJ. No.:	REV.
				SH. ___ OF ___
ELECTRICAL EQUIPMENT - PRECOMMISSIONING DOUBLE FED SWITCHGEAR WITH RELEVANT CABLES AND FEEDER UNIT		CONTRACTOR :		1600-P53 N° _____
GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
Manufacturer:		Type:		Serial no.:
Rated voltage:		Rated current:		Rated SC kA:
Tag number:		Ref. drawings:		
1 - Pre-energization checks				Accepted
Step	Activity			Yes No NA
A4.	Power supply available on protective devices			
A5.	Relays set and locking / racking provisions applied where required			
2 - Energization – Busbar “A”		Date (dd/mm/yy):	Time (hh:mm)	
3 - Post-energization checks – Busbar “A”				Accepted
Step	Activity			Yes No NA

C1.	Voltage and frequency readings (L1, L2, L3) on relay / meter display																	
C2.	Relays pickup																	
C3.	Voltage readings (L1, L2, L3) and phase sequence on relays terminals																	
C4.	Voltage readings (L1, L2, L3) and phase sequence on busbar VT terminals																	
C5.	Voltage comparison between busbar and incoming VT terminals																	
4 - Energization – Busbar “B”										Date (dd/mm/yy):			Time (hh:mm)					
5 - Post-energization checks – Busbar “B”													Accepted					
Step	Activity										Yes	No	NA					
E1.	Voltage and frequency readings (L1, L2, L3) on relay / meter display																	
E2.	Relays pickup																	
E3.	Voltage readings (L1, L2, L3) and phase sequence on relays terminals																	
E4.	Voltage readings (L1, L2, L3) and phase sequence on busbar VT terminals																	
E5.	Voltage comparison between busbar and incoming VT terminals																	
Protective devices readings																		
Switchgear _____	Cubicle _____	Relay _____	Display	Volts	V	kV	L1	L2	L3									
			Terminals	Volts	V	kV	L1	L2	L3									
			Phase sequence			Clockwise			Counterclockwise									
Switchgear _____	Cubicle _____	Relay _____	Display	Volts	V	kV	L1	L2	L3									
			Terminals	Volts	V	kV	L1	L2	L3									
			Phase sequence			Clockwise			Counterclockwise									
Switchgear _____	Cubicle _____	VT _____	Terminals	Volts	V	kV	L1	L2	L3									
			Phase sequence			Clockwise			Counterclockwise									
			Phase sequence			Clockwise			Counterclockwise									
Switchgear _____	Cubicle _____	VT _____	Terminals	Volts	V	kV	L1	L2	L3									
			Phase sequence			Clockwise			Counterclockwise									
			Phase sequence			Clockwise			Counterclockwise									
6 - Phasing check										Accepted								
Step	Activity										Yes	No	NA					
F1.	Synchronization checked between half busbars A and B																	
F2.	Voltage measurement, across phases		R _A to R _B	Ok	Y _A to Y _B	Ok	B _A to B _B	Ok										
F3.	Voltage measurement, phase to phase (top)		R _A to Y _A	Ok	R _A to B _A	Ok	Y _A to B _A	Ok										
F4.	Voltage measurement, phase to phase (bottom)		R _B to Y _B	Ok	R _B to B _B	Ok	Y _B to B _B	Ok										
7 - Other checks													Accepted					
Step	Activity										Yes	No	NA					
G1.	Bus tie manual closure																	
G2.	Automatic transfer																	
REMARKS :																		
INSPECTORS		CONTRACTOR		PMC		OWNER		THIRD PARTY										
NAME																		
SIGNATURE																		
DATE																		



PROJECT:

OWNER:

QUALITY CONTROL REPORT

1600-P54

PROJ. No.:

REV.

SH. ___ OF ___

ELECTRICAL EQUIPMENT – PRECOMMISSIONING
SINGLE FED SWITCHGEAR WITH RELEVANT CABLES
AND FEEDER UNIT

CONTRACTOR :

1600-P54 N°

GENERAL DATA

Location / area:	System / subsystem:	Date (dd/mm/yy):
Manufacturer:	Type:	Serial no.:
Rated voltage:	Rated current:	Rated SC kA:
Tag number:	Ref. drawings:	

1 - Pre-energization checks

Step	Activity	Accepted		
		Yes	No	NA
A6.	Power supply available on protective devices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A7.	Relays set and locking / racking provisions applied where required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 - Energization

Date (dd/mm/yy):

Time (hh:mm)

3 - Post-energization checks

Step	Activity	Accepted		
		Yes	No	NA
C11.	Voltage and frequency readings (L1, L2, L3) on relay / meter display	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C12.	Relays pickup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C13.	Voltage readings (L1, L2, L3) and phase sequence on relays terminals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C14.	Voltage readings (L1, L2, L3) and phase sequence on busbar VT terminals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C15.	Voltage comparison between busbar and incoming VT terminals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Protective devices readings

Switchgear _____	Cubicle _____	Relay _____	Display	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
			Terminals	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
			Phase sequence		<input type="checkbox"/> Clockwise		<input type="checkbox"/> Counterclockwise
Switchgear _____	Cubicle _____	Relay _____	Display	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
			Terminals	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
			Phase sequence		<input type="checkbox"/> Clockwise		<input type="checkbox"/> Counterclockwise
Switchgear _____	Cubicle _____	VT _____	Terminals	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
			Phase sequence		<input type="checkbox"/> Clockwise		<input type="checkbox"/> Counterclockwise
Switchgear _____	Cubicle _____	VT _____	Terminals	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
			Phase sequence		<input type="checkbox"/> Clockwise		<input type="checkbox"/> Counterclockwise

REMARKS :

INSPECTORS	CONTRACTOR	PMC	OWNER	THIRD PARTY
NAME				
SIGNATURE				
DATE				



PROJECT:

OWNER:

QUALITY CONTROL REPORT

1600-P55

PROJ.
No.:

REV.

SH. ___ OF ___

ELECTRICAL EQUIPMENT - PRECOMMISSIONING
MCC/DISTRIBUTION PANEL WITH RELEVANT CABLES
AND FEEDER UNIT

CONTRACTOR :

1600-P55 N° _____

GENERAL DATA

Location / area:	System / subsystem:	Date (dd/mm/yy):
Manufacturer:	Type:	Serial no.:
Rated voltage:	Rated current:	Rated SC kA:
Tag number:	Ref. drawings:	

1 - Pre-energization checks

		Accepted		
Step	Activity	Yes	No	NA
A8.	Power supply available on protective devices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A9.	Relays set and locking / racking provisions applied where required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 - Energization

Date (dd/mm/yy):

Time (hh:mm)

3 - Post-energization checks

		Accepted		
Step	Activity	Yes	No	NA
C16.	Voltage and frequency readings (L1, L2, L3) on relay / meter display	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C17.	Relays pickup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C18.	Voltage readings (L1, L2, L3) and phase sequence on relays terminals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C19.	Voltage readings (L1, L2, L3) and phase sequence on busbar terminals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Protective devices readings

Panel _____	Relay _____	Display	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
		Terminals	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
		Phase sequence <input type="checkbox"/> Clockwise <input type="checkbox"/> Counterclockwise				
Panel _____	Relay _____	Display	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
		Terminals	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
		Phase sequence <input type="checkbox"/> Clockwise <input type="checkbox"/> Counterclockwise				

REMARKS :

INSPECTORS	CONTRACTOR	PMC	OWNER	THIRD PARTY
NAME				
SIGNATURE				
DATE				

3 h								
3 h 15'								
3 h 30'								
3 h 45'								
4 h								
<div> <div></div> <div>Test results acceptable</div> <div> <input type="checkbox"/> Yes <input type="checkbox"/> No </div> </div>								
REMARKS :								
INSPECTORS		CONTRACTOR		PMC		OWNER		THIRD PARTY
NAME								
SIGNATURE								
DATE								



TechnipFMC



PROJECT:

OWNER:

QUALITY CONTROL REPORT

1600-P58

PROJ. No.:

REV.

SH. ____ OF ____

ELECTRICAL EQUIPMENT - PRECOMMISSIONING
UPS FUNCTIONAL TEST

CONTRACTOR :

1600-P58 N°

GENERAL DATA

Location / area:		System / subsystem:		Date (dd/mm/yy):	
Item:	Manufacturer:	Type:	Serial no.:		
Rated kVA:	Input voltage: V Φ	Output voltage: V Φ	Frequency: Hz		
Redundant system:		Ref. drawings:			
Multimeter manuf./type:		Test voltage: V	Calibration date:	Recalibration date:	

SUPPLY CHARACTERISTICS

Power supply: ☐ Permanent ☐ Temporary Phase rotation: ☐ Clockwise ☐ Counterclockwise Frequency: Hz

INPUT VOLTAGES

	Set value	Actual value	Acceptable	
Input voltage – Phase L1 to L2 (Mains 1 / 2)	V ₁ / V ₂	V ₁ / V ₂	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Input voltage – Phase L2 to L3 (Mains 1 / 2)	V ₁ / V ₂	V ₁ / V ₂	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Input voltage – Phase L1 to L3 (Mains 1 / 2)	V ₁ / V ₂	V ₁ / V ₂	<input type="checkbox"/> Yes	<input type="checkbox"/> No

MAIN SETTINGS

	Set value	Actual value	Acceptable	
Float charge voltage (_____ V / cell)	VDC	VDC	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Boost charge voltage (_____ V / cell)	VDC	VDC	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Ripple voltage		VAC	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Ripple current		A	<input type="checkbox"/> Yes	<input type="checkbox"/> No
AC undervoltage alarm / trip	VAC / VAC	VAC / VAC	<input type="checkbox"/> Yes	<input type="checkbox"/> No
AC overvoltage alarm / trip	VAC / VAC	VAC / VAC	<input type="checkbox"/> Yes	<input type="checkbox"/> No
DC undervoltage alarm / trip	VDC / VDC	VDC / VDC	<input type="checkbox"/> Yes	<input type="checkbox"/> No
DC overvoltage alarm / trip	VDC / VDC	VDC / VDC	<input type="checkbox"/> Yes	<input type="checkbox"/> No

REMOTE ALARM SIGNALIZATION

	Contact type	Testing	Contact type	Testing
Common alarm	<input type="checkbox"/> NO <input type="checkbox"/> NC	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> NO <input type="checkbox"/> NC	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Battery discharging	<input type="checkbox"/> NO <input type="checkbox"/> NC	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> NO <input type="checkbox"/> NC	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
	<input type="checkbox"/> NO <input type="checkbox"/> NC	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> NO <input type="checkbox"/> NC	<input type="checkbox"/> Pass <input type="checkbox"/> Fail

1 – Functional Test

		Testing
Load transfer from UPS to static bypass	Load value kW	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Load transfer from static bypass to UPS	Load value kW	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Loss and restore of normal power supply		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Analogue transducers output		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Earth fault		<input type="checkbox"/> Pass <input type="checkbox"/> Fail

REMARKS :

INSPECTORS	CONTRACTOR	PMC	OWNER	THIRD PARTY
NAME				
SIGNATURE				
DATE				



PROJECT:

OWNER:

QUALITY CONTROL REPORT

1600-P59

PROJ. No.:

REV.

SH. ____ OF ____

ELECTRICAL EQUIPMENT - PRECOMMISSIONING
DC SYSTEM FUNCTIONAL TEST

CONTRACTOR :

1600-P59 N°

GENERAL DATA

Location / area:		System / subsystem:		Date (dd/mm/yy):	
Item:	Manufacturer:	Type:		Serial no.:	
Rated kW:	Input voltage: V Φ	Output voltage: VDC		Ref. drawings.:	
Redundant system: <input type="checkbox"/> Yes <input type="checkbox"/> No		Grounding: <input type="checkbox"/> Isolated <input type="checkbox"/> Negative grounded <input type="checkbox"/> Other _____			
Multimeter manuf./type:		Test voltage: V	Calibration date:	Recalibration date:	

SUPPLY CHARACTERISTICS

Power supply: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary	Phase rotation: <input type="checkbox"/> Clockwise <input type="checkbox"/> Counterclockwise	Frequency: Hz
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INPUT VOLTAGES

	Set value	Actual value	Acceptable
Input voltage – Phase L1 to L2 (Mains 1 / 2)	V ₁ / V ₂	V ₁ / V ₂	<input type="checkbox"/> Yes <input type="checkbox"/> No
Input voltage – Phase L2 to L3 (Mains 1 / 2)	V ₁ / V ₂	V ₁ / V ₂	<input type="checkbox"/> Yes <input type="checkbox"/> No
Input voltage – Phase L1 to L3 (Mains 1 / 2)	V ₁ / V ₂	V ₁ / V ₂	<input type="checkbox"/> Yes <input type="checkbox"/> No

MAIN SETTINGS

	Set value	Actual value	Acceptable
Float charge voltage (_____ V / cell)	VDC	VDC	<input type="checkbox"/> Yes <input type="checkbox"/> No
Boost charge voltage (_____ V / cell)	VDC	VDC	<input type="checkbox"/> Yes <input type="checkbox"/> No
AC undervoltage alarm / trip	VAC / VAC	VAC / VAC	<input type="checkbox"/> Yes <input type="checkbox"/> No
AC overvoltage alarm / trip	VAC / VAC	VAC / VAC	<input type="checkbox"/> Yes <input type="checkbox"/> No
DC undervoltage alarm / trip	VDC / VDC	VDC / VDC	<input type="checkbox"/> Yes <input type="checkbox"/> No
DC overvoltage alarm / trip	VDC / VDC	VDC / VDC	<input type="checkbox"/> Yes <input type="checkbox"/> No

REMOTE ALARM SIGNALIZATION

	Contact type	Testing	Contact type	Testing
Common alarm	<input type="checkbox"/> NO <input type="checkbox"/> NC	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> NO <input type="checkbox"/> NC	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Battery discharging	<input type="checkbox"/> NO <input type="checkbox"/> NC	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> NO <input type="checkbox"/> NC	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
	<input type="checkbox"/> NO <input type="checkbox"/> NC	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> NO <input type="checkbox"/> NC	<input type="checkbox"/> Pass <input type="checkbox"/> Fail

1 - Functional Test

	Testing
Loss and restore of normal power supply	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Analogue transducers output	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Earth fault	<input type="checkbox"/> Pass <input type="checkbox"/> Fail

REMARKS :

INSPECTORS	CONTRACTOR	TECHNIP	OWNER	THIRD PARTY
NAME				
SIGNATURE				
DATE				

TechnipFMC IndianOil								PROJECT:							
								OWNER:							
QUALITY CONTROL REPORT 1600-P60								PROJ. No.:		REV.		SH. ___ OF ___			
ELECTRICAL EQUIPMENT - PRECOMMISSIONING BATTERIES CHARGE								CONTRACTOR:		1600-P60 N° _____					
GENERAL DATA															
Location / area:				System / subsystem:				Date (dd/mm/yy):							
Battery type:				Lead-acid wet cell type				Lead-acid valve regulated				Nickel Cadmium			
Battery bank item:				Number of elements:				Ref. drawings:							
Battery manufacturer:				Battery type:				Capacity / Hours:							
1 – Batteries Charge															
Date		Time		Charging current		DC A		Charge voltage		DC V		Initial charging		<input type="checkbox"/> Yes	<input type="checkbox"/> No
CELL NO.	CELL VOLT AGE V	TEMP °C	SPEC IFIC GRAVITY	CELL NO.	CELL VOLT AGE V	TEMP °C	SPEC IFIC GRAVITY	CELL NO.	CELL VOLT AGE V	TEMP °C	SPEC IFIC GRAVITY	CELL NO.	CELL VOLT AGE V	TEMP °C	SPEC IFIC GRAVITY
1				30				59				88			
2				31				60				89			
3				32				61				90			
4				33				62				91			
5				34				63				92			
6				35				64				93			
7				36				65				94			
8				37				66				95			
9				38				67				96			
10				39				68				97			
11				40				69				98			
12				41				70				99			
13				42				71				100			
14				43				72				101			
15				44				73				102			
16				45				74				103			
17				46				75				104			
18				47				76				105			
19				48				77				106			
20				49				78				107			
21				50				79				108			
22				51				80				109			
23				52				81				110			
24				53				82				111			
25				54				83				112			
26				55				84				113			
27				56				85				114			
28				57				86				115			
29				58				87				116			
Ripple current measurement								<input type="checkbox"/> Not required				<input type="checkbox"/> Required		A	
Note: Prepare one quality control form for each time interval															
REMARKS :															

INSPECTORS	CONTRACTOR	TECHNIP	OWNER	THIRD PARTY
NAME				
SIGNATURE				
DATE				

 	PROJECT:		
	OWNER:		
QUALITY CONTROL REPORT	1600-P61	PROJ. No.:	REV. SH. ___ OF ___
ELECTRICAL EQUIPMENT - PRECOMMISSIONING BATTERIES DISCHARGE		CONTRACTOR:	1600-P61 N° _____

GENERAL DATA			
Location / area:		System / subsystem:	
Date (dd/mm/yy):			
Battery type:	Lead-acid wet cell type	Lead-acid valve regulated	Nickel Cadmium
Battery bank item:	Number of elements:		Ref. drawings:
Battery manufacturer:	Battery type:		Capacity / Hours:

1 – Batteries Discharge															
Date		Time		Discharge current		DC A		Battery voltage		DC V					
CELL NO.	CELL VOLT AGE	TEMP °C	SPECIFIC GRAVITY	CELL NO.	CELL VOLT AGE	TEMP °C	SPECIFIC GRAVITY	CELL NO.	CELL VOLT AGE	TEMP °C	SPECIFIC GRAVITY	CELL NO.	CELL VOLT AGE	TEMP °C	SPECIFIC GRAVITY
1				30				59				88			
2				31				60				89			
3				32				61				90			
4				33				62				91			
5				34				63				92			
6				35				64				93			
7				36				65				94			
8				37				66				95			
9				38				67				96			
10				39				68				97			
11				40				69				98			
12				41				70				99			
13				42				71				100			
14				43				72				101			
15				44				73				102			
16				45				74				103			
17				46				75				104			
18				47				76				105			
19				48				77				106			
20				49				78				107			
21				50				79				108			
22				51				80				109			
23				52				81				110			
24				53				82				111			
25				54				83				112			
26				55				84				113			

27				56				85				114			
28				57				86				115			
29				58				87				116			
Ripple current measurement								<input type="checkbox"/> Not required				<input type="checkbox"/> Required		A	
Note: Prepare one quality control form for each time interval															
REMARKS :															
INSPECTORS		CONTRACTOR			TECHNIP			OWNER			THIRD PARTY				
NAME															
SIGNATURE															
DATE															



PROJECT:

OWNER:

QUALITY CONTROL REPORT

1600-P62

PROJ. No.:

REV.

SH. ___ OF ___

ELECTRICAL EQUIPMENT - PRECOMMISSIONING
VARIABLE FREQUENCY DRIVE FUNCTIONAL TEST

CONTRACTOR :

1600-P62 N°

GENERAL DATA

Location / area:	System / subsystem:	Date (dd/mm/yy):
Manufacturer:	Type:	Serial no.:
Rated kW:	Input voltage: V Φ	Torque <input type="checkbox"/> Constant <input type="checkbox"/> Variable
Bypass switch:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Ref. drawings:
Multimeter manuf./type:	Test voltage: V	Calibration date:
		Recalibration date:

SUPPLY CHARACTERISTICS

Power supply: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary	Phase rotation: <input type="checkbox"/> Clockwise <input type="checkbox"/> Counterclockwise	Frequency: Hz
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INPUT VOLTAGES

	Set value	Actual value	Acceptable	
Input voltage – Phase L1 to L2	V	V	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Input voltage – Phase L2 to L3	V	V	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Input voltage – Phase L1 to L3	V	V	<input type="checkbox"/> Yes	<input type="checkbox"/> No

PARAMETER SETTINGS

Motor parameters	Voltage	V	Current	A	Frequency	Hz	Speed	rpm	Power	kW
Limits	Max speed		rpm	Min speed		rpm	Max current			A
	Max torque		%	Min torque		%				
Acceleration	Time 1	s	Time 2	s	Deceleration	Time 1	s	Time 2	s	

DIGITAL I/O

Input type	Contact type		Testing		Output type	Contact type		Testing	
Start	<input type="checkbox"/> NO	<input type="checkbox"/> NC	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Ready	<input type="checkbox"/> NO	<input type="checkbox"/> NC	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail
Stop	<input type="checkbox"/> NO	<input type="checkbox"/> NC	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Running	<input type="checkbox"/> NO	<input type="checkbox"/> NC	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail
					Fault	<input type="checkbox"/> NO	<input type="checkbox"/> NC	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail

ANALOGUE I/O

Input type	Min	Max	Testing		Output type	Min	Max	Testing	
Reference speed			<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Speed feedback			<input type="checkbox"/> Pass	<input type="checkbox"/> Fail
					Current			<input type="checkbox"/> Pass	<input type="checkbox"/> Fail

1 - Functional Test

Type	Testing		Type	Testing	
Cooling fan rotation direction	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Control from remote	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail
I/O connections	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Remote alarm signalization	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail
ID run	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Voltage dip ride-through	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail
Test run	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail			

SOFTWARE BACKUP

Type	Provided		Type	Provided	
Parameters loaded	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Backup copy	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Reset of fault buffer	<input type="checkbox"/> Yes	<input type="checkbox"/> No			

REMARKS :

INSPECTORS	CONTRACTOR	TECHNIP	OWNER	THIRD PARTY
NAME				
SIGNATURE				
DATE				



PROJECT:

OWNER:

QUALITY CONTROL REPORT

1600-P63

PROJ. No.:

REV.

SH. ___ OF ___

ELECTRICAL EQUIPMENT - PRECOMMISSIONING
ELECTRICAL HEAT TRACING SYSTEM

CONTRACTOR :

1600-P63 N°

GENERAL DATA

Location / area:

System / subsystem:

Date (dd/mm/yy):

TRACING CABLE DATA

Panel tag:

Breaker/Feeder tag:

Heater/Circuit tag:

Line / instrument / equipment tag:

Design length:

m

Installed length:

m

Normal line / instrument / equipment temperature:

°C

Maintain line / instrument / equipment temperature:

°C

1 - Heaters Performance

Data	Volts AC		Current in amps				
	Panel	Field	Single phase	Three phase			
			L	L1	L2	L3	N
Startup							
After 5 minutes							
Ambient temperature at time of test							°C
Pipe / instrument / equipment temperature at time of test							°C
Calculated watts per unit of length (V x A / length)							W/m

2 - Temperature Control

Heating controller type	<input type="checkbox"/> Ambient sensing	<input type="checkbox"/> Pipe sensing	Set point	°C
High-limit controller	Type	Location	Set point	°C
Heating controls calibrated			<input type="checkbox"/> Yes	<input type="checkbox"/> No
Heating controls operation verified			<input type="checkbox"/> Yes	<input type="checkbox"/> No

3 - Alarms / Monitoring / Ground Fault

Temperature	Settings	High	°C	Low	°C	Operation verified	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Heater current	Settings	High	°C	Low	°C	Operation verified	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Ground fault current	Settings				mA	Operation verified	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Ground fault current protection	Settings				mA	Operation verified	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Loss of voltage						Operation verified	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Signalling lamps						Operation verified	<input type="checkbox"/> Yes	<input type="checkbox"/> No

REMARKS :

INSPECTORS	CONTRACTOR	TECHNIP	OWNER	THIRD PARTY
NAME				
SIGNATURE				
DATE				



PROJECT:

OWNER:

QUALITY CONTROL REPORT

1600-P64

PROJ. No.:

REV.

SH. ____ OF ____

ELECTRICAL EQUIPMENT - PRECOMMISSIONING
CATHODIC PROTECTION - GALVANIC ANODE POTENTIAL SURVEY

CONTRACTOR :

1600-P64 N°

GENERAL DATA

Location / area:

System / subsystem:

Date (dd/mm/yy):

Structure(s) protected:

Reference drawings:

Anodes type:

Anodes material:

Number of anodes:

Anodes weight: kg

Anodes length: m

Anodes diameter: cm

Installation date (dd/mm/yy):


Number of test stations:

1 - Readings

Soil conditions:

#	Location	Ref. cell location	Structure to soil / water (V)	Remote structure to soil / water (V)	Anode to soil / water (V)	Anode to structure (mA)	Remarks
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

REMARKS :				
INSPECTORS	CONTRACTOR	TECHNIP	OWNER	THIRD PARTY
NAME				
SIGNATURE				
DATE				

 		PROJECT:						
		OWNER:						
QUALITY CONTROL REPORT		1600-P65		PROJ. No.: REV. SH. ____ OF ____				
ELECTRICAL EQUIPMENT - PRECOMMISSIONING CATHODIC PROTECTION – IMPRESSED CURRENT ANODE POTENTIAL SURVEY		CONTRACTOR:		1600-P65 N° _____				
GENERAL DATA								
Location / area:		System / subsystem:		Date (dd/mm/yy):				
Rectifier tag:		Manufacturer / Type:		Serial no.:				
AC input:	Current: A	Voltage: V	Phases:	Frequency: Hz				
DC output:	Current: A	Voltage: V	Shunt size:	mV A				
Anodes type:		Anodes material:		Number of anodes:				
Anodes weight: kg		Anodes length: m		Anodes diameter: cm				
Installation date (dd/mm/yy):			Number of test stations:					
1 - Readings								
Rectifier readings:		Current: A	Voltage: V	Variac: %				
Soil conditions:								
#	Location	Ref. cell location	Native (mV)	On (mV)	Inst Off (mV)	On/Off Shift	100 mV Shift	Remarks
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								

18								
19								
20								
21								
22								
23								
24								
25								
Note: On (V) and Off (V) are the structure to electrolyte potentials to a					Cu/CuSO ₄	Ag/AgCl reference electrode.		
REMARKS :								
INSPECTORS	CONTRACTOR	TECHNIP	OWNER	THIRD PARTY				
NAME								
SIGNATURE								
DATE								



PROJECT:

OWNER:

QUALITY CONTROL REPORT

1600-P66

PROJ. No.:

REV.

SH. ____ OF ____

ELECTRICAL EQUIPMENT - PRECOMMISSIONING
SYNCHRONOUS MACHINES
LUBRICATION, AIR GAP AND COUPLING ALIGNMENT


CONTRACTOR:

1600-P66 N° _____


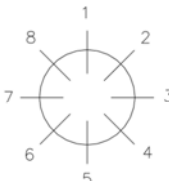
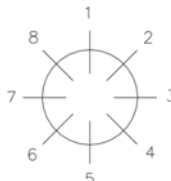
GENERAL DATA

Location / area:	System / subsystem:	Date (dd/mm/yy):
Motor tag:	Manufacturer:	Serial no.:

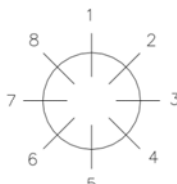
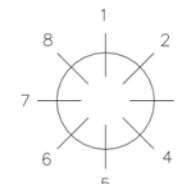

1 - Lubrication for Synchronous Machines

Lubrication (ref. to QCR-6800.P58)	Accepted		Notes			
	Yes	No				
Grease (grease lubricated bearings)	<input type="checkbox"/>	<input type="checkbox"/>	Manuf.	Type	Date	Qty
Oil (oil lubricated bearings)	<input type="checkbox"/>	<input type="checkbox"/>	Manuf.	Type	Sight glass level marking	
Oil filters and pumps	<input type="checkbox"/>	<input type="checkbox"/>	Date	Qty		

2 - Air Gap Measurement for Synchronous Machines

Instrument manuf.:		Type:		Calibration date:		Recalibration date:					
<div><div>DE</div><div>NDE</div><div>EXCITER NDE</div></div> <div>Use odd numbers for pedestal bearings and even numbers for flanged bearings</div>				Machine DE							
				1	mm	2	mm	3	mm	4	mm
				5	mm	6	mm	7	mm	8	mm
				Machine NDE							
				1	mm	2	mm	3	mm	4	mm
				5	mm	6	mm	7	mm	8	mm
				Exciter NDE							
				1	mm	2	mm	3	mm	4	mm
				5	mm	6	mm	7	mm	8	mm
				Acceptance criteria:				Acceptable		<input type="checkbox"/> Yes <input type="checkbox"/> No	

3 - Coupling Alignment and Rotor Supports Distances for Synchronous Machines

Instrument manuf.:		Type:		Calibration date:				Recalibration date:																	
<div><div><div>RADIAL</div></div><div><div>ANGULAR</div></div><div><div>ROTOR SUPPORTS</div></div></div>										Use odd numbers for pedestal bearings and even numbers for flanged bearings															
										Radial alignment															
										1		mm		2		mm		3		mm		4		mm	
										5		mm		6		mm		7		mm		8		mm	
										Angular alignment															
										1		mm		2		mm		3		mm		4		mm	
										5		mm		6		mm		7		mm		8		mm	
										Rotor axial positions															
										P1		mm		P2		mm		Shaft ends axial dist.				mm			
										Rotor supports distance						A1		mm		A2		mm			
Acceptance criteria:										Acceptable						<input type="checkbox"/> Yes <input type="checkbox"/> No									

Magnetic center identification and marking

Coarse ☐Fine ☐

REMARKS:

INSPECTORS	CONTRACTOR	TECHNIP	OWNER	THIRD PARTY
NAME				
SIGNATURE				
DATE				



PROJECT:

OWNER:

QUALITY CONTROL REPORT

1600-P67

PROJ. No.:

REV.

SH. __1__ OF __2__

ELECTRICAL EQUIPMENT - PRECOMMISSIONING
ROTATING EQUIPMENT TEST

CONTRACTOR :

1600-P67 °

GENERAL DATA

Location / area:

System / subsystem:

Date (dd/mm/yy):

Motor tag:

Manufacturer:

Serial no.:

1 - Preliminary Checks on Starter Unit

Substation:

Switchgear:

Column/Row:

Motor rated current:

A

Step	Activity	Accepted		
		Yes	No	NA
A1.	Insulation resistance tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A2.	Protective relay set	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A3.	T _e set (EEx-e motors only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.	Frequency limits set (VFD motors only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A5.	VFD parameters set (VFD motors only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A6.	Electrical and mechanical operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Main settings

Other settings

<input type="checkbox"/> 50	<input type="checkbox"/> 51	<input type="checkbox"/> 64	<input type="checkbox"/> 46	<input type="checkbox"/> 87M	<input type="checkbox"/> 32	<input type="checkbox"/> ____	<input type="checkbox"/> Windings RTD	Alarm °C	Trip °C
							<input type="checkbox"/> Bearings RTD	Alarm °C	Trip °C
							<input type="checkbox"/> Vibration	Alarm mm/s	Trip mm/s

2 – First Start

Time (hh/mm):

Amb. temperature:

☐ °C ☐ °F

Humidity:

%

Direction of rotation (viewed from drive end)

☐ Clockwise☐ Counterclockwise

Abnormal noise or vibration

☐ Yes☐ No☐ Direction of rotation changed

Acceptable

☐ Yes☐ No

REMARKS :

INSPECTORS	CONTRACTOR	TECHNIP	OWNER	THIRD PARTY
NAME				
SIGNATURE				
DATE				



PROJECT:

OWNER:

QUALITY CONTROL REPORT

1600-P67

PROJ. No.:

REV.

SH. _2_ OF _2_

ELECTRICAL EQUIPMENT - PRECOMMISSIONING
ROTATING EQUIPMENT TEST

Contractor :

1600-P67 N°

GENERAL DATA

Location / area:		System / subsystem:		Date (dd/mm/yy):	
Motor tag:		Manufacturer:		Serial no.:	
Substation:		Switchgear:		Column/Row:	
Time (hh/mm):		Amb. temperature:		Motor rated current: A	
		<input type="checkbox"/> °C <input type="checkbox"/> °F		Humidity: %	

3 - 4 Hours No-Load Running Test

Time	Volts (start)	Current (A)			Bearing temperature <div><input type="checkbox"/> °C <input type="checkbox"/> °F</div>		Vibration (mm/s, RMS)						Normal noise	Abnormal noise	RPM (if required)
		Phase L1	Phase L2	Phase L3	DE	NDE	DE horiz.	DE vert.	DE axial	NDE horiz.	NDE vert.	NDE axial			
1'															
30'															
1h															
1h 30'															
2h															
2h 30'															
3h															
3h 30'															
4h															

Cooling air temperature (4h)

Inlet _____ ☐ °C ☐ °F Outlet _____ ☐ °C ☐ °F

Cooling water temperature (4h)

Inlet _____ ☐ °C ☐ °F Outlet _____ ☐ °C ☐ °F

Acceleration time:

s

Test results acceptable ☐ Yes ☐ No

REMARKS :

INSPECTORS

CONTRACTOR

TECHNIP

OWNER

THIRD PARTY

NAME

SIGNATURE

DATE



PROJECT:

OWNER:

QUALITY CONTROL REPORT

1600-P68

PROJ. No.:

REV.

SH. ____ OF ____

ELECTRICAL EQUIPMENT - PRECOMMISSIONING
LIGHTING/RECEPTACLE/AIRCRAFT DISTRIBUTION PANEL WITH
RELEVANT CABLES AND FEEDER UNIT & WELDING SOCKET

CONTRACTOR :

1600-P68 N°

GENERAL DATA

Location / area:	System / subsystem:	Date (dd/mm/yy):
Manufacturer:	Type:	Serial no.:
Rated voltage:	Rated current:	Rated SC kA:
Tag number:	Ref. drawings:	

1 - Pre-energization checks

		Accepted		
Step	Activity	Yes	No	NA
A11.	Grounding connection of the panel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A12.	Connection tightness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A13.	Power supply available on protective devices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A14.	Relays set and locking / racking provisions applied where required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 - Energization

Date (dd/mm/yy):

Time (hh:mm)

3 - Post-energization checks

		Accepted		
Step	Activity	Yes	No	NA
C26.	Panel indication lamps (voltage presence, heater on/off, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C27.	Voltage and frequency readings (L1, L2, L3) on relay / meter display	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C28.	Relays pickup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C29.	Voltage readings (L1, L2, L3) and phase sequence on busbar terminals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C30.	Flasher alarm LEDs (only for aircraft warning lighting fixtures)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C31.	Space heater and relative thermostat operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C32.	Welding socket operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C33.	Beacons operation as steady burning/flashing (only for aircraft warning lighting fixtures)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C34.	As-built block diagram attached to this form	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C35.	Visual inspection of all lighting fixtures energized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Protective devices readings

Panel _____	Relay _____	Display	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
		Terminals	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
		Phase sequence		<input type="checkbox"/> Clockwise	<input type="checkbox"/> Counterclockwise	
Panel _____	Relay _____	Display	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
		Terminals	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
		Phase sequence		<input type="checkbox"/> Clockwise	<input type="checkbox"/> Counterclockwise	

CIRCUIT NUMBER	TOTAL POWER [W]	STARTING CURRENT [A]	FULL LOAD CURRENT [A]	CIRCUIT NUMBER	TOTAL POWER [W]	STARTING CURRENT [A]	FULL LOAD CURRENT [A]
1				15			
2				16			
3				17			
4				18			
5				19			
6				20			
7				21			
8				22			
9				23			
10				24			
11				25			
12				26			
13				27			
14				28			

INSPECTORS	CONTRACTOR	TECHNIP	OWNER	THIRD PARTY
NAME				
SIGNATURE				
DATE				



PROJECT:

OWNER:

QUALITY CONTROL REPORT

1600-P69

PROJ. No

REV.

SH. ____ OF ____

ELECTRICAL EQUIPMENT - PRECOMMISSIONING
LIGHTING SYSTEM ILLUMINATION LEVEL
MEASUREMENT

CONTRACTOR :

1600-P69 N°

GENERAL DATA

Location / area:

System / subsystem:

Date (dd/mm/yy):

☐ Indoor location☐ Outdoor location

Ref. drawing:

Rev.

Starting time (hh.mm)

Weather conditions:

1 - Measures

Luxmeter manuf./type:

Sensitivity:

Calibration date:

Recalibration date:

Pt.	Illumination level		Plane height (mm)	Notes	Pt.	Illumination level		Plane height (mm)	Notes
	Expected	Measured				Expected	Measured		
1					26				
2					27				
3					28				
4					29				
5					30				
6					31				
7					32				
8					33				
9					34				
10					35				
11					36				
12					37				
13					38				
14					39				
15					40				
16					41				
17					42				
18					43				
19					44				
20					45				
21					46				
22					47				
23					48				
24					49				
25					50				

Acceptable

☐ Yes☐ No

Note: A key plan showing the location of the numbered measuring points shall be attached to this form.

REMARKS :

INSPECTORS	CONTRACTOR	TECHNIP	OWNER	THIRD PARTY
NAME				
SIGNATURE				
DATE				



PROJECT:

OWNER:

QUALITY CONTROL REPORT

1600-P70

PROJ. No.:

REV.

SH. ____ OF ____

ELECTRICAL EQUIPMENT - PRECOMMISSIONING
VARIOUS EQUIPMENT WITH RELEVANT CABLES AND FEEDER UNIT

CONTRACTOR :

1600-P70 N°

GENERAL DATA

Location / area:	System / subsystem:	Date (dd/mm/yy):
Manufacturer:	Type:	Serial no.:
Rated voltage:	Rated current:	Rated SC kA:
Tag number:	Ref. drawings:	

EQUIPMENT TYPE

<input type="checkbox"/> Local panel	<input type="checkbox"/> Power supply panel for analyzer	<input type="checkbox"/> Heat exchangers maint. panel	<input type="checkbox"/> Portable equipment
<input type="checkbox"/> Bridge crane panel	<input type="checkbox"/> Bridge crane hand command	<input type="checkbox"/> Chemical dosing system package	<input type="checkbox"/> Analyzer house
<input type="checkbox"/> Fire protect. eq.	<input type="checkbox"/> Extraction fan	<input type="checkbox"/> Electrical door / gate	<input type="checkbox"/> Horn
<input type="checkbox"/> Electric heater	<input type="checkbox"/> Telecommunication equipment	<input type="checkbox"/> Speaker	<input type="checkbox"/> Other

1 - Pre-energization checks

Accepted

Step	Activity	Yes	No	NA
A15.	Grounding connection of the panel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A16.	Connection tightness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A17.	Selector switch in "off" position (off/auto/on)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A18.	Power supply available on protective devices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A19.	Relays set and locking / racking provisions applied where required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 - Energization

Date (dd/mm/yy):

Time (hh:mm)

3 - Post-energization checks

Accepted

Step	Activity	Yes	No	NA
C36.	Panel indication lamps (voltage presence, heater on/off, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C37.	Voltage and frequency readings (L1, L2, L3) on relay / meter display	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C38.	Relays pickup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C39.	Voltage readings (L1, L2, L3) and phase sequence on busbar terminals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C40.	Selector switch (off/auto/on) and main thermostat operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C41.	Space heater and relative thermostat operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C42.	Absorbed current readings (L1, L2, L3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C43.	Thermostat final setting temperature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Protective devices readings

Panel _____	Relay _____	Display	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
		Terminals	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
		Phase sequence		<input type="checkbox"/> Clockwise	<input type="checkbox"/> Counterclockwise	
Panel _____	Relay _____	Display	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
		Terminals	Volts <input type="checkbox"/> V <input type="checkbox"/> kV	L1	L2	L3
		Phase sequence		<input type="checkbox"/> Clockwise	<input type="checkbox"/> Counterclockwise	

REMARKS:

INSPECTORS	CONTRACTOR	TECHNIP	OWNER	THIRD PARTY
NAME				
SIGNATURE				
DATE				

		PROJECT:			
		OWNER:			
QUALITY CONTROL REPORT 1600-P71		PROJ. No.:	REV.	SH. ____ OF ____	
ELECTRICAL EQUIPMENT - PRECOMMISSIONING HVAC SYSTEM		CONTRACTOR :		1600-P71 N° ____	

GENERAL DATA					
Location / area:		System / subsystem:		Date (dd/mm/yy):	
Manufacturer:		Type:		Serial no.:	
Rated voltage:		Rated current:		Rated SC kA:	
Tag number:		Ref. drawings:		Building:	

EQUIPMENTS LIST			
DDC: control panel	MCC: power panel	AHU: Air Handling Unit	ACCU: Air Condition. Condensing Unit
PACU: Packaged Air Condition. Unit	CFU: Chemical Filter Unit	DH: Duct Heater	FD: Fire Damper
DPS: Differential Pressure Switch	DPT: Differential Pressure Transmitter	EF/BF: Exhaust/Bleed Fan	CF/SF: CFU/Supply Fan
STB: Sand Trap Box	SU: Split Unit	SH: Steam Humidifier	TT: Temperature Transmitter
MD: Motorized Damper	RHT: Relative Humidity Transmitter	Pre / bag filter	Other

INSTRUMENTS LIST															
N.	TAG	LOCAT.	SET	N.	TAG	LOCAT.	SET	N.	TAG	LOCAT.	SET	N.	TAG	LOCAT.	SET
1				11				21				31			
2				12				22				32			
3				13				23				33			
4				14				24				34			
5				15				25				35			
6				16				26				36			
7				17				27				37			
8				18				28				38			
9				19				29				39			
10				20				30				40			

1 - Pre-energization checks												Accepted		
Step	Activity											Yes	No	NA
A20.	Grounding connection of the panels													
A21.	Connection tightness													
A22.	Selector switches in "off" position (off/auto/manual)													
A23.	Cleanliness of the air filters and of the work areas for the equipments start-up													
A24.	Manual / motorized volume control dampers position													
A25.	As-built auto / manual operation flow chart and process air flow diagram attached to this form													
A26.	Power supply available on protective devices													
A27.	Relays set and locking / racking provisions applied where required													

2 - Energization								Date (dd/mm/yy):		Time (hh:mm)	
------------------	--	--	--	--	--	--	--	------------------	--	--------------	--

3 - Post-energization checks												Accepted		
Step	Activity											Yes	No	NA
C44.	Voltage and frequency readings (L1, L2, L3) on relay / meter display													
C45.	Voltage readings (L1, L2, L3) and phase sequence on busbar terminals													
C46.	Absorbed current readings (L1, L2, L3)													
C47.	HVAC - I/O signals list													
C48.	Panel indication lamps for all equipments (voltage presence, on, off, run, trip, etc.)													
C49.	Touch screen control panel indications for all equipments (voltage presence, on, off, run, trip, etc.)													

C50.	Motorized dampers, duct heaters, fans, compressors and steam humidifiers operation (visual inspection)								
C51.	Dirty filter fault indications alarm by differential pressure switch intervention								
C52.	Unit shut down simulation by: fire alarm, overload, airflow loss, high gas concentration, etc.								
C53.	Unit alarms simulation by: high and high high temperature, pressure loss, loss airflow, system fail, etc.								
C54.	Fresh air mode operation								
C55.	Recirculation air mode operation								
C56.	Fans interlocks with air handling and conditioning units								
C57.	Fans automatic change over								
C58.	Relays pickup								
C59.	Manual operation mode (selector switches in "manual" position)								
C60.	Automatic operation mode (by varying temperature and relative humidity settings)								
C61.	Automatic change over: from unit on duty to stand-by unit, compressors stages, weekly program								
C62.	Temperature and relative humidity final settings								
INSPECTORS	CONTRACTOR	TECHNIP	OWNER	THIRD PARTY					
NAME									
SIGNATURE									
DATE									

 	PROJECT:	
	OWNER:	
QUALITY CONTROL REPORT W 12	PROJ. No.: REV.	SH. ____ OF ____
	CONSTRUCTION CONTRACTOR	

INSPECTION REPORT

1. PURPOSE OF INSPECTION _____

QCP _____ CHECK STEP _____ AREA _____

2. ITEM IDENTIFICATION _____

3. TYPE OF INSPECTION _____
TEST ☐
EXAMINATION ☐
CHECK ☐

4. INSPECTION RESULT: CONFORMING ☐
NOT CONFORMING ☐
WITH REMARKS ☐

5. REMARKS _____

QCR ACCEPTANCE

INSPECTORS	CONTRACTOR	TECHNIP	OWNER	THIRD PARTY
NAME				
SIGNATURE				
DATE				

 	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
	CLIENT		INDIAN OIL CORPORATION LIMITED	
QCP-COMMISSIONING OF ELECTRICAL EQUIPMENT	Project No. 080557C001	Document No. 080557C-000-QCP-1600-052	Rev. No. A	Page 1 of 2

QUALITY CONTROL PLAN COMMISSIONING ELECTRICAL EQUIPMENT





TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
QCF 1600.C51	ROTATING EQUIPMENT LOAD RUNNING TEST - REFER NOTE (1)
W12	SINGLE REPORT PER EACH TEST

REFERENCE DOCUMENTS:

- DRAWINGS

LEGENDS

H	=	HOLD (RFI required - Work stop for inspection)
W	=	WITNESS (RFI required)
WC	=	100 % SUPERVISION AND EXAMINATION BY CONTRACTOR.
P	=	PREPARATION.
S	=	SURVEILLANCE (No RFI)
R	=	REVIEW OF REPORTS
N.A.	=	NOT APPLICABLE
A	=	AUTHORIZATION / APPROVAL
IFA	=	ISSUED FOR AUTHORIZATION/APPROVAL
INFO	=	FOR INFORMATION
!	=	WARNING (control of document revision status)

A	21.10.2019	ISSUED FOR INFORMATION		 Signed By Samit Paul 2019.10.21 18:34:35 +05'30'	 Approved By Alakapan S 2019.11.06 17:03:02 +05'30'	 Authorized By Morischristopher Jesumarian 2019.11.06 22:32:42 +05'30'
			SMP	PKP	LA/ANJ	JMC
REV	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	AUTHORIZED

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		CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP-COMMISSIONING OF ELECTRICAL EQUIPMENT	Project No. 080557C001	Document No. 080557C-000-QCP-1600-052		Rev. No. A	Page 2 of 2

S.No	CHECK AND INSPECTION ITEM	QCF CODE	SITE INSPECTION EXTENT		NOTES
			CONTR.	TECHNIP	
A)	ROTATING EQUIPMENT TEST				
A.1	LOAD RUNNING TEST	1600-C51	W/C	W/R	
2	MISCELLANEOUS INSPECTION FORM	W12	P	W/R	(1)

NOTES: ⁽¹⁾ SINGLE CERTIFICATE FOR EACH ITEM

GENERAL NOTES

- 1 THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THE JOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN- CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.
- 2 CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.

TechnipFMC IndianOil					PROJECT:										
					OWNER:										
QUALITY CONTROL FORM 1600-C51					PROJ. No.:		QCF REV.		SH. 1 OF 1						
ELECTRICAL EQUIPMENT – COMMISSIONING ROTATING EQUIPMENT TEST					CONTRACTOR:				1600-C51 N° ____						
GENERAL DATA															
Location / Area :				System / Subsystem:				Date (dd/mm/yy):							
Motor tag:				Manufacturer:				Serial no.:							
Substation:			Switchgear:			Column / Row:			Motor rated current: A						
Time (hh/mm):				Amb. Temperature:		<input type="text"/> °C <input type="text"/> °F		Humidity:		%					
D – LOAD RUNNING TEST															
Time	Volts (start)	Current (A)			Bearing temperature <input type="checkbox"/> °C <input type="checkbox"/> °F		Vibration (mm/s, RMS)						Normal noise	Abnormal noise	RPM (if required)
		Phase L1	Phase L2	Phase L3	DE	NDE	DE horiz	DE Vert.	DE Axial	NDE Horiz	NDE Vert.	NDE axial			
Cooling air temperature					Inlet <input type="text"/> °C <input type="text"/> °F		Outlet <input type="text"/> °F <input type="text"/> °C								
Cooling water temperature					Inlet <input type="text"/> °C <input type="text"/> °F		Outlet <input type="text"/> °F <input type="text"/> °C								
Acceleration time: s					Test results acceptable <input type="checkbox"/> Yes <input type="checkbox"/> No										
REMARKS															
INSPECTIONS	CONTRACTOR			PMC			OWNER			THRID PARTY					
NAME															
SINGATURE															
DATE															

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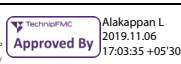
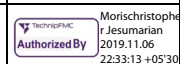
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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP- ELECTRICAL INSTALLATION GROUNDING AND LIGHTNING SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1610-001	Rev. No. A	Page 1 of 8

QUALITY CONTROL PLAN

ELECTRICAL INSTALLATION GROUNDING AND LIGHTNING SYSTEM

TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
EFR 01A	Grounding and Lightning System – Installation of Underground Grounding Conductor Summary Report
EFR 01B	Grounding and Lightning System - Installation & Connect. of Rod with Inspection Pit Summary Report
EFR 01C	Grounding and Lightning System - Installation. & Connect. of Rod without Inspection Pit Summary Report
EFR 01D	Grounding and Lightning System - Installation of Grounding Bar Summary Report
EFR 01E	Grounding and Lightning System - Installation of Overhead Conductor Summary Report
EFR 01F	Grounding and Lightning System - Equipment Grounding Connection Summary Report
EFR 01G	Grounding and Lightning System - Installation of Grounding Plate Summary Report
EFR 01H	Grounding and Lightning System - Installation of Lightning Protection System Summary Report
EFR 01I	Grounding and Lightning System - Grounding Resistance Measurement
EFR 01J	Grounding and Lightning System - Grounding Conductor Continuity Test

						
A	21.10.2019	ISSUE FOR INFORMATION	SMP	PKP	LA/ANJ	JMC
REV.	DATE	STATUS	WRITTEN BY	CHECKED BY	APPROVED BY	AUTHOR. BY

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	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP- ELECTRICAL INSTALLATION GROUNDING AND LIGHTNING SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1610-001	Rev. No. A	Page 2 of 8

REFERENCE DOCUMENTS:

- DRAWINGS

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W	=	WITNESS (RFI required)
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	CLIENT		INDIAN OIL CORPORATION LIMITED		
QCP- ELECTRICAL INSTALLATION GROUNDING AND LIGHTNING SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1610-001		Rev. No. A	Page 3 of 8

QUALITY CONTROL PLAN


ELECTRICAL INSTALLATION GROUNDING AND LIGHTNING SYSTEM

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
A	PRELIMINARY ACTIVITIES				
A1	CHECK OF CONTRACTOR DRAWINGS REVISION STATUS	NA	!	!	
A2	CONTRACTOR TECHNICAL SPECIFICATION AND PROCEDURE	NA	INFO	!	
A3	CONTRACTOR'S METHOD OF STATEMENT (IF REQUIRED)	NA	P	A	(1)
B	MATERIALS - BEFORE AND AFTER INSTALLATION				
B1	IDENTIFICATION AND PRESERVATION STATUS	NA		R	
C01	INSTALLATION OF UNDERGROUND GROUNDING CONDUCTOR				
C01-A	Conductor laying				
C01-A1	Trench/duct characteristics, location, burial depth and installation check Routing	NA	W/C	W/R	
C01-A2	acc. to drawings and check of interference with other buried systems Check if	NA	W/C	W/R	
C01-A3	the material is damaged and its conformance to specification, drawings	NA	W/C	W/R	
C01-A4	Grounding conductor type, material, size and insulation verified	NA	W/C	W/R	
C01-A5	Conductor laid properly and protected where required	NA	W/C	W/R	
C01-A6	Conductive backfill installed (if applicable)	NA	W/C	W/R	
C01-B	Conductor joints and derivations				
C01-B1	Thermal connections proper execution without cold joints or burnouts	NA	W/C	W/R	
C01-B2	Thermal connections protective compound / wrap application	NA	W/C	W/R	
C01-B3	Check of proper execution and quantity of the earthing conductor stub-ends	NA	W/C	W/R	
C01-C	Tests	EFR 01A	W/C	W/R	
C01-C1	Grounding continuity checked	EFR 01J	W/C	W/R	
C01-C2	Grounding resistance measured (where applicable)	EFR 01I	W/C	W/R	
C01-D	Final inspection	EFR 01A	W/C	W/R	
C01-D1	Identification green or yellow/green tape applied (only where applicable)	NA	W/C	W/R	
C01-D2	As-built marked up copy updated and available	NA	P	R	
C01-E	Final Documentation Review	EFR 01A	P	R	
C02	INSTALLATION & CONNECTION OF ROD WITH INSPECTION PIT				
C02-A	Installation of pit				
C02-A1	Soil access prepared	NA	W/C	W/R	

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QCP- ELECTRICAL INSTALLATION GROUNDING AND LIGHTNING SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1610-001		Rev. No. A	Page 4 of 8

QUALITY CONTROL PLAN

ELECTRICAL INSTALLATION GROUNDING AND LIGHTNING SYSTEM

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C02-A2	Correctness of material and dimensions for inspection pit	NA	W/C	W/R	
C02-A3	Conductive backfill installed (if applicable)	NA	W/C	W/R	
C02-A4	Tag and earth symbol applied (if applicable)	NA	W/C	W/R	
C02-B	Installation of rod				
C02-B1	Location and installation as per layout drawings	NA	W/C	W/R	
C02-B2	Correctness of material and dimensions for rod	NA	W/C	W/R	
C02-B3	Electrodes driven / placed to correct depth	NA	W/C	W/R	
C02-C	Connection execution				
C02-C1	Correctness of material and dimensions for connection fittings	NA	W/C	W/R	
C02-C2	Compression tap fixed or thermoweld connection done properly	NA	W/C	W/R	
C02-C3	Connections protected from corrosion	NA	W/C	W/R	
C02-D	Tests	EFR 01B	W/C	W/R	
C02-D1	Grounding continuity checked	EFR 01J	W/C	W/R	
C02-D2	Grounding resistance measured (where applicable)	EFR 01I	W/C	W/R	
C02-E	Final inspection	EFR 01B	W/C	W/R	
C02-E1	Identification green or yellow/green tape applied (only where applicable)	NA	W/C	W/R	
C02-E2	As-built marked up copy updated and available	NA	P	R	
C02-F	Final Documentation Review	EFR 01B	P	R	
C03	INSTALLATION & CONNECTION OF ROD WITHOUT INSPECTION PIT				
C03-A	Installation of rod				
C03-A1	Location and installation as per layout drawings	NA	W/C	W/R	
C03-A2	Correctness of material and dimensions for rod	NA	W/C	W/R	
C03-A3	Electrodes driven / placed to correct depth	NA	W/C	W/R	
C03-B	Connection execution				
C03-B1	Correctness of material and dimensions for connection fittings	NA	W/C	W/R	
C03-B2	Compression tap fixed or thermoweld connection done properly	NA	W/C	W/R	
C03-B3	Connections protected from corrosion	NA	W/C	W/R	
C03-C	Tests	EFR 01C	W/C	W/R	
C03-C1	Grounding continuity checked	EFR 01J	W/C	W/R	

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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP- ELECTRICAL INSTALLATION GROUNDING AND LIGHTNING SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1610-001	Rev. No. A	Page 5 of 8

QUALITY CONTROL PLAN

ELECTRICAL INSTALLATION GROUNDING AND LIGHTNING SYSTEM

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C03-C2	Grounding resistance measured (where applicable)	EFR 01I	W/C	W/R	
C03-D	Final inspection	EFR 01C	W/C	W/R	
C03-D1	Identification green or yellow/green tape applied (only where applicable)	NA	W/C	W/R	
C03-D2	As-built marked up copy updated and available	NA	P	R	
C03-E	Final Documentation Review	EFR 01C	P	R	
C04	INSTALLATION OF GROUNDING BAR				
C04-A	Installation of bar				
C04-A1	Surface prepared and supports prefabricated	NA	W/C	W/R	
C04-A2	Correctness of material and dimensions for grounding bar	NA	W/C	W/R	
C04-A3	Correctness of material and size for fixing bolts and insulators (if any)	NA	W/C	W/R	
C04-A4	Location and installation as per layout drawings	NA	W/C	W/R	
C04-B	Stub-up and concrete base				
C04-B1	Correctness of material and dimensions for conduit stub-up	NA	W/C	W/R	
C04-B2	Location and installation as per layout drawings	NA	W/C	W/R	
C04-C	Connection execution				
C04-C1	Fixing bolts tightened (torque)	NA	W/C	W/R	
C04-C2	Connections to grounding network done and protected from corrosion	NA	W/C	W/R	
C04-C3	Other conductor connections done and protected from corrosion	NA	W/C	W/R	
C04-D	Tests	EFR 01D	W/C	W/R	
C04-D1	Grounding continuity checked (not isolated bus bars)	NA	W/C	W/R	
C04-D2	Isolation checked (isolated bus bars)	NA	W/C	W/R	
C04-E	Final inspection	EFR 01D	W/C	W/R	
C04-E1	Identification green or yellow/green tape applied (only where applicable)	NA	W/C	W/R	
C04-E2	As-built marked up copy updated and available	NA	P	R	
C04-F	Final Documentation Review	EFR 01D	P	R	
C05	INSTALLATION OF OVERHEAD CONDUCTOR				
C05-A	Laying and fixing of aboveground conductor				
C05-A1	Checking of routing and interference with other aboveground systems	NA	W/C	W/R	
C05-A2	Check if the material is damaged and its conformance to specification, drawings	NA	W/C	W/R	

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QCP- ELECTRICAL INSTALLATION GROUNDING AND LIGHTNING SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1610-001		Rev. No. A	Page 6 of 8

QUALITY CONTROL PLAN

ELECTRICAL INSTALLATION GROUNDING AND LIGHTNING SYSTEM

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C05-A3	Grounding conductor type, material, size and insulation verified	NA	W/C	W/R	
C05-A4	Location and installation as per layout drawings and erection details	NA	W/C	W/R	
C05-A5	Correctness of material and dimensions for fittings	NA	W/C	W/R	
C05-A6	Fittings properly installed (correct type, location and inter distance)	NA	W/C	W/R	
C05-A7	Conductor laid properly and protected where required	NA	W/C	W/R	
C05-B	Conductor joints and derivations				
C05-B1	Compressions tap fixed or thermoweld connections done properly	NA	W/C	W/R	
C05-B2	Connections protected from corrosion	NA	W/C	W/R	
C05-B3	Tags installed (only where applicable)	NA	W/C	W/R	
C05-C	Tests	EFR 01E	W/C	W/R	
C05-C1	Grounding continuity checked (where applicable)	EFR 01J	W/C	W/R	
C05-D	Final inspection	EFR 01E	W/C	W/R	
C05-D1	Identification green or yellow/green tape applied (only where applicable)	NA	W/C	W/R	
C05-D2	As-built marked up copy updated and available	NA	P	R	
C05-E	Final Documentation Review	EFR 01E	P	R	
C06	EQUIPMENT GROUNDING CONNECTION				
C06-A	Connection execution				
C06-A1	Check of proper execution and quantity of the earthing conductor stub-ends	NA	W/C	W/R	
C06-A2	Correctness of material and dimensions for protection pipe & connection fittings	NA	W/C	W/R	
C06-A3	Location and installation as per erection details	NA	W/C	W/R	
C06-A4	Bolted or thermoweld connections done properly	NA	W/C	W/R	
C06-A5	Connections protected from corrosion	NA	W/C	W/R	
C06-A6	Tags installed (only where applicable)	NA	W/C	W/R	
C06-B	Tests	EFR 01F	W/C	W/R	
C06-B1	Grounding connection continuity checked	NA EFR	W/C	W/R	
C06-C	Final inspection	01F NA	W/C	W/R	
C06-C1	Identification green or yellow/green tape applied (only where applicable)	NA	W/C	W/R	
C06-C2	As-built marked up copy updated and available	EFR 01F	P	R	
C06-D	Final Documentation Review		P	R	

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QCP- ELECTRICAL INSTALLATION GROUNDING AND LIGHTNING SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1610-001	Rev. No. A	Page 7 of 8

QUALITY CONTROL PLAN

ELECTRICAL INSTALLATION GROUNDING AND LIGHTNING SYSTEM

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C07	INSTALLATION OF GROUNDING PLATE				
C07-A	Plate prefabrication				
C07-A1	Correctness of material for plate	NA	W/C	W/R	
C07-A2	Check of dimensions respect to the grounding connection size	NA	W/C	W/R	
C07-A3	Check of dimensions respect to sizing factors (presence of fireproofing, ...)	NA	W/C	W/R	
C07-B	Plate installation				
C07-B1	Check if equipment / structure is released for welding	NA	W/C	W/R	
C07-B2	Correctness of material of welding electrodes	NA	W/C	W/R	
C07-B3	Correctness of plate alignment, height and orientation	NA	W/C	W/R	
C07-B4	Anticorrosion and touch-up paint applied	NA	W/C	W/R	
C07-C	Tests	EFR 01G	W/C	W/R	
C07-C1	Plate stiffness (visual check)	NA	W/C	W/R	
C07-C2	Grounding continuity checked	NA	W/C	W/R	
C07-D	Final inspection	EFR 01G	W/C	W/R	
C07-D1	As-built marked up copy updated and available	NA	P	R	
C07-E	Final Documentation Review	EFR 01G	P	R	
C08	INSTALLATION OF LIGHTNING PROTECTION SYSTEM				
C08-A	Conductor laying and fixing				
C08-A1	Correctness of material, size and insulation for lightning conductors	NA	W/C	W/R	
C08-A2	Tape and other lightning conductors properly installed	NA	W/C	W/R	
C08-A3	Correctness of fixing accessories and of their location and inter distance	NA	W/C	W/R	
C08-B	Connections execution				
C08-B1	Bonding of associated metal structures done	NA	W/C	W/R	
C08-B2	Tightness of cross connections checked	NA	W/C	W/R	
C08-B3	Testing clamps and disconnecting points installed	NA	W/C	W/R	
C08-B4	Surge protections installed (if applicable)	NA	W/C	W/R	
C08-B5	Connection to earthing network	NA	W/C	W/R	
C08-B6	Tags installed (only where applicable)	NA	W/C	W/R	
C08-C	Installation of air terminals				

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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP- ELECTRICAL INSTALLATION GROUNDING AND LIGHTNING SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1610-001	Rev. No. A	Page 8 of 8

QUALITY CONTROL PLAN

ELECTRICAL INSTALLATION GROUNDING AND LIGHTNING SYSTEM

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C08-C1	Air terminals installed as per drawings	NA EFR	W/C	W/R	
C08-D	Tests	01H EFR	W/C	W/R	
C08-D1	Grounding continuity checked	01J EFR	W/C	W/R	
C08-D2	Ground resistance tests (isolated grounding electrodes only)	01I EFR	W/C	W/R	
C08-E	Final inspection	01H NA	W	S	
C08-E1	Identification green or yellow/green tape applied (only where applicable)	NA	W/C	W/R	
C08-E2	As-built marked up copy updated and available	EFR 01H	P	R	
C08-F	Final Documentation Review		P	R	

NOTES:

- (1) A copy of the document will be delivered to Owner for information.

GENERAL NOTES

- THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THE JOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN- CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.
- CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.

		PROJECT:					
		OWNER:					
QUALITY CONTROL FORM EFR 01A		PROJ. No.:	QCF REV.	SH. 1 OF 1			
GROUNDING AND LIGHTNING SYSTEM/ INSTAL. OF UNDERGROUND GROUNDING CONDUCTOR SUMMARY REPORT		CONTRACTOR:		EFR 01A N° _____			
		GENERAL DATA					
Tag N°:							
Location / area:		System / subsystem:		Date (dd/mm/yy):			
Weather :		Last rain (dd/mm/yy):		Soil conditions: <input type="checkbox"/> Wet <input type="checkbox"/> Damp <input type="checkbox"/> Dry <input type="checkbox"/> Frozen			
Soil type: <input type="checkbox"/> Gravel <input type="checkbox"/> Clay <input type="checkbox"/> Sand <input type="checkbox"/> Loam <input type="checkbox"/> Chemical backfill <input type="checkbox"/> Other					Starting time:		
<input type="checkbox"/> Bare wire grid		<input type="checkbox"/> Insulated wire grid		Earthing rod <input type="checkbox"/> Single <input type="checkbox"/> Group			
Ref. drawing:							
Conductor section:	1	2	Conductor length:	1	2		
	3	4		3	4		
No. of connections:		1 2 3 4					
INSTALLATION INSPECTION							
INSPECTIONS		N.A.	ACC.	REPORT / REFERENCE	INSPECTOR SIGNATURE & DATE		
					CONTRACTOR	TECHNIP	OWNER
A - Conductor laying							
A1.	Trench/duct characteristics, location, burial depth and installation check	<input type="checkbox"/>	<input type="checkbox"/>				
A2.	Routing acc. to drawings and check of interference with other buried systems	<input type="checkbox"/>	<input type="checkbox"/>				
A3.	Check if the material is damaged and its conformance to specification, drawings	<input type="checkbox"/>	<input type="checkbox"/>				
A4.	Grounding conductor type, material, size and insulation verified	<input type="checkbox"/>	<input type="checkbox"/>				
A5.	Conductor laid properly and protected where required	<input type="checkbox"/>	<input type="checkbox"/>				
A6.		Conductive backfill installed (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>			
B - Conductor joints and derivations							
B1.	Thermal connections proper execution without cold joints or burnouts	<input type="checkbox"/>	<input type="checkbox"/>				
B2.	Thermal connections protective compound / wrap application	<input type="checkbox"/>	<input type="checkbox"/>				
B3.	Check of proper execution and quantity of the earthing conductor stub-ends	<input type="checkbox"/>	<input type="checkbox"/>				
C - Tests				EFR 01J (*) EFR 01I (*)			
C1.	Grounding continuity checked	<input type="checkbox"/>	<input type="checkbox"/>				
C2.	Grounding resistance measured (where applicable)	<input type="checkbox"/>	<input type="checkbox"/>				
D - Final inspection							
D1.	Identification green or yellow/green tape applied (only where applicable)	<input type="checkbox"/>	<input type="checkbox"/>				
D2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>				
Notes: A key grounding plan showing the location of the grounding mat portion shall be attached to this form. (*) THE QC REPORTS N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES: EFR 01J N° _____ EFR 01I N° _____							
REMARKS:							
E-FINAL DOC. REVIEW	INSPECTORS		CONTRACTOR		PMC		OWNER
	NAME						
	SIGNATURE						
	DATE						



PROJECT:

OWNER:

QUALITY CONTROL FORM

EFR 01B

PROJ. No.:

QCF REV.

SH. 1 OF 1

GROUNDING AND LIGHTNING SYSTEM INSTAL. & CONNECT. OF ROD WITH INSPECTION PIT SUMMARY REPORT

CONTRACTOR:

EFR 01B N° _____

GENERAL DATA

Tag N° :

Location / area:

System / subsystem:

Date (dd/mm/yy):

Weather:

Last rain (dd/mm/yy):

Soil conditions: ☐ Wet ☐ Damp ☐ Dry ☐ FrozenSoil type: ☐ Gravel ☐ Clay ☐ Sand ☐ Loam ☐ Chemical backfill ☐ Other _____

Starting time:

☐ Bare wire grid☐ Insulated wire grid

Earthing rod

☐ Single☐ Group

Ref. drawing:

Rod diameter:

1

2

Rod length:

1

2

No. of rods:

1

2

INSPECTIONS (Ref.
to QCP 1610.01)

N.A.

ACC.

REPORT /
REFERENCE

INSPECTOR SIGNATURE & DATE

CONTRACTOR

TECHNIP

OWNER

A - Installation of pit

A1. Soil access prepared

☐☐

A2. Correctness of material and dimensions for inspection pit

☐☐

A3. Conductive backfill installed (if applicable)

☐☐

A4. Tag and earth symbol applied (if applicable)

☐☐**B - Installation of rod**

B1. Location and installation as per layout drawings

☐☐

B2. Correctness of material and dimensions for rod

☐☐

B3. Electrodes driven / placed to correct depth

☐☐**C - Connection execution**

C1. Correctness of material and dimensions for connection fittings

☐☐

C2. Compression tap fixed or thermoweld connection done properly

☐☐

C3. Connections protected from corrosion

☐☐**D - Tests**

D1. Grounding continuity checked

☐☐

D2. Grounding resistance measured (where applicable)

☐☐

EFR 01J (*)

EFR 01I (*)

E - Final inspection

E1. Identification green or yellow/green tape applied (only where applicable)

☐☐

E2. As-built marked up copy updated and available

☐☐

Notes: A key grounding plan showing the location of the grounding rod(s) shall be attached to this form.

(*) THE QC REPORTS N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES:

EFR 01J N° _____ EFR 01I N° _____



REMARKS:



F- FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR	PMC	OWNER
	NAME			
	SIGNATURE			
	DATE			

		PROJECT:			
		OWNER:			
QUALITY CONTROL FORM EFR 01C		PROJ. No.:	QCF REV.	SH. 1 OF 1	
GROUNDING AND LIGHTNING SYSTEM INSTAL. & CONNECT. OF ROD WITHOUT INSPECTION PIT SUMMARY REPORT		CONTRACTOR:		EFR 01C N° ____	
GENERAL DATA					
Tag N° :					
Location / area:		System / subsystem:		Date (dd/mm/yy):	
Weather:		Last rain (dd/mm/yy):		Soil conditions: <input type="checkbox"/> Wet <input type="checkbox"/> Damp <input type="checkbox"/> Dry <input type="checkbox"/> Frozen	
Soil type: <input type="checkbox"/> Gravel <input type="checkbox"/> Clay <input type="checkbox"/> Sand <input type="checkbox"/> Loam <input type="checkbox"/> Chemical backfill <input type="checkbox"/> Other _____ Starting time:					
<input type="checkbox"/> Bare wire grid		<input type="checkbox"/> Insulated wire grid		Earthing rod <input type="checkbox"/> Single <input type="checkbox"/> Group Ref. drawing:	
Rod diameter:	1	2	Rod length:	1	2
			No. of rods:	1	2
INSPECTIONS (Ref. to QCP 1610.01)			N.A.	ACC.	REPORT / REFERENCE
			INSPECTOR SIGNATURE & DATE		
			CONTRACTOR.	TECHNIP	OWNER
A - Installation of rod					
A1.	Location and installation as per layout drawings		<input type="checkbox"/>	<input type="checkbox"/>	
A2.	Correctness of material and dimensions for rod		<input type="checkbox"/>	<input type="checkbox"/>	
A3.	Electrodes driven / placed to correct depth		<input type="checkbox"/>	<input type="checkbox"/>	
B - Connection execution					
B1.	Correctness of material and dimensions for connection fittings		<input type="checkbox"/>	<input type="checkbox"/>	
B2.	Compression tap fixed or thermoweld connection done properly		<input type="checkbox"/>	<input type="checkbox"/>	
B3.	Connections protected from corrosion		<input type="checkbox"/>	<input type="checkbox"/>	
C - Tests					
C1.	Grounding continuity checked		<input type="checkbox"/>	<input type="checkbox"/>	EFR 01J (*)
C2.	Grounding resistance measured (where applicable)		<input type="checkbox"/>	<input type="checkbox"/>	EFR 01I (*)
D - Final inspection					
D1.	Identification green or yellow/green tape applied (only where applicable)		<input type="checkbox"/>	<input type="checkbox"/>	
D2.	As-built marked up copy updated and available		<input type="checkbox"/>	<input type="checkbox"/>	
Notes: A key grounding plan showing the location of the grounding rod(s) shall be attached to this form. (*) THE QC REPORTS N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : EFR 01J N° _____ EFR 01I N° _____					
REMARKS :					
E- FINAL DOC. REVIEW	INSPECTORS		CONTRACTOR		PMC
	NAME		NAME		NAME
	SIGNATURE		SIGNATURE		SIGNATURE
	DATE		DATE		DATE

		PROJECT:					
		OWNER:					
QUALITY CONTROL FORM EFR 01D		PROJ. No.:	QCF REV.	SH. 1 OF 1			
GROUNDING AND LIGHTNING SYSTEM INSTALLATION OF GROUNDING BAR SUMMARY REPORT		CONTRACTOR:		EFR 01D N° ____			
GENERAL DATA							
Tag N° :							
Location / area:		System / subsystem:		Date (dd/mm/yy):			
Weather:		Bar <input type="checkbox"/> Bare <input type="checkbox"/> Insulated		Ref. drawing:			
Bar dimensions (length x height x width):		1	2	No. of bars:	1 2		
INSPECTIONS (Ref. to QCP 1610.01)		N.A.	ACC.	REPORT / REFERENC E	INSPECTOR SIGNATURE & DATE		
					CONTRACTOR	TECHNIP	OWNER
A - Installation of bar							
A1.	Surface prepared and supports prefabricated	<input type="checkbox"/>	<input type="checkbox"/>				
A2.	Correctness of material and dimensions for grounding bar	<input type="checkbox"/>	<input type="checkbox"/>				
A3.	Correctness of material and size for fixing bolts and insulators (if any)	<input type="checkbox"/>	<input type="checkbox"/>				
A4.	Location and installation as per layout drawings	<input type="checkbox"/>	<input type="checkbox"/>				
B - Stub-up and concrete base							
B1.	Correctness of material and dimensions for conduit stub-up	<input type="checkbox"/>	<input type="checkbox"/>				
B2.	Location and installation as per layout drawings	<input type="checkbox"/>	<input type="checkbox"/>				
C - Connection execution							
C1.	Fixing bolts tightened	<input type="checkbox"/>	<input type="checkbox"/>				
C2.	Connections to grounding network done and protected from corrosion	<input type="checkbox"/>	<input type="checkbox"/>				
C3.	Other conductor connections done and protected from corrosion	<input type="checkbox"/>	<input type="checkbox"/>				
D - Tests							
D1.	Grounding continuity checked (not isolated bus bars)	<input type="checkbox"/>	<input type="checkbox"/>				
D2.	Isolation checked (isolated bus bars)	<input type="checkbox"/>	<input type="checkbox"/>				
E - Final inspection							
E1.	Identification green or yellow/green tape applied (only where applicable)	<input type="checkbox"/>	<input type="checkbox"/>				
E2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>				
Note: A key grounding plan showing the location of the grounding bar(s) shall be attached to this form.							
REMARKS :							
F- FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR	PMC	OWNER			
	NAME						
	SIGNATURE						
	DATE						

		PROJECT:					
		OWNER:					
QUALITY CONTROL FORM		EFR 01E		PROJ. No.:		QCF REV.	SH. 1 OF 1
GROUNDING AND LIGHTNING SYSTEM INSTALLATION OF OVERHEAD CONDUCTOR SUMMARY REPORT				SUBCONTRACTOR:		EFR 01E N° _____	
GENERAL DATA							
Tag N° :							
Location / area:		System / subsystem:			Date (dd/mm/yy):		
Weather:		Conductor <input type="checkbox"/> Bare <input type="checkbox"/> Insulated			Ref. drawing:		
Conductor section:	1	2	Conductor length:	1	2	No. of connections:	1
	3	4		3	4		3
INSPECTIONS (Ref. to QCP 1610.01)				N.A.	ACC.	REPORT / REFERENCE	INSPECTOR SIGNATURE & DATE
							CONTRACTOR TECHNIP OWNER
A - Laying and fixing of aboveground conductor							
A1.	Checking of routing and interference with other aboveground systems			<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Check if the material is damaged and its conformance to specification, drawings			<input type="checkbox"/>	<input type="checkbox"/>		
A3.	Grounding conductor type, material, size and insulation verified			<input type="checkbox"/>	<input type="checkbox"/>		
A4.	Location and installation as per layout drawings and erection details			<input type="checkbox"/>	<input type="checkbox"/>		
A5.	Correctness of material and dimensions for fittings			<input type="checkbox"/>	<input type="checkbox"/>		
A6.	Fittings properly installed (correct type, location and inter distance)			<input type="checkbox"/>	<input type="checkbox"/>		
A7.	Conductor laid properly and protected where required			<input type="checkbox"/>	<input type="checkbox"/>		
B - Conductor joints and derivations							
B1.	Compressions tap fixed or thermoweld connections done properly			<input type="checkbox"/>	<input type="checkbox"/>		
B2.	Connections protected from corrosion			<input type="checkbox"/>	<input type="checkbox"/>		
B3.	Tags installed (only where applicable)			<input type="checkbox"/>	<input type="checkbox"/>		
C - Tests							
C1.	Grounding continuity checked (where applicable)			<input type="checkbox"/>	<input type="checkbox"/>	EFR 01J (*)	
D - Final inspection							
D1.	Identification green or yellow/green tape applied (only where applicable)			<input type="checkbox"/>	<input type="checkbox"/>		
D2.	As-built marked up copy updated and available			<input type="checkbox"/>	<input type="checkbox"/>		
Notes: A key grounding plan showing the location of the grounding conductor shall be attached to this form. (*) THE QC REPORT N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : EFR 01I N° _____							
REMARKS :							
E- FINAL DOC. REVIEW	INSPECTORS		CONTRACTOR		PMC		OWNER
	NAME						
	SIGNATURE						
	DATE						

 				PROJECT:					
				OWNER:					
QUALITY CONTROL FORM EFR 01F				PROJ. No.:		QCF REV.		SH. 1 OF 1	
GROUNDING AND LIGHTNING SYSTEM EQUIPMENT GROUNDING CONNECTION SUMMARY REPORT				CONTRACTOR:				EFR 01F N° ____	
GENERAL DATA									
Location / area:			System / subsystem:			Date (dd/mm/yy):			
Weather:			Conductor <input type="checkbox"/> Bare <input type="checkbox"/> Insulated			Ref. drawing:			
EQUIPMENT TYPE									
#	Type	Tag	Connections		#	Type	Tag	Connections	
			No.	Size				No.	Size
1					8				
2					9				
3					10				
4					11				
5					12				
6					13				
7					14				
INSPECTIONS (Ref. to QCP 1610.01)			N.A.	ACC	REPORT / REFERENCE		INSPECTOR SIGNATURE & DATE		
							CONTRACTOR	TECHNIP	OWNER
A - Connection execution									
A1.	Check of proper execution and quantity of the earthing conductor stub-ends	<input type="checkbox"/>	<input type="checkbox"/>						
A2.	Correctness of material and dimensions for protection pipe & connection fittings	<input type="checkbox"/>	<input type="checkbox"/>						
A3.	Location and installation as per erection details	<input type="checkbox"/>	<input type="checkbox"/>						
A4.	Bolted or thermoweld connections done properly	<input type="checkbox"/>	<input type="checkbox"/>						
A5.	Connections protected from corrosion	<input type="checkbox"/>	<input type="checkbox"/>						
A6.	Tags installed (only where applicable)	<input type="checkbox"/>	<input type="checkbox"/>						
B - Tests									
B1.	Grounding connection continuity checked	<input type="checkbox"/>	<input type="checkbox"/>						
C - Final inspection									
C1.	Identification green or yellow/green tape applied (only where applicable)	<input type="checkbox"/>	<input type="checkbox"/>						
C2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>						
REMARKS :									
D- FINAL DOC. REVIEW	INSPECTORS		CONTRACTOR		PMC		OWNER		
	NAME								
	SIGNATURE								
	DATE								

 		PROJECT:							
		OWNER:							
QUALITY CONTROL FORM		EFR 01G		PROJ. No.:	QCF REV.	SH. 1 OF 1			
GROUNDING AND LIGHTNING SYSTEM INSTALLATION OF GROUNDING PLATE SUMMARY REPORT				CONTRACTOR:		EFR 01G N° ____			
GENERAL DATA									
Location / area:		System / subsystem:		Date (dd/mm/yy):					
Weather:		Conductor <input type="checkbox"/> Bare <input type="checkbox"/> Insulated		Ref. drawing:					
EQUIPMENT TYPE									
#	Type	Tag	Plates		#	Type	Tag	Plates	
			No.	Size				No.	Size
1					8				
2					9				
3					10				
4					11				
5					12				
6					13				
7					14				
INSPECTIONS (Ref. to QCP 1610.01)			N.A.	ACC.	REPORT / REFERENCE		INSPECTOR SIGNATURE & DATE		
							CONTRACTOR	TECHNIP	OWNER
A - Plate prefabrication									
A1.	Correctness of material for plate		<input type="checkbox"/>	<input type="checkbox"/>					
A2.	Check of dimensions respect to the grounding connection size		<input type="checkbox"/>	<input type="checkbox"/>					
A3.	Check of dimensions respect to sizing factors (presence of fireproofing, ...)		<input type="checkbox"/>	<input type="checkbox"/>					
B - Plate installation									
B1.	Check if equipment / structure is released for welding		<input type="checkbox"/>	<input type="checkbox"/>					
B2.	Correctness of material for welding electrodes		<input type="checkbox"/>	<input type="checkbox"/>					
B3.	Correctness of plate alignment, height and orientation		<input type="checkbox"/>	<input type="checkbox"/>					
B4.	Anticorrosion and touch-up paint applied		<input type="checkbox"/>	<input type="checkbox"/>					
C - Tests									
C1.	Plate stiffness (visual check)		<input type="checkbox"/>	<input type="checkbox"/>					
C2.	Grounding continuity checked		<input type="checkbox"/>	<input type="checkbox"/>					
D - Final inspection									
D1.	As-built marked up copy updated and available		<input type="checkbox"/>	<input type="checkbox"/>					
REMARKS:									
E- FINAL DOC. REVIEW	INSPECTORS		CONTRACTOR		PMC		OWNER		
	NAME								
	SIGNATURE								
	DATE								

		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 01H		PROJ. No.:	QCF REV.	
GROUNDING AND LIGHTNING SYSTEM INSTALLATION OF LIGHTNING PROTECTION SYSTEM SUMMARY REPORT		CONTRACTOR: EFR 01H N° _____		
GENERAL DATA				
Tag N° :				
Location / area:		System / subsystem:		
Weather:		Date (dd/mm/yy):		
Conductor section: 1 2		Conductor <input type="checkbox"/> Bare <input type="checkbox"/> Insulated		
Air terminal type: a b		Ref. drawing:		
Conductor length: 1 2		No. of connections: 1 2		
Air terminal size: a b		No. of air terminals: a b		
INSPECTIONS (Ref. to QCP 1610.01)		N.A.	ACC.	
A - Conductor laying and fixing		REPORT / REFERENCE		
A1.	Correctness of material, size and insulation for lightning conductors	<input type="checkbox"/>	<input type="checkbox"/>	
A2.	Tape and other lightning conductors properly installed	<input type="checkbox"/>	<input type="checkbox"/>	
A3.	Correctness of fixing accessories and of their location and interdistance	<input type="checkbox"/>	<input type="checkbox"/>	
B - Connections execution		INSPECTOR SIGNATURE & DATE		
B1.	Bonding of associated metal structures done	<input type="checkbox"/>	<input type="checkbox"/>	
B2.	Tightness of cross connections checked	<input type="checkbox"/>	<input type="checkbox"/>	
B3.	Testing clamps and disconnecting points installed	<input type="checkbox"/>	<input type="checkbox"/>	
B4.	Surge protections installed (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>	
B5.	Connection to earthing network	<input type="checkbox"/>	<input type="checkbox"/>	
B6.	Tags installed (only where applicable)	<input type="checkbox"/>	<input type="checkbox"/>	
C - Installation of air terminals		CONTRACTOR		
C1.	Air terminals installed as per drawings	<input type="checkbox"/>	<input type="checkbox"/>	
D - Tests		TECHNIP	OWNER	
D1.	Grounding continuity checked	<input type="checkbox"/>	<input type="checkbox"/>	
D2.	Ground resistance tests (isolated grounding electrodes only)	<input type="checkbox"/>	<input type="checkbox"/>	
E - Final inspection		EFR 01J (*)	EFR 01I (*)	
E1.	Identification green or yellow/green tape applied (only where applicable)	<input type="checkbox"/>	<input type="checkbox"/>	
E2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>	
Notes: A key grounding plan showing the location of the lightning protection system shall be attached to this form. (*) THE QC REPORTS N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : EFR 01J N° _____ EFR 01I N° _____				
REMARKS :				
F - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR	PMC	
	NAME			OWNER
	SIGNATURE			
	DATE			

		PROJECT:																																																																																																				
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QUALITY CONTROL FORM	EFR 01I	PROJ. No.:	QCF REV.																																																																																																			
GROUNDING AND LIGHTNING SYSTEM GROUNDING RESISTANCE MEASUREMENT		CONTRACTOR:																																																																																																				
		EFR 01I N° ____																																																																																																				
GENERAL DATA																																																																																																						
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Location / area:	System / subsystem:	Date (dd/mm/yy):																																																																																																				
Weather:	Last rain (dd/mm/yy):	Soil conditions: <input type="checkbox"/> Wet <input type="checkbox"/> Damp <input type="checkbox"/> Dry <input type="checkbox"/> Frozen																																																																																																				
Soil type: <input type="checkbox"/> Gravel <input type="checkbox"/> Clay <input type="checkbox"/> Sand <input type="checkbox"/> Loam <input type="checkbox"/> Chemical backfill <input type="checkbox"/> Other _____		Starting time:																																																																																																				
<input type="checkbox"/> Bare wire grid <input type="checkbox"/> Insulated wire grid		Earthing rod <input type="checkbox"/> Single <input type="checkbox"/> Group																																																																																																				
Ref. drawing:																																																																																																						
RESISTANCE MEASUREMENT																																																																																																						
Earth resist. tester manuf.:	Type:	Calibration date:	Recalibration date:																																																																																																			
Overall distance "D" between (1) and (3) ____		<input type="checkbox"/> m <input type="checkbox"/> ft	Direction of (3) and (2) from (1) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> W <input type="checkbox"/> S																																																																																																			
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> (1) ↑ ● C1 </div> <div style="text-align: center;"> (2) ↑ ● P1 </div> <div style="text-align: center;"> (3) ↑ ● P2 </div> <div style="text-align: center;"> ● C2 </div> </div> <div style="border: 1px solid black; padding: 2px; margin-top: 5px; text-align: center;">Earth resistance tester</div>		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Distance (1) to (2)</th> <th>% of D</th> <th>Resistance Ω</th> <th>Distance (1) to (2)</th> <th>% of D</th> <th>Resistance Ω</th> <th>Distance (1) to (2)</th> <th>% of D</th> <th>Resistance Ω</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		Distance (1) to (2)	% of D	Resistance Ω	Distance (1) to (2)	% of D	Resistance Ω	Distance (1) to (2)	% of D	Resistance Ω																																																																																										
Distance (1) to (2)	% of D	Resistance Ω	Distance (1) to (2)	% of D	Resistance Ω	Distance (1) to (2)	% of D	Resistance Ω																																																																																														
(1) Mat / rod under test (2) Potential probe (3) Remote current probe																																																																																																						
Average resistance value: Ω <input type="checkbox"/> Acceptable <input type="checkbox"/> Not acceptable																																																																																																						
Grounding resistance plot																																																																																																						
<div style="display: flex;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); padding-right: 10px;">Grounding resistance (Ω)</div> </div>																																																																																																						
Distance (C1P1) to P2 <input type="checkbox"/> Meters <input type="checkbox"/> Feet																																																																																																						
REMARKS :																																																																																																						
INSPECTORS	CONTRACTOR	PMC	OWNER																																																																																																			
NAME																																																																																																						
SIGNATURE																																																																																																						
DATE																																																																																																						



PROJECT:

OWNER:

QUALITY CONTROL FORM

EFR 01J

PROJ. No.:

QCF REV.

SH. 1 OF 1

**GROUNDING AND LIGHTNING SYSTEM
GROUNDING CONDUCTOR CONTINUITY TEST**

CONTRACTOR:

EFR 01J N° ____

GENERAL DATA

Location / area:	System / subsystem:	Date (dd/mm/yy):
Weather:	Last rain (dd/mm/yy):	Soil conditions: <input type="checkbox"/> Wet <input type="checkbox"/> Damp <input type="checkbox"/> Dry <input type="checkbox"/> Frozen
Soil type: <input type="checkbox"/> Gravel <input type="checkbox"/> Clay <input type="checkbox"/> Sand <input type="checkbox"/> Loam <input type="checkbox"/> Chemical backfill <input type="checkbox"/> Other _____	Starting time:	
<input type="checkbox"/> Bare wire	<input type="checkbox"/> Insulated wire	Ref. drawing:

GROUNDING CONDUCTOR CONTINUITY TEST POINT-TO-POINT LOCATION



Tester manufacturer:	Type:	Calibration date:	Recalibration date:
----------------------	-------	-------------------	---------------------

Wire n.	From point	To point	Acceptable	Wire n.	From point	To point	Acceptable
W 1			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 29			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 2			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 30			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 3			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 31			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 4			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 32			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 5			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 33			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 6			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 34			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 7			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 35			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 8			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 36			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 9			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 37			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 10			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 38			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 11			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 39			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 12			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 40			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 13			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 41			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 14			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 42			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 15			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 43			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 16			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 44			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 17			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 45			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 18			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 46			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 19			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 47			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 20			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 48			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 21			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 49			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 22			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 50			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 23			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 51			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 24			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 52			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 25			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 53			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 26			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 54			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 27			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 55			<input type="checkbox"/> Yes <input type="checkbox"/> No
W 28			<input type="checkbox"/> Yes <input type="checkbox"/> No	W 56			<input type="checkbox"/> Yes <input type="checkbox"/> No

Note: A key grounding plan showing the location of the numbered wires and points shall be attached to this form.

REMARKS:





INSPECTORS	CONTRACTOR	PMC	OWNER
NAME			
SIGNATURE			
DATE			

		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
		CLIENT	INDIAN OIL CORPORATION LIMITED		
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QUALITY CONTROL PLAN



ELECTRICAL INSTALLATION SUBSTATION EQUIPMENT

TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
EFR 02A	Transformers and Reactors - Mechanical Install./Electrical Install./Summary Report
EFR 02C	Transformers and Reactors - Winding Resistance and Insulation Test
EFR 02D	Transformers and Reactors - Transformer Vector Group Test
EFR 02E	Transformers and Reactors - Dielectric Tests
EFR 02F	Transformers and Reactors - Transformers Turns Ratio Test
EFR 02G	Transformers and Reactors - Transformer on Load Tap Changer Tests
EFR 02H	Transformers and Reactors - Oil Analysis
EFR 03A	Switchgear and Controlgear - Mechanical Install. / Electrical Install. Summary Report
EFR 03C	Switchgear and Controlgear - Busbar Resistance, Insulation Resistance, HI-Pot Test
EFR 03D	Switchgear and Controlgear - Auxiliary Panel Installation Summary Report
EFR 03E	Switchgear and Controlgear - Power/Lighting Distribution Panel Functional Test
EFR 03F	Switchgear and Controlgear – Auto-change over scheme
EFR 03G	Switchgear and Controlgear - Circuit Breakers – Electrical Tests
EFR 03H	Switchgear and Controlgear - Disconnect Switches – Electrical Tests
EFR 03I	Switchgear and Controlgear - Bus Duct - Summary Report
EFR 03J	Switchgear and Controlgear - Bus Duct – Electrical Installation and Test
EFR 03K	Switchgear and Controlgear - Current Transformers
EFR 03L	Switchgear and Controlgear - Voltage Transformers
EFR 03M	Switchgear and Controlgear - Protective Relay / PLC I/O Assignment Report
EFR 03N	Switchgear and Controlgear - Protective Relay Testing Report
EFR 03O	Switchgear and Controlgear - Meters and Transducers Testing Report
EFR 03P	Switchgear and Controlgear - Capacitors and Power Factor Controllers Test

			 Written By	 Checked By	 Approved By	 Authorized By
0	20.11.2019	ISSUED FOR IMPLEMENTATION	TB	PKP / LA	LA	JMC
REV.	DATE	STATUS	WRITTEN BY	CHECKED BY	APPROVED BY	AUTHOR. BY
DOCUMENT REVISIONS						

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TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
EFR 03Q	Switchgear and Controlgear - Neutral Grounding Resistor and E.F. Monitoring System
EFR 03R	Switchgear and Controlgear - SCADA System
EFR 03S	Switchgear and Controlgear - Alarm System
EFR 04A	Batteries, Chargers, UPS and VFD Systems - UPS Summary Report
EFR 04B	Batteries, Chargers, UPS and VFD Systems - UPS Electrical Installation
EFR 04C	Batteries, Chargers, UPS and VFD Systems - DC System Summary Report
EFR 04D	Batteries, Chargers, UPS and VFD Systems - DC System Electrical Installation
EFR 04E	Batteries, Chargers, UPS and VFD Systems - DC System Distribution Board Functional Test
EFR 04F	Batteries, Chargers, UPS and VFD Systems - Batteries Summary Report
EFR 04G	Batteries, Chargers, UPS and VFD Systems - Batteries Connection
EFR 04H	Batteries, Chargers, UPS and VFD Systems - Variable Frequency Drive Summary Report
EFR 04I	Electrical Control System Installation Summary Report
EFR 04J	Load Bank Installation Summary Report
EFR 04K	Electrical Load Shedding Installation Summary Report

REFERENCE DOCUMENTS:

- 080557C-000-PP-805 SITE COORDINATION & COMMUNICATION PROCEDURE.
- 080557C-000-JSD-1600-003 SPECIFICATIONS FOR FIELD ELECTRICAL INSTALLATION, TESTING, PRE-COMMISSIONING AND COMMISSIONING
- DRAWINGS

LEGENDA

H	=	HOLD (RFI required - Work stop for inspection)
W	=	WITNESS (RFI required)
WC	=	100 % SUPERVISION AND EXAMINATION BY CONTRACTOR.
P	=	PREPARATION.
S	=	SURVEILLANCE (No RFI)
R	=	REVIEW OF REPORTS
N.A.	=	NOT APPLICABLE
A	=	AUTHORIZATION / APPROVAL
IFA	=	ISSUED FOR AUTHORIZATION/APPROVAL
INFO	=	FOR INFORMATION
!	=	WARNING (control of document revision status)

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QUALITY CONTROL PLAN



ELECTRICAL INSTALLATION SUBSTATION EQUIPMENT

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
A	PRELIMINARY ACTIVITIES				
A1	Check of contractor drawings revision status	By Contractor	!	!	(1)
A2	Contractor technical specification and procedure	By Contractor	INFO	R/A	
A3	Contractor's method of statement (if required)	By Contractor	P	R	
B	MATERIALS - BEFORE AND AFTER INSTALLATION				
B1	IDENTIFICATION AND PRESERVATION STATUS	By Contractor	WC	W/R	
C01	INSTALLATION OF MAIN TRANSFORMERS, LIQUID IMMERSED				
C01-A	Transportation and alignment				
C01-A1	Compliance of equipment rating and nameplate with documentation	By Contractor	WC	R	
C01-A2	Impact recorder inspection before unloading (if present)	By Contractor	WC	R	
C01-A3	No indication of rough handling	By Contractor	WC	R	
C01-A4	All shipping bracings removed	By Contractor	WC	S	
C01-A5	Required area and equipment clearances	By Contractor	WC	S	
C01-A6	Equipment correctly aligned and levelled	By Contractor	WC	W/R	
C01-B	Mechanical installation				
C01-B1	Equipment correctly anchored on its foundation	By Contractor	WC	W/R	
C01-B2	Equipment components (radiators, bushings, etc.) assembled correctly	By Contractor	WC	W/R	
C01-B3	No missing hardware and accessory components not damaged	By Contractor	WC	S	
C01-B4	Nameplates	By Contractor	WC	R	
C01-B5	Insulating liquid filling and level check	By Contractor	WC	S	
C01-B6	Absence of insulating liquid leakages	By Contractor	WC	S	
C01-B7	Oil treatment (only where applicable)	By Contractor	WC	S	
C01-B8	Operability of all valves (drain, sample, etc.) and flange gaskets conditions	By Contractor	WC	W/R	
C01-C	Electrical installation				
C01-C1	Bushings cleaned and ready for cable / bus duct connection	By Contractor	WC	S	
C01-C2	Earthing connections done	By Contractor	WC	W/R	
C01-C3	Surge arresters installed (if applicable)	By Contractor	WC	W/R	

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QUALITY CONTROL PLAN



ELECTRICAL INSTALLATION SUBSTATION EQUIPMENT

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C01-C4	Correct operation of fans and oil pumps	By Contractor	WC	W/R	
C01-C5	Correct Installation of Silica Gel Breather	By Contractor	WC	W/R	
C01-C6	Correct operation of star point earthing switch (if applicable)	By Contractor	WC	W/R	
C01-C7	Correct operation of Buchholz relay alarm and trip circuits	By Contractor	WC	W/R	
C01-C8	Correct operation of oil level gauge alarm circuits	By Contractor	WC	W/R	
C01-C9	Correct operation of winding and oil temp. detector alarm and trip circuits	By Contractor	WC	W/R	
C01-C10	Correct operation of pressure devices trip circuits	By Contractor	WC	W/R	
C01-C11	Insulation test for low voltage auxiliary circuits	By Contractor	WC	W/R	
C01-C12	Protective devices settings	By Contractor	WC	W/R	
C01-D	Testing	EFR 02A	WC	W/R	
C01-D1	Winding resistance measurement	EFR 02C	WC	W/R	
C01-D2	Insulation test (megger)	EFR 02C	WC	W/R	
C01-D3	Overvoltage test	EFR 02C	WC	W/R	
C01-D4	Vector group test	EFR 02D	WC	W/R	
C01-D5	Dielectric absorption and polarization index test	EFR 02E	WC	W/R	
C01-D6	Power factor test	EFR 02E	WC	W/R	
C01-D7	Turns ratio test	EFR 02F	WC	W/R	
C01-D8	On load / Off load tap changer tests	EFR 02G	WC	W/R	
C01-D9	Oil analysis	EFR 02H	WC	W/R	
C01-E	Final inspection	EFR 02A	WC	R	
C01-E1	Connection of primary and secondary cables	EFR 02A	WC	W/R	
C01-E2	Connection of auxiliary cables	EFR 02A	WC	W/R	
C01-E3	Bolted connections resistance measurement	EFR 02A	WC	W/R	
C01-E4	Surrounding area cleared	EFR 02A	WC	S	
C01-E5	Warning signs and posts installed	EFR 02A	WC	R	
C01-E6	As-built marked up copy updated and available	EFR 02A	P	R	
C01-E7	Equipment ready for energization	EFR 02A	WC	W/R	
C01-F	Final Documentation Review	EFR 02A	P	R	

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ELECTRICAL INSTALLATION SUBSTATION EQUIPMENT

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C03	INSTALLATION OF DISTRIBUTION TRANSFORMERS, LIQUID IMMERSED				
C03-A	Transportation and alignment				
C03-A1	Compliance of equipment rating and nameplate with documentation	By Contractor	WC	R	
C03-A2	Impact recorder inspection before unloading (if present)	By Contractor.	WC	S	
C03-A3	No indication of rough handling	By Contractor.	WC	S	
C03-A4	All shipping bracings removed	By Contractor.	WC	S	
C03-A5	Required area and equipment clearances	By Contractor.	WC	W/R	
C03-A6	Equipment correctly aligned and levelled	By Contractor.	WC	W/R	
C03-B	Mechanical installation				
C03-B1	Equipment correctly anchored on its foundation	By Contractor.	WC	W/R	
C03-B2	Equipment components (radiators, bushings, etc.) assembled correctly	By Contractor.	WC	W/R	
C03-B3	No missing hardware and accessory components not damaged	By Contractor.	WC	W/R	
C03-B4	Nameplates	By Contractor.	WC	R	
C03-B5	Insulating liquid filling and level check	By Contractor.	WC	R	
C03-B6	Absence of insulating liquid leakages	By Contractor.	WC	R	
C03-B7	Oil treatment (only where applicable)	By Contractor.	WC	R	
C03-B8	Operability of all valves (drain, sample, etc) and flange gaskets conditions	By Contractor.	WC	W/R	
C03-C	Electrical installation				
C03-C1	Bushings cleaned and ready for cable / bus duct connection	By Contractor.	WC	W/R	
C03-C2	Earthing connections done	By Contractor.	WC	W/R	
C03-C3	Surge arresters installed (if applicable)	By Contractor.	WC	W/R	
C03-C4	Correct operation of fans and oil pumps	By Contractor.	WC	W/R	
C03-C5	Correct operation of star point earthing switch (if applicable)	By Contractor.	WC	W/R	
C03-C6	Correct operation of Buchholz relay alarm and trip circuits	By Contractor.	WC	W/R	
C03-C7	Correct operation of oil level gauge alarm circuits	By Contractor.	WC	W/R	
C03-C8	Correct operation of winding and oil temp. detector alarm and trip circuits	By Contractor.	WC	W/R	

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QUALITY CONTROL PLAN



ELECTRICAL INSTALLATION SUBSTATION EQUIPMENT

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C03-C9	Correct operation of pressure devices trip circuits	By Contractor.	WC	W/R	
C03-C10	Insulation test for low voltage auxiliary circuits	By Contractor.	WC	W/R	
C03-C11	Protective devices settings	By Contractor.	WC	W/R	
C03-D	Testing	EFR 02A	WC	W/R	
C03-D1	Winding resistance measurement	EFR 02C	WC	W/R	
C03-D2	Insulation test (megger)	EFR 02C	WC	W/R	
C03-D3	Overvoltage test	EFR 02C	WC	W/R	
C03-D4	Vector group test	EFR 02D	WC	W/R	
C03-D5	Dielectric absorption and polarization index test	EFR 02E	WC	W/R	
C03-D6	Power factor test	EFR 02E	WC	W/R	
C03-D7	Turns ratio test	EFR 02F	WC	W/R	
C03-D8	On load tap changer tests	EFR 02G	WC	W/R	
C03-D9	Oil analysis	EFR 02H	WC	W/R	
C03-E	Final inspection	EFR 02A	WC	W/R	
C03-E1	Connection of primary and secondary cables	By Contractor.	WC	W/R	
C03-E2	Connection of auxiliary cables	By Contractor.	WC	W/R	
C03-E3	Bolted connections resistance measurement	By Contractor.	WC	W/R	
C03-E4	Surrounding area cleared	By Contractor.	WC	W/R	
C03-E5	Warning signs and posts installed	By Contractor.	WC	W/R	
C03-E6	As-built marked up copy updated and available	By Contractor.	WC	W/R	
C03-E7	Equipment ready for energization	By Contractor.	WC	W/R	
C03-F	Final Documentation Review	EFR 02A	P	R	
C04	INSTALLATION OF DISTRIBUTION TRANSFORMERS, CAST RESIN / DRY				
C04-A	Transportation and alignment				
C04-A1	Compliance of equipment rating and nameplate with documentation	By Contractor.	WC	R	
C04-A2	Impact recorder inspection before unloading (if present)	By Contractor.	WC	S	
C04-A3	No indication of rough handling	By Contractor.	WC	S	

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QUALITY CONTROL PLAN



ELECTRICAL INSTALLATION SUBSTATION EQUIPMENT

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C04-A4	All shipping bracings removed	By Contractor.	WC	S	
C04-A5	Required area and equipment clearances	By Contractor.	WC	W/R	
C04-A6	Equipment correctly aligned and levelled	By Contractor.	WC	W/R	
C04-B	Mechanical installation				
C04-B1	Equipment correctly anchored on its foundation	By Contractor.	WC	W/R	
C04-B2	Equipment components (radiators, bushings, etc.) assembled correctly	By Contractor.	WC	W/R	
C04-B3	No missing hardware and accessory components not damaged	By Contractor.	WC	S	
C04-B4	Nameplates	By Contractor.	WC	R	
C04-B5	Insulating liquid filling and level check	By Contractor.	WC	W/R	
C04-B6	Absence of insulating liquid leakages	By Contractor.	WC	W/R	
C04-B7	Oil treatment (only where applicable)	By Contractor.	WC	W/R	
C04-B8	Operability of all valves (drain, sample, etc) and flange gaskets conditions	By Contractor.	WC	W/R	
C04-C	Electrical installation				
C04-C1	Bushings cleaned and ready for cable / bus duct connection	By Contractor.	WC	W/R	
C04-C2	Earthing connections done	By Contractor.	WC	W/R	
C04-C3	Surge arresters installed (if applicable)	By Contractor.	WC	W/R	
C04-C4	Correct operation of fans and oil pumps	By Contractor.	WC	W/R	
C04-C5	Correct operation of star point earthing switch (if applicable)	By Contractor.	WC	W/R	
C04-C6	Correct operation of Buchholz relay alarm and trip circuits	By Contractor.	WC	W/R	
C04-C7	Correct operation of oil level gauge alarm circuits	By Contractor.	WC	W/R	
C04-C8	Correct operation of winding and oil temp. detector alarm and trip circuits	By Contractor.	WC	W/R	
C04-C9	Correct operation of pressure devices trip circuits	By Contractor.	WC	W/R	
C04-C10	Insulation test for low voltage auxiliary circuits	By Contractor.	WC	W/R	
C04-C11	Protective devices settings	By Contractor.	WC	W/R	
C04-D	Testing	EFR 02A	WC	W/R	
C04-D1	Winding resistance measurement	EFR 02C	WC	W/R	
C04-D2	Insulation test (megger)	EFR 02C	WC	W/R	

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QUALITY CONTROL PLAN



ELECTRICAL INSTALLATION SUBSTATION EQUIPMENT

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C04-D3	Overvoltage test	EFR 02C	WC	W/R	
C04-D4	Vector group test	EFR 02D	WC	W/R	
C04-D5	Dielectric absorption and polarization index test	EFR 02E	WC	W/R	
C04-D6	Power factor test	EFR 02E	WC	W/R	
C04-D7	Turns ratio test	EFR 02F	WC	W/R	
C04-D8	On load tap changer tests	EFR 02G	WC	W/R	
C04-D9	Oil analysis	EFR 02H	WC	W/R	
C04-E	Final inspection	EFR 02A	WC	W/R	
C04-E1	Connection of primary and secondary cables	By Contractor.	WC	W/R	
C04-E2	Connection of auxiliary cables	By Contractor.	WC	W/R	
C04-E3	Bolted connections resistance measurement	By Contractor.	WC	W/R	
C04-E4	Surrounding area cleared	By Contractor.	WC	W/R	
C04-E5	Warning signs and posts installed	By Contractor.	WC	W/R	
C04-E6	As-built marked up copy updated and available	By Contractor.	WC	W/R	
C04-E7	Equipment ready for energization	By Contractor.	WC	W/R	
C04-F	Final Documentation Review	EFR 02A	P	R	
C05	INSTALLATION OF REACTOR				
C05-A	Transportation and alignment				
C05-A1	Compliance of equipment rating and nameplate with documentation	By Contractor.	WC	W/R	
C05-A2	Impact recorder inspection before unloading (if present)	By Contractor.	WC	W/R	
C05-A3	No indication of rough handling	By Contractor.	WC	W/R	
C05-A4	All shipping bracings removed	By Contractor.	WC	W/R	
C05-A5	Required area and equipment clearances	By Contractor.	WC	W/R	
C05-A6	Equipment correctly aligned and levelled	By Contractor.	WC	W/R	
C05-B	Mechanical installation				
C05-B1	Equipment correctly anchored on its foundation	By Contractor.	WC	W/R	
C05-B2	Equipment components (radiators, bushings, etc.) assembled correctly	By Contractor.	WC	W/R	

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S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C05-B3	No missing hardware and accessory components not damaged	By Contractor.	WC	W/R	
C05-B4	Nameplates	By Contractor.	WC	W/R	
C05-B5	Insulating liquid filling and level check	By Contractor.	WC	W/R	
C05-B6	Absence of insulating liquid leakages	By Contractor.	WC	W/R	
C05-B7	Oil treatment (only where applicable)	By Contractor.	WC	W/R	
C05-B8	Operability of all valves (drain, sample, etc) and flange gaskets conditions	By Contractor.	WC	W/R	
C05-C	Electrical installation				
C05-C1	Bushings cleaned and ready for cable / bus duct connection	By Contractor.	WC	W/R	
C05-C2	Earthing connections done	By Contractor.	WC	W/R	
C05-C3	Surge arresters installed (if applicable)	By Contractor.	WC	W/R	
C05-C4	Correct operation of fans and oil pumps	By Contractor.	WC	W/R	
C05-C5	Correct operation of star point earthing switch (if applicable)	By Contractor.	WC	W/R	
C05-C6	Correct operation of Buchholz relay alarm and trip circuits	By Contractor.	WC	W/R	
C05-C7	Correct operation of oil level gauge alarm circuits	By Contractor.	WC	W/R	
C05-C8	Correct operation of winding and oil temp. detector alarm and trip circuits	By Contractor.	WC	W/R	
C05-C9	Correct operation of pressure devices trip circuits	By Contractor.	WC	W/R	
C05-C10	Insulation test for low voltage auxiliary circuits	By Contractor.	WC	W/R	
C05-C11	Protective devices settings	By Contractor.	WC	W/R	
C05-D	Testing	EFR 02A	WC	W/R	
C05-D1	Winding resistance measurement	EFR 02C	WC	W/R	
C05-D2	Insulation test (megger)	EFR 02C	WC	W/R	
C05-D3	Overvoltage test	EFR 02C	WC	W/R	
C05-D4	Vector group test	EFR 02D	WC	W/R	
C05-D5	Dielectric absorption and polarization index test	EFR 02E	WC	W/R	
C05-D6	Power factor test	EFR 02E	WC	W/R	
C05-D7	Turns ratio test	EFR 02F	WC	W/R	
C05-D8	On load tap changer tests	EFR 02G	WC	W/R	

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QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C05-D9	Oil analysis	EFR 02H	WC	W/R	
C05-E	Final inspection	EFR 02A	WC	W/R	
C05-E1	Connection of primary and secondary cables	By Contractor.	WC	W/R	
C05-E2	Connection of auxiliary cables	By Contractor.	WC	W/R	
C05-E3	Bolted connections resistance measurement	By Contractor.	WC	W/R	
C05-E4	Surrounding area cleared	By Contractor.	WC	W/R	
C05-E5	Warning signs and posts installed	By Contractor.	WC	W/R	
C05-E6	As-built marked up copy updated and available	By Contractor.	P	R	
C05-E7	Equipment ready for energization	By Contractor.	WC	W/R	
C05-F	Final Documentation Review	EFR 02A	P	R	
C06	INSTALLATION OF MEDIUM VOLTAGE SWITCHGEARS AND MCCs				
C06-A	Transportation and alignment				
C06-A1	Compliance of equipment rating and nameplate with documentation	By Contractor.	WC	R	
C06-A2	Impact recorder inspection before unloading (if present)	By Contractor.	WC	S	
C06-A3	No indication of rough handling	By Contractor.	WC	S	
C06-A4	All shipping bracings removed	By Contractor.	WC	S	
C06-A5	Required area and equipment clearances	By Contractor.	WC	W/R	
C06-A6	Panels correctly aligned and levelled	By Contractor.	WC	W/R	
C06-B	Mechanical installation				
C06-B1	Panels without mechanical damages and missing hardware	By Contractor.	WC	W/R	
C06-B2	Panels assembled, arranged and oriented correctly	By Contractor.	WC	W/R	
C06-B3	Panels anchorage, grounding and nameplate tagging	By Contractor.	WC	W/R	
C06-B4	Busbar connection ok	By Contractor.	WC	W/R	
C06-B5	Mechanical interlocks: attempt closure on locked-open devices	By Contractor.	WC	W/R	
C06-B6	Mechanical interlocks: attempt to open locked-closed devices	By Contractor.	WC	W/R	
C06-B7	Make key exchange with devices operated in off-normal position	By Contractor.	WC	W/R	
C06-B8	Inspect insulators for evidence of damage or surface contamination	By Contractor.	WC	W/R	

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S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C06-B9	Barriers and shutters operation checked	By Contractor.	WC	W/R	
C06-B10	Exercise all active components (doors, movement of withdrawable units.)	By Contractor.	WC	W/R	
C06-B11	Inspect all mechanical indicating devices for correct operation	By Contractor.	WC	W/R	
C06-C	Electrical installation				
C06-C1	Filter installed correctly and ventilation openings clear	By Contractor.	WC	W/R	
C06-C2	Fuses and breakers ratings verified	By Contractor.	WC	W/R	
C06-C3	Visual inspection on VTs and CTs	By Contractor.	WC	W/R	
C06-C4	VTs fuse / CB rating verification	By Contractor.	WC	W/R	
C06-C5	VTs and CTs drawout and grounding contacts & interlocks verification	By Contractor.	WC	W/R	
C06-C6	Instruments, relays and pilot lights verified as per requirements	By Contractor.	WC	W/R	
C06-C7	Instruments, relays and pilot lights wiring connections terminated properly	By Contractor.	WC	W/R	
C06-C8	Grounding connection satisfactory	By Contractor.	WC	W/R	
C06-C9	Terminal strips arrangement correct	By Contractor.	WC	W/R	
C06-C10	Fans operation check (where applicable)	By Contractor.	WC	W/R	
C06-C11	Completeness of accessories	By Contractor.	WC	W/R	
C06-D	Testing	EFR 03A	WC	W/R	
C06-D1	Busbar Resistance, Insulation Resistance, Hi-Pot Test	EFR 03C	WC	W/R	
C06-D2	Automatic Transfer Switch	EFR 03F	WC	W/R	
C06-D3	Circuit Breakers – Electrical Tests	EFR 03G	WC	W/R	
C06-D4	Disconnect Switches - Electrical Tests	EFR 03H	WC	W/R	
C06-D5	Current Transformers	EFR 03K	WC	W/R	
C06-D6	Voltage Transformers	EFR 03L	WC	W/R	
C06-D7	Protective Relay / PLC I/O Assignment Report	EFR 03M	WC	W/R	
C06-D8	Protective Relay Testing Report	EFR 03N	WC	W/R	
C06-D9	Meters And Transducers Testing Report	EFR 03O	WC	W/R	
C06-E	Final inspection	EFR 03A	P	W/R	
C06-E1	Cable terminal connections, colour coding and tagging correct	By Contractor.	WC	W/R	

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QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C06-E2	Cabling done neatly and cable entries properly sealed	By Contractor.	WC	W/R	
C06-E3	Compartment labels as per requirement, identification & warning labels complete	By Contractor.	WC	W/R	
C06-E4	As-built marked up copy updated and available	By Contractor.	P	R	
C06-F	Final Documentation Review	EFR 03A	P	R	
C07	INSTALLATION OF LOW VOLTAGE SWITCHGEARS AND MCCs				
C07-A	Transportation and alignment				
C07-A1	Compliance of equipment rating and nameplate with documentation	By Contractor.	WC	W/R	
C07-A2	Impact recorder inspection before unloading (if present)	By Contractor.	WC	S	
C07-A3	No indication of rough handling	By Contractor.	WC	S	
C07-A4	All shipping bracings removed	By Contractor.	WC	S	
C07-A5	Required area and equipment clearances	By Contractor.	WC	W/R	
C07-A6	Panels correctly aligned and levelled	By Contractor.	WC	W/R	
C07-B	Mechanical installation				
C07-B1	Panels without mechanical damages and missing hardware	By Contractor.	WC	W/R	
C07-B2	Panels assembled, arranged and oriented correctly	By Contractor.	WC	W/R	
C07-B3	Panels anchorage, grounding and nameplate tagging	By Contractor.	WC	W/R	
C07-B4	Busbar connection ok	By Contractor.	WC	W/R	
C07-B5	Mechanical interlocks: attempt closure on locked-open devices	By Contractor.	WC	W/R	
C07-B6	Mechanical interlocks: attempt to open locked-closed devices	By Contractor.	WC	W/R	
C07-B7	Make key exchange with devices operated in off-normal position	By Contractor.	WC	W/R	
C07-B8	Inspect insulators for evidence of damage or surface contamination	By Contractor.	WC	W/R	
C07-B9	Barriers and shutters operation checked	By Contractor.	WC	W/R	
C07-B10	Exercise all active components (doors, movement of withdrawable units.)	By Contractor.	WC	W/R	
C07-B11	Inspect all mechanical indicating devices for correct operation	By Contractor.	WC	W/R	
C07-C	Electrical installation				
C07-C1	Filter installed correctly and ventilation openings clear	By Contractor.	WC	W/R	

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QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
		By Contractor.	WC		
C07-C2	Fuses and breakers ratings verified			W/R	
C07-C3	Visual inspection on VTs and CTs	By Contractor.	WC	W/R	
C07-C4	VTs fuse / CB rating verification	By Contractor.	WC	W/R	
C07-C5	VTs and CTs drawout and grounding contacts & interlocks verification	By Contractor.	WC	W/R	
C07-C6	Instruments, relays and pilot lights verified as per requirements	By Contractor.	WC	W/R	
C07-C7	Instruments, relays and pilot lights wiring connections terminated properly	By Contractor.	WC	W/R	
C07-C8	Grounding connection satisfactory	By Contractor.	WC	W/R	
C07-C9	Terminal strips arrangement correct	By Contractor.	WC	W/R	
C07-C10	Fans operation check (where applicable)	By Contractor.	WC	W/R	
C07-C11	Completeness of accessories	By Contractor.	WC	W/R	
C07-D	Testing	EFR 03A	WC	W/R	
C07-D1	Busbar Resistance, Insulation Resistance, Hi-Pot Test	EFR 03C	WC	W/R	
C07-D2	Automatic Transfer Switch	EFR 03F	WC	W/R	
C07-D3	Circuit Breakers – Electrical Tests	EFR 03G	WC	W/R	
C07-D4	Disconnect Switches - Electrical Tests	EFR 03H	WC	W/R	
C07-D5	Current Transformers	EFR 03K	WC	W/R	
C07-D6	Voltage Transformers	EFR 03L	WC	W/R	
C07-D7	Protective Relay / PLC I/O Assignment Report	EFR 03M	WC	W/R	
C07-D8	Protective Relay Testing Report	EFR 03N	WC	W/R	
C07-D9	Meters And Transducers Testing Report	EFR 03O	WC	W/R	
C07-E	Final inspection	EFR 03A	WC	W/R	
C07-E1	Cable terminal connections, colour coding and tagging correct	By Contractor.	WC	W/R	
C07-E2	Cabling done neatly and cable entries properly sealed	By Contractor.	WC	W/R	
C07-E3	Compartment labels as per requirement, identification & warning labels complete	By Contractor.	WC	R	
C07-E4	As-built marked up copy updated and available	By Contractor.	P	R	
C07-F	Final Documentation Review	EFR 03A	P	R	

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QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C08	INSTALLATION OF LOW VOLTAGE DISTRIBUTION AND AUXILIARY PANELS				
C08-A	Installation				
C08-A1	Compliance of equipment rating and nameplate with documentation	By Contractor.	WC	W/R	
C08-A2	Panel assembled correctly, aligned and levelled	By Contractor.	WC	W/R	
C08-A3	Panel anchorage, grounding and nameplate tagging	By Contractor.	WC	W/R	
C08-A4	Panel without mechanical damages and missing hardware	By Contractor.	WC	W/R	
C08-A5	Required area and equipment clearances	By Contractor.	WC	W/R	
C08-A6	Fuses and breakers ratings verified	By Contractor.	WC	W/R	
C08-A7	Cable terminal connections, colour coding and tagging correct	By Contractor.	WC	W/R	
C08-A8	Electrical and mechanical interlocking systems operation correctness	By Contractor.	WC	W/R	
C08-A9	Filter installed correctly and ventilation openings clear	By Contractor.	WC	W/R	
C08-A10	Instruments, relays and pilot lights verified as per requirements	By Contractor.	WC	W/R	
C08-A11	Instruments, relays and pilot lights wiring connections terminated properly	By Contractor.	WC	W/R	
C08-B	Testing	EFR 03D	WC	W/R	
C08-B1	Power/Lighting Distribution Panel Functional Test	EFR 03E	WC	W/R	
C08-B2	Protective Relay / PLC I/O Assignment Report	EFR 03M	WC	W/R	
C08-B3	Protective Relay Testing Report	EFR 03N	WC	W/R	
C08-B4	Capacitors And Power Factor Controllers Test	EFR 03P	WC	W/R	
C08-B5	Neutral Grounding Resistor And Earth Fault Monitoring System Test	EFR 03Q	WC	W/R	
C08-B6	SCADA System Test	EFR 03R	WC	W/R	
C08-B7	Alarm Panel Test	EFR 03S	WC	W/R	
C08-C	Final inspection	EFR 03D	WC	W/R	
C08-C1	Cabling done neatly and cable entries properly sealed	By Contractor.	WC	W/R	
C08-C2	Compartment labels as per requirement, identification & warning labels complete	By Contractor.	WC	W/R	
C08-C3	As-built marked up copy updated and available	By Contractor.	P	R	
C08-D	Final Documentation Review	EFR 03D	P	R	

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S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C09	INSTALLATION OF BUS DUCTS				
C09-A	Prefabrication of supports				
C09-A1	Supports prefabricated	By Contractor.	WC	W/R	
C09-B	Installation of supports				
C09-B1	Supports & hangers installed properly	By Contractor.	WC	W/R	
C09-B2	Installation & layout as per approved drawings	By Contractor.	WC	W/R	
C09-B3	Cold galvanizing touch-up paint applied where required	By Contractor.	WC	W/R	
C09-C	Mechanical installation				
C09-C1	Compliance of equipment rating and nameplate with documentation	By Contractor.	WC	R	
C09-C2	Bus duct assembled and oriented correctly, aligned and levelled	By Contractor.	WC	S	
C09-C3	Bus duct anchorage, grounding and nameplate tagging	By Contractor.	WC	S	
C09-C4	Bus duct without mechanical damages and missing hardware	By Contractor.	WC	S	
C09-C5	Bus duct adequate bracing and suspension	By Contractor.	WC	S	
C09-C6	Bus duct enclosure flanges connected and bolts tightened	By Contractor.	WC	W/R	
C09-C7	No evident tension, strain or abnormal stresses	By Contractor.	WC	W/R	
C09-C8	Wall penetrations and vapour barrier installed correctly	By Contractor.	WC	W/R	
C09-C9	Bus duct enclosure space heaters connected (if any)	By Contractor.	WC	W/R	
C09-C10	Correct Installation of Silica Gel Breather (if any)	By Contractor.	WC	W/R	
C09-C11	External enclosure grounding	By Contractor.	WC	W/R	
C09-C12	Drainage hole plugs removed (if any)	By Contractor.	WC	W/R	
C09-C13	Joints insulation (if applicable)	By Contractor.	WC	W/R	
C09-D	Electrical installation				
C09-E	Testing	EFR 03J	WC	W/R	
C09-F	Final inspection	EFR 03I	WC	W/R	
C09-F1	Final visual inspection	By Contractor.	WC	W/R	
C09-F2	As-built marked up copy updated and available	By Contractor.	P	R	
C09-G	Final Documentation Review	EFR 03I	WC	W/R	
C11	INSTALLATION OF GROUNDING RESISTORS				

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S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C11-A	Installation				
C11-A1	Compliance of equipment rating and nameplate with documentation	By Contractor.	WC	R	
C11-A2	Panel assembled correctly, aligned and levelled	By Contractor.	WC	S	
C11-A3	Panel anchorage, grounding and nameplate tagging	By Contractor.	WC	S	
C11-A4	Panel without mechanical damages and missing hardware	By Contractor.	WC	S	
C11-A5	Required area and equipment clearances	By Contractor.	WC	W/R	
C11-A6	Fuses and breakers ratings verified	By Contractor.	WC	W/R	
C11-A7	Cable terminal connections, color coding and tagging correct	By Contractor.	WC	S	
C11-A8	Electrical and mechanical interlocking systems operation correctness	By Contractor.	WC	W/R	
C11-A9	Filter installed correctly and ventilation openings clear	By Contractor.	WC	W/R	
C11-A10	Instruments, relays and pilot lights verified as per requirements	By Contractor.	WC	W/R	
C11-A11	Instruments, relays and pilot lights wiring connections terminated properly	By Contractor.	WC	W/R	
C11-B	Testing	EFR 03D	WC	W/R	
C11-B1	Power/Lighting Distribution Panel Functional Test	EFR 03E	WC	W/R	
C11-B2	Protective Relay / PLC I/O Assignment Report	EFR 03M	WC	W/R	
C11-B3	Protective Relay Testing Report	EFR 03N	WC	W/R	
C11-B4	Capacitors And Power Factor Controllers Test	EFR 03P	WC	W/R	
C11-B5	Neutral Grounding Resistor And Earth Fault Monitoring System Test	EFR 03Q	WC	W/R	
C11-B6	SCADA System Test	EFR 03R	WC	W/R	
C11-B7	Alarm Panel Test	EFR 03S	WC	W/R	
C11-C	Final inspection	EFR 03D	WC	W/R	
C11-C1	Cabling done neatly and cable entries properly sealed	By Contractor.	WC	W/R	
C11-C2	Compartment labels as per requirement, identification & warning labels complete	By Contractor.	WC	W/R	
C11-C3	As-built marked up copy updated and available	By Contractor.	P	R	
C11-D	Final Documentation Review	EFR 03D	P	R	
C12	INSTALLATION OF UPS SYSTEMS				

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	CLIENT		INDIAN OIL CORPORATION LIMITED	
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QUALITY CONTROL PLAN



ELECTRICAL INSTALLATION SUBSTATION EQUIPMENT

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C12-A	Mechanical installation				
C12-A1	Compliance of equipment rating and nameplate with documentation	By Contractor.	WC	W/R	
C12-A2	UPS panels assembled correctly, aligned and leveled	By Contractor.	WC	W/R	
C12-A3	UPS panels anchorage, grounding and nameplate tagging	By Contractor.	WC	W/R	
C12-A4	UPS panels without mechanical damages and missing hardware	By Contractor.	WC	W/R	
C12-A5	Required area and equipment clearances	By Contractor.	WC	W/R	
C12-A6	Fuses and breakers ratings verified	By Contractor.	WC	W/R	
C12-A7	Cable terminal connections, colour coding and tagging correct	By Contractor.	WC	W/R	
C12-A8	Electrical and mechanical interlocking systems operation correctness	By Contractor.	WC	W/R	
C12-A9	Filter installed correctly and ventilation openings clear	By Contractor.	WC	W/R	
C12-A10	Fans operation check	By Contractor.	WC	W/R	
C12-A11	Compliance of equipment rating and nameplate with documentation	By Contractor.	WC	W/R	
C12-B	Electrical installation				
C12-B1	Insulation test and bolted connection resistance	By Contractor.	WC	W/R	
C12-C	Final inspection	EFR 04A	WC	W/R	
C12-C1	Cabling done neatly and cable entries properly sealed	By Contractor.	WC	W/R	
C12-C2	Compartment labels as per requirement, identification & warning labels complete	By Contractor.	WC	W/R	
C12-C3	As-built marked up copy updated and available	By Contractor.	P	R	
C12-D	Final Documentation Review	EFR 04A	P	R	
C13	INSTALLATION OF DC CHARGERS				
C13-A	Mechanical installation				
C13-A1	Compliance of equipment rating and nameplate with documentation	By Contractor.	WC	W/R	
C13-A2	DC System assembled correctly, aligned and levelled	By Contractor.	WC	W/R	
C13-A3	DC System anchorage, grounding and nameplate tagging	By Contractor.	WC	W/R	
C13-A4	DC System without mechanical damages and missing hardware	By Contractor.	WC	W/R	
C13-A5	Required area and equipment clearances	By Contractor.	WC	W/R	
C13-A6	Fuses and breakers ratings verified	By Contractor.	WC	W/R	

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QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C13-A7	Cable terminal connections, colour coding and tagging correct	By Contractor.	WC	W/R	
C13-A8	Electrical and mechanical interlocking systems operation correctness	By Contractor.	WC	W/R	
C13-A9	Filter installed correctly and ventilation openings clear	By Contractor.	WC	W/R	
C13-A10	Fans operation check	By Contractor.	WC	W/R	
C13-B	Electrical installation				
C13-B1	Insulation test and bolted connection resistance	By Contractor.	WC	W/R	
C13-C	Testing	EFR 04C	WC	W/R	
C13-C1	Functional test, distribution board	EFR 04E	WC	W/R	
C13-D	Final inspection	EFR 04C	WC	W/R	
C13-D1	Cabling done neatly and cable entries properly sealed	By Contractor.	WC	W/R	
C13-D2	Compartment labels as per requirement, identification & warning labels complete	By Contractor.	WC	W/R	
C13-D3	As-built marked up copy updated and available	By Contractor.	P	R	
C13-E	Final Documentation Review	EFR 04C	P	R	
C14	INSTALLATION OF BATTERIES				
C14-A	Rack and batteries installation				
C14-A1	Compliance of equipment rating and nameplate with documentation	By Contractor.	WC	W/R	
C14-A2	Battery rack assembled correctly and aligned	By Contractor.	WC	W/R	
C14-A3	Battery rack anchorage, grounding and nameplate tagging	By Contractor.	WC	W/R	
C14-A4	Battery rack without evidence of damage, corrosion or coating defects	By Contractor.	WC	W/R	
C14-A5	Batteries without mechanical damages	By Contractor.	WC	W/R	
C14-A6	Batteries secured and cleaned	By Contractor.	WC	W/R	
C14-A7	Batteries positioning, orientation and numbering correct	By Contractor.	WC	W/R	
C14-A8	Cable terminal connections, colour coding and tagging correct	By Contractor.	WC	W/R	
C14-B	Battery connection and filling				
C14-B1	Corroded / oxidized intercell or terminal connections cleaned	By Contractor.	WC	W/R	
C14-B2	Corrosion inhibiting grease applied on intercell and terminal connections	By Contractor.	WC	W/R	

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S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C14-B3	Electrolyte correctly mixed and filled up to the required level (Wet cells only)	By Contractor.	WC	W/R	
C14-B4	Check of excessive cover/jar distortion (Valve regulated cells only)	By Contractor.	WC	W/R	
C14-B5	Absence of cracks and leakages	By Contractor.	WC	W/R	
C14-B6	Battery connection	By Contractor.	WC	W/R	
C14-B7	Polarity interconnection correct	By Contractor.	WC	W/R	
C14-B8	Completeness of accessories (intercell connection caps, etc.)	By Contractor.	WC	W/R	
C14-C	Final inspection	EFR 04F	P	R	
C14-C1	Assembly and installation complete	By Contractor.	WC	W/R	
C14-C2	As-built marked up copy updated and available	By Contractor.	P	R	
C14-D	Final Documentation Review	EFR 04F	P	R	
C15	INSTALLATION OF VARIABLE FREQUENCY DRIVES				
C15-A	Mechanical installation				
C15-A1	Compliance of equipment rating and nameplate with documentation	By Contractor.	WC	W/R	
C15-A2	VFD assembled correctly, aligned and levelled	By Contractor.	WC	W/R	
C15-A3	VFD anchorage, grounding and nameplate tag	By Contractor.	WC	W/R	
C15-A4	VFD without mech. damage & missing hardware	By Contractor.	WC	W/R	
C15-A5	Required area and equipment clearances	By Contractor.	WC	W/R	
C15-A6	Fuses and breakers ratings verified	By Contractor.	WC	W/R	
C15-A7	Cable terminal connections, colour coding and tagging correct	By Contractor.	WC	W/R	
C15-A8	Electrical and mechanical interlocking systems operation correctness	By Contractor.	WC	W/R	
C15-A9	Filter installed correctly and ventilation openings clear	By Contractor.	WC	W/R	
C15-A10	Fans operation check	By Contractor.	WC	W/R	
C15-B	Electrical installation				
C15-B1	Insulation test and bolted connection resistance	By Contractor.	WC	W/R	
C15-C	Final inspection	EFR 04H	WC	W/R	
C15-C1	Assembly and installation complete	By Contractor.	WC	W/R	
C15-C2	As-built marked up copy updated and available	By Contractor.	WC	W/R	
C15-D	Final Documentation Review	EFR 04H	P	R	

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QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C16	INSTALLATION OF ELECTRICAL CONTROL SYSTEM				
C16-A	Installation				
C16-A1	Compliance of equipment rating and nameplate with documentation	By Contractor.	WC	W/R	
C16-A2	Panel assembled correctly, aligned and levelled	By Contractor.	WC	W/R	
C16-A3	Panel anchorage, grounding and nameplate tagging	By Contractor.	WC	W/R	
C16-A4	Panel without mechanical damages and missing hardware	By Contractor.	WC	W/R	
C16-A5	Required area and equipment clearances	By Contractor.	WC	W/R	
C16-A6	Fuses and breakers ratings verified	By Contractor.	WC	W/R	
C16-A7	Cable terminal connections, colour coding and tagging correct	By Contractor.	WC	W/R	
C16-A8	Filter installed correctly and ventilation openings clear	By Contractor.	WC	W/R	
C16-A9	Instrument, relays and pilot lights verified as per requirements	By Contractor.	WC	W/R	
C18-A10	Panel switches properly assembled and connected	By Contractor.	WC	W/R	
C16-B	Testing	EFR 03R & EFR 04I	WC	W/R	
C16-B1	SCADA System Test	EFR 03R & EFR 04I	WC	W/R	
C16-C	Final inspection	EFR 03R & EFR 04I	WC	W/R	
C16-C1	Cabling done neatly and cable entries properly sealed	By Contractor.	WC	W/R	
C16-C2	Compartment labels as per requirement, identification & warning labels complete	By Contractor.	WC	W/R	
C16-C3	As-built marked up copy updated and available	By Contractor.	P	R	
C16-D	Final Documentation Review	By Contractor.	P	R	
C17	INSTALLATION OF LOAD BANK (If any)				
C17-A	Installation				
C17-A1	Compliance of equipment rating and nameplate with documentation	By Contractor.	WC	W/R	
C17-A2	Panel / equipment assembled correctly, aligned and levelled	By Contractor.	WC	W/R	
C17-A3	Panel / equipment anchorage, grounding and nameplate tagging	By Contractor.	WC	W/R	
C17-A4	Panel / equipment without mechanical damages and missing hardware	By Contractor.	WC	W/R	
C17-A5	Required area and equipment clearances	By Contractor.	WC	W/R	

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QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C17-A6	Cable terminal connections, color coding and tagging correct	By Contractor.	WC	W/R	
C17-A7	Electrical and mechanical interlocking systems operation correctness	By Contractor.	WC	W/R	
C17-A8	Equipment and ventilation fan correctly assembled	By Contractor.	WC	W/R	
C17-A9	Instruments, relays and pilot lights verified as per requirements	By Contractor.	WC	W/R	
C17-A10	Instruments, relays and pilot lights wiring connections terminated properly	By Contractor.	WC	W/R	
C17-A11	Nameplate check	By Contractor.	WC	W/R	
C17-A12	Connection of primary and secondary cables	By Contractor.	WC	W/R	
C17-A13	Connection of auxiliary cables	By Contractor.	WC	W/R	
C17-A14	Bolted connections resistance measurement	By Contractor.	WC	W/R	
C17-A15	Surrounding area cleared	By Contractor.	WC	W/R	
C17-B	Testing	EFR 04J	WC	W/R	
C17-B1	Resistance of Load Bank and Continuity & Insulation Tests	By Contractor.	WC	W/R	
C17-C	Final inspection	EFR 04J	WC	W/R	
C17-C1	Cabling done neatly and cable entries properly sealed	By Contractor.	WC	W/R	
C17-C2	Compartment labels as per requirement, identification & warning labels complete	By Contractor.	WC	W/R	
C17-C3	As-built marked up copy updated and available	N.A.	P	R	
C17-D	Final Documentation Review	EFR 04J	P	R	
C18	INSTALLATION OF ELECTRICAL LOAD SHEDDING (If any)				
C18-A	Installation				
C18-A1	Compliance of equipment rating and nameplate with documentation	By Contractor.	WC	W/R	
C18-A2	Panel assembled correctly, aligned and levelled	By Contractor.	WC	W/R	
C18-A3	Panel anchorage, grounding and nameplate tagging	By Contractor.	WC	W/R	
C18-A4	Panel without mechanical damages and missing hardware	By Contractor.	WC	W/R	
C18-A5	Required area and equipment clearances	By Contractor.	WC	W/R	
C18-A6	Fuses and breakers ratings verified	By Contractor.	WC	W/R	
C18-A7	Cable terminal connections, color coding and tagging correct	By Contractor.	WC	W/R	
C18-A8	Filter installed correctly and ventilation openings clear	By Contractor.	WC	W/R	
C18-A9	Devices and pilot lights wiring connections terminated properly	By Contractor.	WC	W/R	

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ELECTRICAL INSTALLATION SUBSTATION EQUIPMENT

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C18-A10	Panel switches properly assembled and connected	By Contractor.	WC	W/R	
C18-B	Testing	EFR 04K	WC	W/R	
C18-B1	Capacitors And Power Factor Controllers Test	EFR 03P	WC	W/R	
C18-C	Final inspection	EFR 04K	WC	W/R	
C18-C1	Cabling done neatly and cable entries properly sealed	By Contractor.	WC	W/R	
C18-C2	Compartment labels as per requirement, identification & warning labels complete	By Contractor.	WC	W/R	
C18-C3	As-built marked up copy updated and available	By Contractor.	P	R	
C18-D	Final Documentation Review	EFR 04K	P	R	



NOTES:

- (1) A copy of the document will be delivered to Owner for information.



GENERAL NOTES

- THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THE JOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN- CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.
- CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.

		PROJECT:			
		OWNER:			
QUALITY CONTROL FORM EFR 02A		PROJ. No.:	QCF REV.	SH. 2 OF 3	
TRANSFORMERS AND REACTORS MECHANICAL INSTALL. / ELECTRICAL INSTALL. / SUMMARY REPORT		CONTRACTOR:			EFR 02A N° ____
INSPECTIONS (Ref. to QCP 1620.01)		N.A.	ACC.	REPORT / REFERENCE	INSPECTOR SIGNATURE & DATE
					CONTRACTOR TECHNIP OWNER
C - Electrical installation					
C1.	Bushings cleaned and ready for cable / bus duct connection	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	Ensure proper earthing connections and measure earthing resistance.	<input type="checkbox"/>	<input type="checkbox"/>		
C3.	Surge arresters installed (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>		
C4.	Correct operation of fans and oil pumps	<input type="checkbox"/>	<input type="checkbox"/>		
C5.	Correct operation of star point earthing switch (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>		
C6.	Correct operation of Buchholz relay alarm and trip circuits	<input type="checkbox"/>	<input type="checkbox"/>		
C7.	Correct operation of oil level gauge alarm circuits	<input type="checkbox"/>	<input type="checkbox"/>		
C8.	Correct operation of winding and oil temp. detector alarm and trip circuits	<input type="checkbox"/>	<input type="checkbox"/>		
C9.	Correct operation of pressure devices trip circuits	<input type="checkbox"/>	<input type="checkbox"/>		
C10.	Insulation test for low voltage auxiliary circuits	<input type="checkbox"/>	<input type="checkbox"/>		
C11.	Protective devices settings	<input type="checkbox"/>	<input type="checkbox"/>		
INSULATION TEST (MEGGER) FOR LOW VOLTAGE AUXILIARY CIRCUITS (*)					
Megger manuf.:		Type:	Calibration date:	Recalibration date:	
Time (hh/mm):		Amb. temperature:	<input type="checkbox"/> °C <input type="checkbox"/> °F	Humidity:	%
Auxiliary circuits		Test performed at ____ V DC for ____ min		Value	Pass Fail
		Acceptance criteria: I. R. > ____ MΩ		MΩ	<input type="checkbox"/> <input type="checkbox"/>
PROTECTIVE DEVICES SETTINGS (*)					
Winding temperature device settings		Alarm	Required °C	Found °C	Left °C
		Trip	Required °C	Found °C	Left °C
Oil temperature device settings		Alarm	Required °C	Found °C	Left °C
		Trip	Required °C	Found °C	Left °C
D - Testing					
D1.	Winding resistance measurement	<input type="checkbox"/>	<input type="checkbox"/>	EFR 02C (**)	
D2.	Insulation test (megger)	<input type="checkbox"/>	<input type="checkbox"/>	EFR 02C (**)	
D3.	Overvoltage test	<input type="checkbox"/>	<input type="checkbox"/>	EFR 02C (**)	
D4.	Vector group test	<input type="checkbox"/>	<input type="checkbox"/>	EFR 02D (**)	
D5.	Dielectric absorption and polarization index test	<input type="checkbox"/>	<input type="checkbox"/>	EFR 02E (**)	
D6.	Power factor test	<input type="checkbox"/>	<input type="checkbox"/>	EFR 02E (**)	
D7.	Turns ratio test	<input type="checkbox"/>	<input type="checkbox"/>	EFR 02F (**)	
D8.	On load tap changer tests	<input type="checkbox"/>	<input type="checkbox"/>	EFR 02G (**)	
D9.	Oil analysis	<input type="checkbox"/>	<input type="checkbox"/>	EFR 02H (**)	
(*) The relevant data shall be indicated on remarks rows					
(**) THE QC REPORTS N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES :					
EFR 02C N° ____ EFR 02D N° ____ EFR 02E N° ____ EFR 02F N° ____ EFR 02G N° ____ EFR 02H N° ____					
REMARKS :					

 		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 02C		PROJ. No.:	QCF REV.	SH. 1 OF 1
TRANSFORMERS AND REACTORS WINDING RESISTANCE AND INSULATION TEST		CONTRACTOR:		EFR 02C N° _____
GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
<input type="checkbox"/> Transformer <input type="checkbox"/> Reactor	Tag:	Manufacturer:		Serial no.:
Rated kVA:	Rated $V_{cc}\%$:	Primary kV:		Secondary kV:
WINDING RESISTANCE				
Tester manuf.:		Type:		Calibration date: Recalibration date:
Time (hh/mm):	Amb. temperature:	<input type="checkbox"/> °C <input type="checkbox"/> °F	Humidity:	%
Primary (HV) side			Secondary (LV) side	
Phases	L1 to _____	L2 to _____	L3 to _____	L1 to _____ L2 to _____ L3 to _____
Value	mΩ	mΩ	mΩ	mΩ mΩ mΩ
Acceptance criteria:		Acceptable		<input type="checkbox"/> Yes <input type="checkbox"/> No
INSULATION TEST (MEGGER)				
Megger manuf.:		Type:		Calibration date: Recalibration date:
Time (hh/mm):	Amb. temperature:	<input type="checkbox"/> °C <input type="checkbox"/> °F	Humidity:	%
Primary (HV) to ground		Secondary (LV) to ground		Primary (HV) to secondary (LV)
Test performed at ____ kV DC for ____ min		Test performed at ____ kV DC for ____ min		Test performed at ____ kV DC for ____ min
Value	Pass	Fail	Value	Pass
MΩ	<input type="checkbox"/>	<input type="checkbox"/>	MΩ	<input type="checkbox"/>
Acceptance criteria: I. R. > _____ MΩ		Acceptance criteria: I. R. > _____ MΩ		Acceptance criteria: I. R. > _____ MΩ
Core ground bushing (if present)		Test performed at ____ V DC for ____ min		Value
		Acceptance criteria: I. R. > _____ MΩ		Pass
				Fail
OVERVOLTAGE TEST (ONLY IF REQUIRED) Required <input type="checkbox"/> Yes <input type="checkbox"/> No				
Tester manuf.:		Type:		Calibration date: Recalibration date:
Time (hh/mm):	Amb. temperature:	<input type="checkbox"/> °C <input type="checkbox"/> °F	Humidity:	%
Primary (HV) to ground		Secondary (LV) to ground		
Test performed at ____ kV <input type="checkbox"/> AC <input type="checkbox"/> DC for ____ min		Test performed at ____ kV <input type="checkbox"/> AC <input type="checkbox"/> DC for ____ min		
Leakage current	Pass	Fail	Leakage current	Pass
μA	<input type="checkbox"/>	<input type="checkbox"/>	μA	<input type="checkbox"/>
Acceptance criteria: $I \leq$ _____ μA		Acceptance criteria: $I \leq$ _____ μA		
REMARKS :				
INSPECTORS	CONTRACTOR	TECHNIP	OWNER	
NAME				
SIGNATURE				
DATE				

		PROJECT:																		
		OWNER:																		
QUALITY CONTROL FORM EFR 02D		PROJ. No.:	QCF REV.	SH. 1 OF 1																
TRANSFORMERS AND REACTORS TRANSFORMER VECTOR GROUP TEST		CONTRACTOR:		EFR 02D N° _____																
GENERAL DATA																				
Location / area:		System / subsystem:		Date (dd/mm/yy):																
Transformer tag:		Manufacturer:		Serial no.:																
Rated kVA:	Rated $V_{cc}\%$:	Primary kV:	Secondary kV:																	
VECTOR GROUP TEST																				
Primary phases U, V, W		Secondary phases u, v, w																		
Primary voltage, line to line	kV	Primary voltage, line to neutral	kV																	
Secondary voltage, line to line	kV	Secondary voltage, line to neutral	kV																	
Voltage ratio		Testing voltage (primary)	V																	
1 – Connect phase U with phase u		2 – Energize primary winding (U, V, W) with low voltage, 3-phase power supply																		
3 – Measure voltages: between V and v, W and w, V and w, V and v																				
V to v	Volts	W to w	Volts	V to w Volts W to v Volts																
VECTOR DIAGRAM																				
VECTOR COMPARISON																				
Vw	<input type="checkbox"/> > <input type="checkbox"/> < <input type="checkbox"/> =	Ww	Vw	<input type="checkbox"/> > <input type="checkbox"/> < <input type="checkbox"/> =																
UV	<input type="checkbox"/> > <input type="checkbox"/> < <input type="checkbox"/> =	Vv	Vw	<input type="checkbox"/> > <input type="checkbox"/> < <input type="checkbox"/> =																
Required group	Found group	Acceptable	<input type="checkbox"/> Yes <input type="checkbox"/> No																	
REMARKS:																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 25%;">INSPECTORS</th> <th style="width: 25%;">CONTRACTOR</th> <th style="width: 25%;">TECHNIP</th> <th style="width: 25%;">OWNER</th> </tr> <tr> <td>NAME</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SIGNATURE</td> <td></td> <td></td> <td></td> </tr> <tr> <td>DATE</td> <td></td> <td></td> <td></td> </tr> </table>					INSPECTORS	CONTRACTOR	TECHNIP	OWNER	NAME				SIGNATURE				DATE			
INSPECTORS	CONTRACTOR	TECHNIP	OWNER																	
NAME																				
SIGNATURE																				
DATE																				

 		PROJECT:	
		OWNER:	
QUALITY CONTROL FORM EFR 02E		PROJ. No.:	QCF REV. SH. 1 OF 1
TRANSFORMERS AND REACTORS DIELECTRIC TESTS		CONTRACTOR:	EFR 02E N° _____

GENERAL DATA						
Location / area:		System / subsystem:		Date (dd/mm/yy):		
<input type="checkbox"/> Transformer	<input type="checkbox"/> Reactor	Tag:	Manufacturer:	Serial no.:		
Rated kVA:		Rated V _{cc} %:	Primary kV:	Secondary kV:		

DIELECTRIC ABSORPTION (D.A.) AND POLARIZATION INDEX (P.I.) TEST						
Tester manuf.:		Type:	Calibration date:	Recalibration date:		
Time (hh/mm):		Amb. temperature:	<input type="checkbox"/> °C <input type="checkbox"/> °F	Humidity:	%	
	Primary (HV) side			Secondary (LV) side		
	Test performed at _____ kV DC			Test performed at _____ kV DC		
Time	L1 to GND	L2 to GND	L3 to GND	L1 to GND	L2 to GND	L3 to GND
30 "	MΩ	MΩ	MΩ	MΩ	MΩ	MΩ
1 '	MΩ	MΩ	MΩ	MΩ	MΩ	MΩ
10 '	MΩ	MΩ	MΩ	MΩ	MΩ	MΩ
D.A. = 1' / 30 "						
P. I. = 10' / 1'						
Acceptance criteria: D. A. > _____				Acceptable	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Acceptance criteria: P. I. > _____				Acceptable	<input type="checkbox"/> Yes <input type="checkbox"/> No	

POWER FACTOR TEST													
Tester manuf.:		Type:	Calibration date:	Recalibration date:									
Time (hh/mm):		Amb. temperature:	<input type="checkbox"/> °C <input type="checkbox"/> °F	Humidity:	%								
Test performed at _____ V AC													
HV L1 to ground		HV L2 to ground		HV L3 to ground		LV L1 to ground		LV L2 to ground		LV L3 to ground		HV to LV	
mA		mA		mA		mA		mA		mA		mA	
Loss (W)		Loss (W)		Loss (W)		Loss (W)		Loss (W)		Loss (W)		Loss (W)	
% PF		% PF		% PF		% PF		% PF		% PF		% PF	
CH (nF)		CH (nF)		CH (nF)		CL (nF)		CL (nF)		CL (nF)		CHL (nF)	
CH = Capacitance of H winding to ground CL = Capacitance of L winding to ground CHL = Capacitance between H and L windings													
Acceptance criteria: % PF ≤ _____				<input type="checkbox"/> when corrected to _____ °C	Acceptable	<input type="checkbox"/> Yes <input type="checkbox"/> No							



REMARKS :													



INSPECTORS	CONTRACTOR	TECHNIP	OWNER
NAME			
SIGNATURE			
DATE			

		PROJECT:										
		OWNER:										
QUALITY CONTROL FORM EFR 02F		PROJ. No.:	QCF REV.	SH. 1 OF 1								
TRANSFORMERS AND REACTORS TRANSFORMERS TURNS RATIO TEST		CONTRACTOR:		EFR 02F N° _____								
GENERAL DATA												
Location / area:		System / subsystem:		Date (dd/mm/yy):								
Transformer tag:		Manufacturer:		Serial no.:								
Rated kVA:		Rated V _{cc} %:		Primary kV: Secondary kV:								
URNS RATIO TEST												
Tester manuf.:		Type:		Calibration date: Recalibration date:								
Range:		kV AC	Frequency:	Hz Test voltage: V AC								
PHASE <input type="checkbox"/> L1 <input type="checkbox"/> U <input type="checkbox"/> R												
Tap		Voltages		Calculated Ratio	Primary V		Secondary V		Measured ratio		Primary I	
Prog	%	Primary	Secondary		V	Angle	V	Angle	Absolute	%	mA	Angl
1												
2												
3												
4												
5												
6												
7												
8												
9												
PHASE <input type="checkbox"/> L2 <input type="checkbox"/> V <input type="checkbox"/> Y												
Tap		Voltages		Calculated Ratio	Primary V		Secondary V		Measured ratio		Primary I	
Prog	%	Primary	Secondary		V	Angle	V	Angle	Absolute	%	mA	Angl
1												
2												
3												
4												
5												
6												
7												
8												
9												
PHASE <input type="checkbox"/> L3 <input type="checkbox"/> W <input type="checkbox"/> B												
Tap		Voltages		Calculated Ratio	Primary V		Secondary V		Measured ratio		Primary I	
Prog	%	Primary	Secondary		V	Angle	V	Angle	Absolute	%	mA	Angl
1												
2												
3												
4												
5												
6												
7												
8												
9												
REMARKS :												
INSPECTORS		CONTRACTOR		TECHNIP		OWNER						
NAME												
SIGNATURE												
DATE												

TechnipFMC IndianOil		PROJECT:				
		OWNER:				
QUALITY CONTROL FORM EFR 02G		PROJ. No.:	QCF REV.	SH. 1 OF 1		
TRANSFORMERS AND REACTORS TRANSFORMER ON LOAD / OFF LOAD TAP CHANGER TESTS		CONTRACTOR:		EFR 02G N° ____		
GENERAL DATA						
Location / area:		System / subsystem:		Date (dd/mm/yy):		
Associated transformer tag:		OLTC Manufacturer:		Serial no.:		
Tapping range: ± _____ %		Step %: _____		No. of steps: _____		
MAIN SETTINGS						
	Set value		Actual value		Acceptable	
Time delay - Raise	s		VDC		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Time delay - Lower	s		VDC		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Voltage level	V		VDC		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Bandwidth	%		VDC		<input type="checkbox"/> Yes <input type="checkbox"/> No	
FUNCTIONAL TEST						
Type	Testing		Type	Testing		
Raise / Lower Off	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Position indicators	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	
Auto / Manual	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Counter	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	
Local / remote	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Operation through full range of taps	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	
Timer - Raise	s		PU	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	
Timer - Lower	s		PU	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	
URNS RATIO TEST						
Tester manuf.:		Type:	Calibration date:		Recalibration date:	
Range:		kV AC	Frequency:	Hz	Primary voltage: V AC	
Tap		Secondary Voltage	Calculated Ratio	Measured ratio		
#	No.			L1	L2	L3
1	16L					
2	15L					
3	14L					
4	13L					
5	12L					
6	11L					
7	10L					
8	9L					
9	8L					
10	7L					
11	6L					
12	5L					
13	4L					
14	3L					
15	2L					
16	1L					
17	N					
18	1R					
19	2R					
20	3R					
21	4R					
22	5R					
23	6R					
24	7R					
25	8R					
26	9R					
27	10R					
28	11R					
29	12R					
30	13R					
31	14R					
32	15R					
33	16R					
REMARKS:						
INSPECTORS		CONTRACTOR		TECHNIP		OWNER
NAME						
SIGNATURE						
DATE						

		PROJECT:			
		OWNER:			
QUALITY CONTROL FORM EFR 02H		PROJ. No.:	QCF REV.	SH. 1 OF 1	
TRANSFORMERS AND REACTORS OIL ANALYSIS		CONTRACTOR:		EFR 02H N° _____	
GENERAL DATA					
Location / area:		System / subsystem:		Date (dd/mm/yy):	
Transformer tag:		Manufacturer:		Serial no.:	
Rated kVA:		Rated V _{cc} %:		Primary kV:	Secondary kV:
OIL ANALYSIS – DIELECTRIC BREAKDOWN					
Required <input type="checkbox"/> Yes <input type="checkbox"/> No		Reference code: <input type="checkbox"/> ASTM D877 <input type="checkbox"/> IEC 60156 <input type="checkbox"/> _____			
Testing equipment:		Type:		Calibration date:	Recalibration date:
Sampling date:		Sampling time:		Testing date:	Testing time:
Testing voltage:		<input type="checkbox"/> kV AC <input type="checkbox"/> kV DC		Testing temperature:	°C
Breakdown kV	1	2	3	4	5
		Average		Acceptable	
				<input type="checkbox"/> Yes <input type="checkbox"/> No	
OIL ANALYSIS – POWER FACTOR TEST					
Required <input type="checkbox"/> Yes <input type="checkbox"/> No		Reference code: <input type="checkbox"/> ASTM D924 <input type="checkbox"/> IEC 60247 <input type="checkbox"/> _____			
Testing equipment:		Type:		Calibration date:	Recalibration date:
Sampling date:		Sampling time:		Testing date:	Testing time:
Testing voltage:		<input type="checkbox"/> kV AC		Testing temperature:	°C
Tan δ at ____ °C and at ____ Hz				Acceptable	<input type="checkbox"/> Yes <input type="checkbox"/> No
Volume resistivity at ____ °C		GΩ · m		Acceptable	<input type="checkbox"/> Yes <input type="checkbox"/> No
OIL ANALYSIS – OTHER TESTS					
Testing equipment:		Type:		Calibration date:	Recalibration date:
Sampling date:		Sampling time:		Testing date:	Testing time:
Test type	Reference code			Required	Value
Interfacial tension	<input type="checkbox"/> ASTM D971	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> Yes <input type="checkbox"/> No	mN/m
Acid number by titration method	<input type="checkbox"/> ASTM D974	<input type="checkbox"/> IEC 62021-1	<input type="checkbox"/> _____	<input type="checkbox"/> Yes <input type="checkbox"/> No	mg KOH/g
Specific gravity	<input type="checkbox"/> ASTM D1298	<input type="checkbox"/> ISO 3675	<input type="checkbox"/> _____	<input type="checkbox"/> Yes <input type="checkbox"/> No	kg/dm³
Color	<input type="checkbox"/> ASTM D1500	<input type="checkbox"/> ISO 2049	<input type="checkbox"/> _____	<input type="checkbox"/> Yes <input type="checkbox"/> No	HU
Visual examination	<input type="checkbox"/> ASTM D1524	<input type="checkbox"/> ISO 2211	<input type="checkbox"/> _____	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Sediments analysis	<input type="checkbox"/> ASTM D1698	<input type="checkbox"/> IEC 60970	<input type="checkbox"/> _____	<input type="checkbox"/> Yes <input type="checkbox"/> No	%
Moisture content	<input type="checkbox"/> ASTM D1533B	<input type="checkbox"/> IEC 60814	<input type="checkbox"/> _____	<input type="checkbox"/> Yes <input type="checkbox"/> No	mg/kg
Viscosity	<input type="checkbox"/> ASTM D445	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> Yes <input type="checkbox"/> No	mm²/s
DISSOLVED GAS ANALYSIS					
Required <input type="checkbox"/> Yes <input type="checkbox"/> No					
Testing equipment:		Type:		Calibration date:	Recalibration date:
Sampling date:		Sampling time:		Testing date:	Testing time:
Unit of measure		<input type="checkbox"/> ppm <input type="checkbox"/> _____		Testing method:	<input type="checkbox"/> ASTM D3612C <input type="checkbox"/> IEC 61181
Gases	CO ₂	C ₂ H ₄	C ₂ H ₂	C ₂ H ₆	H ₂
Results					
REMARKS :					
INSPECTORS		CONTRACTOR		TECHNIP	
NAME					
SIGNATURE					
DATE					

 		PROJECT:			
		OWNER:			
QUALITY CONTROL FORM EFR 03A		PROJ. No.:	QCF REV.	SH. 2 OF 2	
SWITCHGEAR AND CONTROLGEAR MECHANICAL INSTALL. / ELECTRICAL INSTALL. SUMMARY REPORT		CONTRACTOR:		EFR 03A N° _____	
INSPECTIONS (Ref. to QCP 1620.01)		N.A.	ACC.	REPORT / REFERENCE	INSPECTOR SIGNATURE & DATE CONTRACTOR TECHNIP OWNER
C - Electrical installation					
C1.	Filter installed correctly and ventilation openings clear	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	Fuses and breakers ratings verified	<input type="checkbox"/>	<input type="checkbox"/>		
C3.	Visual inspection on VTs and CTs	<input type="checkbox"/>	<input type="checkbox"/>		
C4.	VTs fuse / CB rating verification	<input type="checkbox"/>	<input type="checkbox"/>		
C5.	VTs and CTs drawout and grounding contacts & interlocks verification	<input type="checkbox"/>	<input type="checkbox"/>		
C6.	Instruments, relays and pilot lights verified as per requirements	<input type="checkbox"/>	<input type="checkbox"/>		
C7.	Instruments, relays and pilot lights wiring connections terminated properly	<input type="checkbox"/>	<input type="checkbox"/>		
C8.	Grounding connection satisfactory	<input type="checkbox"/>	<input type="checkbox"/>		
C9.	Terminal strips arrangement correct	<input type="checkbox"/>	<input type="checkbox"/>		
C10.	Fans operation check (where applicable)	<input type="checkbox"/>	<input type="checkbox"/>		
C11.	Completeness of accessories	<input type="checkbox"/>	<input type="checkbox"/>		
D - Testing					
D1.	Busbar Resistance, Insulation Resistance, Hi-Pot Test	<input type="checkbox"/>	<input type="checkbox"/>	EFR 03C(*)	
D2.	Automatic Transfer Switch	<input type="checkbox"/>	<input type="checkbox"/>	EFR 03F(*)	
D3.	Circuit Breakers – Electrical Tests	<input type="checkbox"/>	<input type="checkbox"/>	EFR 03G(*)	
D4.	Disconnect Switches - Electrical Tests	<input type="checkbox"/>	<input type="checkbox"/>	EFR 03H(*)	
D5.	Current Transformers	<input type="checkbox"/>	<input type="checkbox"/>	EFR 03K(*)	
D6.	Voltage Transformers	<input type="checkbox"/>	<input type="checkbox"/>	EFR 03L(*)	
D7.	Protective Relay / PLC I/O Assignment Report	<input type="checkbox"/>	<input type="checkbox"/>	EFR 03M(*)	
D8.	Protective Relay Testing Report	<input type="checkbox"/>	<input type="checkbox"/>	EFR 03N(*)	
D9.	Meters And Transducers Testing Report	<input type="checkbox"/>	<input type="checkbox"/>	EFR 03O(*)	
E - Final inspection					
E1.	Cable terminal connections, color coding and tagging correct	<input type="checkbox"/>	<input type="checkbox"/>		
E2.	Cabling done neatly and cable entries properly sealed	<input type="checkbox"/>	<input type="checkbox"/>		
E3.	Compartment labels as per requirement, identification & warning labels complete	<input type="checkbox"/>	<input type="checkbox"/>		
E4.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
(*) THE QC REPORTS N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : EFR 03C N° _____ EFR 03F N° _____ EFR 03G N° _____ EFR 03H N° _____ EFR 03K N° _____ EFR 03L N° _____ EFR 03M N° _____ EFR 03N N° _____ EFR 03O N° _____ REMARKS : 					
F- Final Doc. Review	INSPECTORS	CONTRACTOR		TECHNIP	OWNER
	NAME				
	SIGNATURE				
	DATE				

 		PROJECT:	
		OWNER:	
QUALITY CONTROL FORM EFR 03C		PROJ. No.:	QCF REV. SH. 1 OF 1
SWITCHGEAR AND CONTROLGEAR BUSBAR RESISTANCE, INSULATION RESISTANCE, HI-POT TEST		CONTRACTOR:	EFR 03C N° _____
GENERAL DATA			
Location / area:	System / subsystem:	Date (dd/mm/yy):	
Manufacturer:	Type:	Serial no.:	
Rated voltage:	Rated current:	Rated SC kA:	
Tag number:		Ref. drawings:	
BOLTS TIGHTENING			
Torque wrench manufacturer:	Type:	Calibration date:	Recalibration date:
Bolt size (M) / Tightening Torque (Nm)	M / Nm	M / Nm	M / Nm
BOLTED CONNECTION RESISTANCE / HEATERS TEST			
LR ohmmeter manuf./type:	Test current: A	Calibration date:	Recalibration date:
Contact resistance			LV heaters test (Insulation / heating)
#	Section ID	Phase L1	Phase L2
		Phase L3	Neutral
		Ground	
1		μΩ	μΩ
2		μΩ	μΩ
3		μΩ	μΩ
4		μΩ	μΩ
5		μΩ	μΩ
6		μΩ	μΩ
7		μΩ	μΩ
8		μΩ	μΩ
9		μΩ	μΩ
10		μΩ	μΩ
11		μΩ	μΩ
12		μΩ	μΩ
13		μΩ	μΩ
14		μΩ	μΩ
<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> NA			
Note: An outline drawing showing the bus duct sections identification shall be attached to this form.			
INSULATION TEST			
Megger manufacturer:	Type:	Calibration date:	Recalibration date:
Test kV	Voltage	Insulation resistance	
		Phase L1 to ground	Phase L2 to ground
		Phase L3 to ground	Neutral to ground
	<input type="checkbox"/> AC <input type="checkbox"/> DC	MΩ	MΩ
HIGH POTENTIAL TEST Required <input type="checkbox"/> Yes <input type="checkbox"/> No			
Hipot equipment manufacturer:	Type:	Calibration date:	Recalibration date:
Test kV	Voltage	Leakage currents	
		Phase L1 to ground	Phase L2 to ground
		Phase L3 to ground	Neutral to ground
	<input type="checkbox"/> AC <input type="checkbox"/> DC	μA	μA
REMARKS :			
INSPECTORS	CONTRACTOR	TECHNIP	OWNER
NAME			
SIGNATURE			
DATE			

		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 03D		PROJ. No.:	QCF REV.	SH. 1 OF 1
SWITCHGEAR AND CONTROLGEAR AUXILIARY PANEL INSTALLATION SUMMARY REPORT		CONTRACTOR:		EFR 03D N° _____
GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
Manufacturer:		Type:		Serial no.:
<input type="checkbox"/> Lighting distribution panel	<input type="checkbox"/> Power distribution panel	<input type="checkbox"/> MOV distribution panel	<input type="checkbox"/> Diesel genset control panel	
<input type="checkbox"/> Synchr. excitation panel	<input type="checkbox"/> E/I marshalling cabinet	<input type="checkbox"/> Substation alarm panel	<input type="checkbox"/> Protective relay rack	
<input type="checkbox"/> Metering equipment panel	<input type="checkbox"/> Substation control panel	<input type="checkbox"/> Substation command panel	<input type="checkbox"/> Capacitor bank	
<input type="checkbox"/> Neutral grounding resistor	<input type="checkbox"/> NGR panel	<input type="checkbox"/> SCADA system	<input type="checkbox"/> Other _____	
Rated voltage:		Rated current:		Rated SC kA:
Tag number:		Ref. drawings:		
INSPECTIONS (Ref. to QCP 1620.01)		N.A.	ACC.	REPORT / REFERENCE
				INSPECTOR SIGNATURE & DATE
				CONTRACTOR TECHNIP OWNER
A – Installation				
A1.	Compliance of equipment rating and nameplate with documentation	<input type="checkbox"/>	<input type="checkbox"/>	
A2.	Panel assembled correctly, aligned and levelled	<input type="checkbox"/>	<input type="checkbox"/>	
A3.	Panel anchorage, grounding and nameplate tagging	<input type="checkbox"/>	<input type="checkbox"/>	
A4.	Panel without mechanical damages and missing hardware	<input type="checkbox"/>	<input type="checkbox"/>	
A5.	Required area and equipment clearances	<input type="checkbox"/>	<input type="checkbox"/>	
A6.	Fuses and breakers ratings verified	<input type="checkbox"/>	<input type="checkbox"/>	
A7.	Cable terminal connections, color coding and tagging correct	<input type="checkbox"/>	<input type="checkbox"/>	
A8.	Electrical and mechanical interlocking systems operation correctness	<input type="checkbox"/>	<input type="checkbox"/>	
A9.	Filter installed correctly and ventilation openings clear	<input type="checkbox"/>	<input type="checkbox"/>	
A10.	Instruments, relays and pilot lights verified as per requirements	<input type="checkbox"/>	<input type="checkbox"/>	
A11.	Instruments, relays and pilot lights wiring connections terminated properly	<input type="checkbox"/>	<input type="checkbox"/>	
B - Testing				
B1.	Power/Lighting Distribution Panel Functional Test	<input type="checkbox"/>	<input type="checkbox"/>	EFR 03E(*) EFR 03M(*) EFR 03N(*) EFR 03P(*) EFR 03Q(*) EFR 03R(*) EFR 03S(*)
B2.	Protective Relay / PLC I/O Assignment Report	<input type="checkbox"/>	<input type="checkbox"/>	
B3.	Protective Relay Testing Report	<input type="checkbox"/>	<input type="checkbox"/>	
B4.	Capacitors and Power Factor Controllers Test	<input type="checkbox"/>	<input type="checkbox"/>	
B5.	Neutral Grounding Resistor and Earth Fault Monitoring System Test	<input type="checkbox"/>	<input type="checkbox"/>	
B6.	SCADA System Test	<input type="checkbox"/>	<input type="checkbox"/>	
B7.	Alarm Panel Test	<input type="checkbox"/>	<input type="checkbox"/>	
C - Final inspection				
C1.	Cabling done neatly and cable entries properly sealed	<input type="checkbox"/>	<input type="checkbox"/>	
C2.	Compartment labels as per requirement, identification & warning labels complete	<input type="checkbox"/>	<input type="checkbox"/>	
C3.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>	
(*) THE QC REPORTS N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : EFR 03E N° ____ EFR 03M N° ____ EFR 03N N° ____ EFR 03P N° ____ EFR 03Q N° ____ EFR 03R N° ____ EFR 03S N° ____ REMARKS :				
D- Final Doc. Review	INSPECTORS	CONTRACTOR	TECHNIP	OWNER
	NAME			
	SIGNATURE			
	DATE			

		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 03E		PROJ. No.:	QCF REV.	SH. 1 OF 1
SWITCHGEAR AND CONTROLGEAR POWER/LIGHTING DISTRIBUTION PANEL FUNCTIONAL TEST		CONTRACTOR:		EFR 03E N° ____

GENERAL DATA													
Location / area:				System / subsystem:				Date (dd/mm/yy):					
Manufacturer:				Type:				Serial no.:					
<input type="checkbox"/> Lighting distribution panel				<input type="checkbox"/> Power distribution panel				<input type="checkbox"/> Other _____					
Rated voltage:				Rated current:				Rated SC kA:					
Tag number:								Ref. drawings:					

TESTING													
Multimeter manuf:				Type:				Calibration date:				Recalibration date:	

MAIN BREAKERS OPERATION													
#	Tag	Open		Close		Continuity		Aux. contacts			Res. current		
		Pass	Fail	Pass	Fail	Pass	Fail	P	F	NA	P	F	NA
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BRANCH BREAKERS OPERATION													
#	Circuit	Open		Close		Continuity		Aux. contacts			Res. current		
		Pass	Fail	Pass	Fail	Pass	Fail	P	F	NA	P	F	NA
1.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CONTROL OPERATION											
Manual mode		Pass	<input type="checkbox"/>	Fail	<input type="checkbox"/>	Auto mode		Pass	<input type="checkbox"/>	Fail	<input type="checkbox"/>

CONTROL DEVICES OPERATION											
Selector switches		Pass	<input type="checkbox"/>	Fail	<input type="checkbox"/>	Measuring instruments		Pass	<input type="checkbox"/>	Fail	<input type="checkbox"/>
Lights		Pass	<input type="checkbox"/>	Fail	<input type="checkbox"/>			Pass	<input type="checkbox"/>	Fail	<input type="checkbox"/>

REMARKS :

INSPECTORS	CONTRACTOR	TECHNIP	OWNER
NAME			
SIGNATURE			
DATE			

		PROJECT:																																					
		OWNER:																																					
QUALITY CONTROL FORM EFR 03F		PROJ. No.:	QCF REV.	SH. 1 OF 1																																			
SWITCHGEAR AND CONTROLGEAR AUTO CHANGE OVER		CONTRACTOR:		EFR 03F N° _____																																			
GENERAL DATA																																							
Location / area:		System / subsystem:		Date (dd/mm/yy):																																			
Switchgear manufacturer:		Type:		Serial no.:																																			
Rated voltage:		Rated current:		Rated SC kA:																																			
Tag number:		Ref. drawings:																																					
TIME DELAYS																																							
Multimeter manuf./type:		Test voltage: V	Calibration date:	Recalibration date:																																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Function</th> <th colspan="2">Applicable</th> <th>Set value</th> <th>Actual value</th> <th colspan="2">Acceptable</th> </tr> </thead> <tbody> <tr> <td>Momentary loss of power override</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td>s</td> <td>s</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> </tr> <tr> <td>Transfer to backup / emergency source</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td>s</td> <td>s</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> </tr> <tr> <td>Retransfer to normal</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td>s</td> <td>s</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> </tr> <tr> <td>Diesel engine cooling down</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td>s</td> <td>s</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> </tr> </tbody> </table>					Function	Applicable		Set value	Actual value	Acceptable		Momentary loss of power override	<input type="checkbox"/> Yes	<input type="checkbox"/> No	s	s	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Transfer to backup / emergency source	<input type="checkbox"/> Yes	<input type="checkbox"/> No	s	s	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Retransfer to normal	<input type="checkbox"/> Yes	<input type="checkbox"/> No	s	s	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Diesel engine cooling down	<input type="checkbox"/> Yes	<input type="checkbox"/> No	s	s	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Function	Applicable		Set value	Actual value	Acceptable																																		
Momentary loss of power override	<input type="checkbox"/> Yes	<input type="checkbox"/> No	s	s	<input type="checkbox"/> Yes	<input type="checkbox"/> No																																	
Transfer to backup / emergency source	<input type="checkbox"/> Yes	<input type="checkbox"/> No	s	s	<input type="checkbox"/> Yes	<input type="checkbox"/> No																																	
Retransfer to normal	<input type="checkbox"/> Yes	<input type="checkbox"/> No	s	s	<input type="checkbox"/> Yes	<input type="checkbox"/> No																																	
Diesel engine cooling down	<input type="checkbox"/> Yes	<input type="checkbox"/> No	s	s	<input type="checkbox"/> Yes	<input type="checkbox"/> No																																	
UNDERVOLTAGE RELAY TEST																																							
Relay			Undervoltage		Time	Phases	Acceptable																																
Source "A"	Set voltage	Set time	Pickup	V	s		<input type="checkbox"/> Yes	<input type="checkbox"/> No																															
	V	s	Dropout	V																																			
Source "B"	Set voltage	Set time	Pickup	V	s		<input type="checkbox"/> Yes	<input type="checkbox"/> No																															
	V	s	Dropout	V																																			
FUNCTIONAL TEST																																							
Type		Testing		Type		Testing																																	
Loss of power inc. "A"		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Return of power inc. "B"		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail																																
Return of power inc. "A"		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Fault _____		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail																																
Simulate loss of power inc. "B"		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Fault _____		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail																																
SYNCHROCHECK FUNCTION TEST																																							
ΔV function (V_1 = Line, V_2 = Bus)				$\Delta \alpha$ function (α_1 = Line, α_2 = Bus)				Δf function (f_1 = Line, f_2 = Bus)																															
Set $V_1 > V_2 = V$		Set $V_1 < V_2 = V$		Set $\alpha_1 > \alpha_2 = ^\circ$		Set $\alpha_1 < \alpha_2 = ^\circ$		Set $f_1 > f_2 = \text{Hz}$		Set $f_1 < f_2 = \text{Hz}$																													
Line volts V_1	Bus volts V_2	ΔV	Synchro	Line angl α_1	Bus angl α_2	$\Delta \alpha$	Synchro	Line freq f_1	Bus freq f_2	Δf	Synchro																												
			Yes No				Yes No				Yes No																												
V	V	V	<input type="checkbox"/> <input type="checkbox"/>	$^\circ$	$^\circ$	$^\circ$	<input type="checkbox"/> <input type="checkbox"/>	Hz	Hz	Hz	<input type="checkbox"/> <input type="checkbox"/>																												
V	V	V	<input type="checkbox"/> <input type="checkbox"/>	$^\circ$	$^\circ$	$^\circ$	<input type="checkbox"/> <input type="checkbox"/>	Hz	Hz	Hz	<input type="checkbox"/> <input type="checkbox"/>																												
V	V	V	<input type="checkbox"/> <input type="checkbox"/>	$^\circ$	$^\circ$	$^\circ$	<input type="checkbox"/> <input type="checkbox"/>	Hz	Hz	Hz	<input type="checkbox"/> <input type="checkbox"/>																												
V	V	V	<input type="checkbox"/> <input type="checkbox"/>	$^\circ$	$^\circ$	$^\circ$	<input type="checkbox"/> <input type="checkbox"/>	Hz	Hz	Hz	<input type="checkbox"/> <input type="checkbox"/>																												
V	V	V	<input type="checkbox"/> <input type="checkbox"/>	$^\circ$	$^\circ$	$^\circ$	<input type="checkbox"/> <input type="checkbox"/>	Hz	Hz	Hz	<input type="checkbox"/> <input type="checkbox"/>																												
Energization checks		$V_1 > 0, V_2 = 0$ (Live Line, Dead Bus)		<input type="checkbox"/> Ok	<input type="checkbox"/> Not Ok	$V_1 > 0, V_2 > 0$ (Live Line, Live Bus)		<input type="checkbox"/> Ok	<input type="checkbox"/> Not Ok																														
		$V_1 = 0, V_2 = 0$ (Dead Line, Dead Bus)		<input type="checkbox"/> Ok	<input type="checkbox"/> Not Ok	$V_1 = 0, V_2 > 0$ (Dead Line, Live Bus)		<input type="checkbox"/> Ok	<input type="checkbox"/> Not Ok																														
REMARKS :																																							
INSPECTORS		CONTRACTOR			TECHNIP			OWNER																															
NAME																																							
SIGNATURE																																							
DATE																																							

		PROJECT:	
		OWNER:	
QUALITY CONTROL FORM EFR 03G		PROJ. No.:	QCF REV. SH. 1 OF 1
SWITCHGEAR AND CONTROLGEAR CIRCUIT BREAKERS – ELECTRICAL TESTS		CONTRACTOR:	EFR 03G N° _____

GENERAL DATA			
Location / area:	System / subsystem:	Date (dd/mm/yy):	
Switchgear manufacturer:	Type:	Serial no.:	
Rated voltage:	Rated current:	Rated SC kA:	
Tag number:		Ref. drawings:	

PRE-TEST CHECKS				
#	Check	Ok	Not Ok	Remarks
1.	Correct identification and location as per drawings	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Inspect physical and mechanical conditions	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Check of breaker size and type	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Arc dividers/shields undamaged, where supplied	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Verify trip-free and antipump function	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Oil level and dielectric strength (oil circuit breakers)	<input type="checkbox"/>	<input type="checkbox"/>	
7.	SF ₆ density (SF ₆ breakers only)	<input type="checkbox"/>	<input type="checkbox"/>	
8.	SF ₆ gas pressure alarms operation (SF ₆ breakers)	<input type="checkbox"/>	<input type="checkbox"/>	
9.	Vacuum bottle integrity (Vacuum breakers only)	<input type="checkbox"/>	<input type="checkbox"/>	

CONTACT RESISTANCE TEST						
LR ohmmeter manuf./type:		Test current:	A	Calibration date:	Recalibration date:	
Switchgear	Tag	Cubicle	Phase L1	Phase L2	Phase L3	Neutral
			μΩ	μΩ	μΩ	μΩ

INSULATION TEST (MEGGER)											
Megger manuf.:		Type:	Calibration date:			Recalibration date:					
Pole to frame				Pole to pole				Line to load			
Test performed at ___ kV DC for ___ min				Test performed at ___ kV DC for ___ min				Test performed at ___ kV DC for ___ min			
	Value	Pass	Fail		Value	Pass	Fail		Value	Pass	Fail
L1	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	L1-L2	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	L1-L1	MΩ	<input type="checkbox"/>	<input type="checkbox"/>
L2	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	L2-L3	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	L2-L2	MΩ	<input type="checkbox"/>	<input type="checkbox"/>
L3	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	L1-L3	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	L3-L3	MΩ	<input type="checkbox"/>	<input type="checkbox"/>
N	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	N-L123	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	N-N	MΩ	<input type="checkbox"/>	<input type="checkbox"/>
Acceptance criteria: I. R. > ___ MΩ				Acceptance criteria: I. R. > ___ MΩ				Acceptance criteria: I. R. > ___ MΩ			

FUNCTIONAL TEST					
Type	Testing		Type	Testing	
Electrical interlocks	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Trip	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail
Mechanical interlocks	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Test position	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail
Open	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Heater operation	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail
Close	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	Insulation test on control circuits	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail

VOLTAGE PICKUP TEST			
Shunt trip	Voltage	Range	Pickup voltage
Close coil	Voltage	Range	Pickup voltage

REMARKS :			
INSPECTORS	CONTRACTOR	TECHNIP	OWNER
NAME			
SIGNATURE			
DATE			

		PROJECT:																		
		OWNER:																		
QUALITY CONTROL FORM EFR 03H		PROJ. No.:	QCF REV.	SH. 1 OF 1																
SWITCHGEAR AND CONTROLGEAR DISCONNECT SWITCHES – ELECTRICAL TESTS		CONTRACTOR:		EFR 03H N° _____																
GENERAL DATA																				
Location / area:		System / subsystem:		Date (dd/mm/yy):																
Switchgear manufacturer:		Type:		Serial no.:																
Rated voltage:		Rated current:		Rated SC kA:																
Tag number:		Ref. drawings:																		
PRE-TEST CHECKS																				
#	Check	Ok	Not Ok	Remarks																
1.	Correct identification and location as per drawings	<input type="checkbox"/>	<input type="checkbox"/>																	
2.	Inspect physical and mechanical conditions	<input type="checkbox"/>	<input type="checkbox"/>																	
3.	Check of disconnect switch size and type	<input type="checkbox"/>	<input type="checkbox"/>																	
4.	Check of fuse size and type	<input type="checkbox"/>	<input type="checkbox"/>																	
5.	Arc dividers/shields undamaged, where supplied	<input type="checkbox"/>	<input type="checkbox"/>																	
6.	Vacuum bottle integrity (Vacuum contactors only)	<input type="checkbox"/>	<input type="checkbox"/>																	
CONTACT RESISTANCE TEST																				
LR ohmmeter manuf./type:		Test current: A	Calibration date:	Recalibration date:																
Switchgear	Tag	Cubicle	Resistances	Phase L1 to load Phase L2 to load Phase L3 to load																
			Contact resistance	μΩ μΩ μΩ																
			Fuse resistance	mΩ mΩ mΩ																
			Fuse holder resistance	mΩ mΩ mΩ																
INSULATION TEST (MEGGER)																				
Megger manuf.:		Type:	Calibration date:	Recalibration date:																
Pole to frame		Pole to pole		Line to load																
Test performed at ___ kV DC for ___ min		Test performed at ___ kV DC for ___ min		Test performed at ___ kV DC for ___ min																
	Value Pass Fail		Value Pass Fail																	
L1	MΩ <input type="checkbox"/> <input type="checkbox"/>	L1-L2	MΩ <input type="checkbox"/> <input type="checkbox"/>	L1-L1	MΩ <input type="checkbox"/> <input type="checkbox"/>															
L2	MΩ <input type="checkbox"/> <input type="checkbox"/>	L2-L3	MΩ <input type="checkbox"/> <input type="checkbox"/>	L2-L2	MΩ <input type="checkbox"/> <input type="checkbox"/>															
L3	MΩ <input type="checkbox"/> <input type="checkbox"/>	L1-L3	MΩ <input type="checkbox"/> <input type="checkbox"/>	L3-L3	MΩ <input type="checkbox"/> <input type="checkbox"/>															
Acceptance criteria: I. R. > _____ MΩ		Acceptance criteria: I. R. > _____ MΩ		Acceptance criteria: I. R. > _____ MΩ																
FUNCTIONAL TEST																				
Type	Testing		Type	Testing																
Electrical interlocks	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	Trip	<input type="checkbox"/> Pass <input type="checkbox"/> Fail																	
Mechanical interlocks	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	Test position	<input type="checkbox"/> Pass <input type="checkbox"/> Fail																	
Open	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	Heater operation	<input type="checkbox"/> Pass <input type="checkbox"/> Fail																	
Close	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	Insulation test on control circuits	<input type="checkbox"/> Pass <input type="checkbox"/> Fail																	
REMARKS :																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">INSPECTORS</td> <td style="width: 25%; text-align: center;">CONTRACTOR</td> <td style="width: 25%; text-align: center;">TECHNIP</td> <td style="width: 25%; text-align: center;">OWNER</td> </tr> <tr> <td>NAME</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SIGNATURE</td> <td></td> <td></td> <td></td> </tr> <tr> <td>DATE</td> <td></td> <td></td> <td></td> </tr> </table>					INSPECTORS	CONTRACTOR	TECHNIP	OWNER	NAME				SIGNATURE				DATE			
INSPECTORS	CONTRACTOR	TECHNIP	OWNER																	
NAME																				
SIGNATURE																				
DATE																				

		PROJECT:						
		OWNER:						
QUALITY CONTROL FORM EFR 03J		PROJ. No.:	QCF REV.	SH. 1 OF 1				
SWITCHGEAR AND CONTROLGEAR BUS DUCT - ELECTRICAL INSTALLATION AND TEST		CONTRACTOR:		EFR 03J N° _____				
GENERAL DATA								
Tag N° :								
Location / area:		System / subsystem:		Date (dd/mm/yy):				
Manufacturer:	Type:	Serial no.:	Ph: <input type="checkbox"/> 3 <input type="checkbox"/> 3+N <input type="checkbox"/> 3+N+PE					
Rated voltage: V	Rated current: A	Rated SC kA:	Length: m					
Construction <input type="checkbox"/> Segregated phase <input type="checkbox"/> Non-segregated phase		Ref. drawings:						
BOLTS TIGHTENING								
Torque wrench manufacturer:		Type:	Calibration date:	Recalibration date:				
Bolt size (M) / Tightening Torque (Nm)	M / Nm	M / Nm	M / Nm	M / Nm				
BOLTED CONNECTION RESISTANCE / HEATERS TEST								
LR ohmmeter manuf./type:		Test current: A	Calibration date:	Recalibration date:				
Contact resistance								
#	Section ID	Indoor / Outdoor	Phase L1	Phase L2	Phase L3	Neutral	Ground	LV heaters test (Insulation / heating)
1			μΩ	μΩ	μΩ	μΩ	μΩ	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> NA
2			μΩ	μΩ	μΩ	μΩ	μΩ	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> NA
3			μΩ	μΩ	μΩ	μΩ	μΩ	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> NA
4			μΩ	μΩ	μΩ	μΩ	μΩ	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> NA
5			μΩ	μΩ	μΩ	μΩ	μΩ	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> NA
6			μΩ	μΩ	μΩ	μΩ	μΩ	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> NA
7			μΩ	μΩ	μΩ	μΩ	μΩ	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> NA
8			μΩ	μΩ	μΩ	μΩ	μΩ	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> NA
9			μΩ	μΩ	μΩ	μΩ	μΩ	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> NA
10			μΩ	μΩ	μΩ	μΩ	μΩ	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> NA
11			μΩ	μΩ	μΩ	μΩ	μΩ	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> NA
12			μΩ	μΩ	μΩ	μΩ	μΩ	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> NA
13			μΩ	μΩ	μΩ	μΩ	μΩ	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> NA
14			μΩ	μΩ	μΩ	μΩ	μΩ	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> NA
Note: A key plan showing the bus duct sections identification shall be attached to this form.								
INSULATION TEST								
Megger manufacturer:		Type:	Calibration date:	Recalibration date:				
Test kV	Voltage	Insulation resistance						
		Phase L1 to Gnd	Phase L2 to Gnd	Phase L3 to Gnd	Neutral to Gnd			
	<input type="checkbox"/> AC <input type="checkbox"/> DC	MΩ	MΩ	MΩ	MΩ			
HIGH POTENTIAL TEST Required <input type="checkbox"/> Yes <input type="checkbox"/> No								
Hipot equipment manufacturer:		Type:	Calibration date:	Recalibration date:				
Test kV	Voltage	Leakage currents						
		Phase L1 to Gnd	Phase L2 to Gnd	Phase L3 to Gnd	Neutral to Gnd			
	<input type="checkbox"/> AC <input type="checkbox"/> DC	μA	μA	μA	μA			
REMARKS :								
INSPECTORS		CONTRACTOR		TECHNIP		OWNER		
NAME								
SIGNATURE								
DATE								

		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 03K		PROJ. No.:	QCF REV.	SH. 1 OF 1
SWITCHGEAR AND CONTROLGEAR CURRENT TRANSFORMERS		CONTRACTOR:		EFR 03K N° ____

GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
Switchgear:	Cubicle:	Tag:	Ref. drawing:	

CURRENT TRANSFORMER DATA								
N.	Manufacturer	Model	Serial n.	Function	Primary A	Secondary A	Accuracy class	Burden (VA)
1.								
2.								
3.								

PRE-TEST CHECKS				
#	Check	Ok	Not Ok	Remarks
1.	Mounting & location as per drawings	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Clearance between primary and secondary circuits	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Withdrawal mechanism (where applicable)	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Correctness of fuse sizes	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Tightness of electrical connections	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Short circuiting connections functionality	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Grounding connections	<input type="checkbox"/>	<input type="checkbox"/>	

CURRENT RATIO AND POLARITY CHECK											
Tester manuf.:			Type:			Calibration date:			Recalibration date:		
N.	Location	Taps	Ratio	Voltage / Current		Accuracy	Polarity check			Pass	Fail
				Applied	Measured	%	VDC	Primary	Secondary		
1.										<input type="checkbox"/>	<input type="checkbox"/>
2.										<input type="checkbox"/>	<input type="checkbox"/>
3.										<input type="checkbox"/>	<input type="checkbox"/>

INSULATION TEST (MEGGER)						SATURATION TEST				
Megger manuf.:			Type:			Frequency Hz				
Calibration date:			Recalibration date:			V mA				
Acceptance criteria: I. R. > ____ MΩ			Results							
1	Secondary to ground	MΩ	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail						
2	Secondary to ground	MΩ	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail						
3	Secondary to ground	MΩ	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail						
Notes: ____										
BURDEN TEST										
	Applied amps	Measured volts	Burden	Pass	Fail					
1	A	V	VA	<input type="checkbox"/>	<input type="checkbox"/>					
2	A	V	VA	<input type="checkbox"/>	<input type="checkbox"/>					
3	A	V	VA	<input type="checkbox"/>	<input type="checkbox"/>					
Notes: ____						V _{max}	I _{max}	V _{knee}	I _{knee}	

REMARKS:			
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INSPECTORS	CONTRACTOR	TECHNIP	OWNER
NAME			
SIGNATURE			
DATE			

		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 03L		PROJ. No.:	QCF REV.	SH. 1 OF 1
SWITCHGEAR AND CONTROLGEAR VOLTAGE TRANSFORMERS		CONTRACTOR:		EFR 03L N° ____

GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
Switchgear:	Cubicle:	Tag:	Ref. drawing:	



VOLTAGE TRANSFORMERS DATA								
N.	Manufacturer	Model	Serial n.	Function	Primary V	Secondary V	Accuracy class	Burden (VA)
1.								
2.								
3.								
4.								

PRE-TEST CHECKS				
#	Check	Ok	Not Ok	Remarks
1.	Mounting & location as per drawings	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Clearance between primary and secondary circuits	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Withdrawal mechanism (where applicable)	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Correctness of fuse sizes	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Tightness of electrical connections	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Grounding connections	<input type="checkbox"/>	<input type="checkbox"/>	

VOLTAGE RATIO AND POLARITY CHECK											
Tester manuf.:			Type:			Calibration date:			Recalibration date:		
N.	Location	Taps	Ratio	Voltage		Accuracy	Polarity check			Pass	Fail
				Applied	Measured	%	VDC	Primary	Secondary		
1.										<input type="checkbox"/>	<input type="checkbox"/>
2.										<input type="checkbox"/>	<input type="checkbox"/>
3.										<input type="checkbox"/>	<input type="checkbox"/>
4.										<input type="checkbox"/>	<input type="checkbox"/>

INSULATION TEST (MEGGER)											
Megger manuf.:			Type:			Calibration date:			Recalibration date:		
Primary (HV) to ground				Secondary (LV) to ground				Primary (HV) to secondary (LV)			
Test performed at ____ kV DC for ____ min				Test performed at ____ kV DC for ____ min				Test performed at ____ kV DC for ____ min			
Value	Pass	Fail		Value	Pass	Fail		Value	Pass	Fail	
1.	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	1.	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	1.	MΩ	<input type="checkbox"/>	<input type="checkbox"/>
2.	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	2.	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	2.	MΩ	<input type="checkbox"/>	<input type="checkbox"/>
3.	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	3.	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	3.	MΩ	<input type="checkbox"/>	<input type="checkbox"/>
4.	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	4.	MΩ	<input type="checkbox"/>	<input type="checkbox"/>	4.	MΩ	<input type="checkbox"/>	<input type="checkbox"/>
Acceptance criteria: I. R. > ____ MΩ				Acceptance criteria: I. R. > ____ MΩ				Acceptance criteria: I. R. > ____ MΩ			
REMARKS :											

INSPECTORS	CONTRACTOR	TECHNIP	OWNER
NAME			
SIGNATURE			
DATE			

 		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 03M		PROJ. No.:	QCF REV.	SH. 1 OF 1
SWITCHGEAR AND CONTROLGEAR PROTECTIVE RELAY / PLC I/O ASSIGNMENT REPORT		CONTRACTOR:		EFR 03M N° _____
GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
Switchgear:	Cubicle:	Tag:		Ref. drawing:
Rated voltage:		Associated breaker type:		Rated feeder current:
CT details:		VT details:		
Relay/PLC manufacturer:		Relay/PLC type:		Serial number:
TESTING				
Binary Inputs				Binary Outputs
BI	Assignment	Pass	Fail	BO
01		<input type="checkbox"/>	<input type="checkbox"/>	01
02		<input type="checkbox"/>	<input type="checkbox"/>	02
03		<input type="checkbox"/>	<input type="checkbox"/>	03
04		<input type="checkbox"/>	<input type="checkbox"/>	04
05		<input type="checkbox"/>	<input type="checkbox"/>	05
06		<input type="checkbox"/>	<input type="checkbox"/>	06
07		<input type="checkbox"/>	<input type="checkbox"/>	07
08		<input type="checkbox"/>	<input type="checkbox"/>	08
09		<input type="checkbox"/>	<input type="checkbox"/>	09
10		<input type="checkbox"/>	<input type="checkbox"/>	10
11		<input type="checkbox"/>	<input type="checkbox"/>	11
12		<input type="checkbox"/>	<input type="checkbox"/>	12
13		<input type="checkbox"/>	<input type="checkbox"/>	13
14		<input type="checkbox"/>	<input type="checkbox"/>	14
15		<input type="checkbox"/>	<input type="checkbox"/>	15
16		<input type="checkbox"/>	<input type="checkbox"/>	16
17		<input type="checkbox"/>	<input type="checkbox"/>	17
18		<input type="checkbox"/>	<input type="checkbox"/>	18
19		<input type="checkbox"/>	<input type="checkbox"/>	19
20		<input type="checkbox"/>	<input type="checkbox"/>	20
21		<input type="checkbox"/>	<input type="checkbox"/>	21
22		<input type="checkbox"/>	<input type="checkbox"/>	22
23		<input type="checkbox"/>	<input type="checkbox"/>	23
24		<input type="checkbox"/>	<input type="checkbox"/>	24
25		<input type="checkbox"/>	<input type="checkbox"/>	25
26		<input type="checkbox"/>	<input type="checkbox"/>	26
27		<input type="checkbox"/>	<input type="checkbox"/>	27
28		<input type="checkbox"/>	<input type="checkbox"/>	28
29		<input type="checkbox"/>	<input type="checkbox"/>	29
30		<input type="checkbox"/>	<input type="checkbox"/>	30
31		<input type="checkbox"/>	<input type="checkbox"/>	31
32		<input type="checkbox"/>	<input type="checkbox"/>	32
REMARKS :				
INSPECTORS		CONTRACTOR		TECHNIP
NAME				
SIGNATURE				
DATE				

		PROJECT:			
		OWNER:			
QUALITY CONTROL FORM EFR 03N		PROJ. No.:	QCF REV.	SH. 1 OF 1	
SWITCHGEAR AND CONTROLGEAR PROTECTIVE RELAY TESTING REPORT		CONTRACTOR:		EFR 03N N° _____	

GENERAL DATA													
Location / area:				System / subsystem:				Date (dd/mm/yy):					
Switchgear:		Cubicle:		Tag:				Ref. drawing:					
Rated voltage:				Associated breaker type:				Rated feeder current:					
CT details:								VT details:					
Relay manufacturer:				Relay type:				Serial number:					

SETTINGS AND TESTING														
Injected current <input type="checkbox"/> <input type="checkbox"/>														
N.	ANSI 37.2 code	On	Off	Primary value	Pickup	Time delay	Curve	Additional settings	Pick points				Pass	Fail
									1	Res.	2	Res.		
1.														
2.														
3.														
4.														
5.														
6.														
7.														
8.														
9.														
10.														
11.														
12.														
13.														
14.														
15.														
16.														
17.														
18.														
19.														
20.														

Sample filling														
N.	ANSI 37.2 code	On	Off	Primary value	Pickup	Time delay	Curve	Additional settings	Pick points				Pass	Fail
									1	Trip	2	Trip		
1.	67P	X		250 A	1.2 A	0.1 s	INV	Angle = 75°	1.4 A	0.2 s	1.8 A	80 ms	X	

Acceptable <input type="checkbox"/> Yes <input type="checkbox"/> No													
Note: Relay setting curves shall be attached to this form for comparison between graphic and actual (measured) values.													
REMARKS :													

INSPECTORS	CONTRACTOR	TECHNIP	OWNER
NAME			
SIGNATURE			
DATE			

		PROJECT:	
		OWNER:	
QUALITY CONTROL FORM EFR 03P		PROJ. No.:	QCF REV. SH. 1 OF 1
SWITCHGEAR AND CONTROLGEAR CAPACITORS AND POWER FACTOR CONTROLLERS TEST		CONTRACTOR:	EFR 03P N° _____

GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
Manufacturer:		Type:		Serial no.:
Rated voltage:		Rated kVAr:		Rated SC kA:
Number of steps:		Tag number:		Ref. drawings:

INSULATION TEST				
Megger manufacturer:		Type:	Calibration date:	Recalibration date:
Test kV	Voltage <input type="checkbox"/> AC <input type="checkbox"/> DC	Phase L1 to Gnd MΩ	Phase L2 to Gnd MΩ	Phase L3 to Gnd MΩ

CAPACITOR TEST								
Tester manuf.:		Type:	Calibration date:	Recalibration date:				
Combination		kVAr	Capacitance			Discharge resistor resistance		
Prog. step	Other		Phase L1	Phase L2	Phase L3	Phase L1	Phase L2	Phase L3
1			mF	mF	mF	Ω	Ω	Ω
2			mF	mF	mF	Ω	Ω	Ω
3			mF	mF	mF	Ω	Ω	Ω
1-2			mF	mF	mF	Ω	Ω	Ω
2-3			mF	mF	mF	Ω	Ω	Ω
1-3			mF	mF	mF	Ω	Ω	Ω
1-2-3			mF	mF	mF	Ω	Ω	Ω
					Test results acceptable: <input type="checkbox"/> Yes <input type="checkbox"/> No			

POWER FACTOR CONTROLLER FUNCTIONAL TEST					
Tester manuf.:		Type:	Calibration date:	Recalibration date:	
Power factor set:		Switching time delay: s	Phase-phase voltage: V	Current injected: A	
Lock time at each change of switching direction up/down: s			Controller in "auto" position <input type="checkbox"/> Yes <input type="checkbox"/> No		

Lag					Lead				
#	cos φ (lag)	Time	Output relays		#	cos φ (lead)	Time	Output relays	
			On	Off				On	Off
01		s	<input type="checkbox"/>	<input type="checkbox"/>	01		s	<input type="checkbox"/>	<input type="checkbox"/>
02		s	<input type="checkbox"/>	<input type="checkbox"/>	02		s	<input type="checkbox"/>	<input type="checkbox"/>
03		s	<input type="checkbox"/>	<input type="checkbox"/>	03		s	<input type="checkbox"/>	<input type="checkbox"/>
04		s	<input type="checkbox"/>	<input type="checkbox"/>	04		s	<input type="checkbox"/>	<input type="checkbox"/>
05		s	<input type="checkbox"/>	<input type="checkbox"/>	05		s	<input type="checkbox"/>	<input type="checkbox"/>
06		s	<input type="checkbox"/>	<input type="checkbox"/>	06		s	<input type="checkbox"/>	<input type="checkbox"/>
07		s	<input type="checkbox"/>	<input type="checkbox"/>	07		s	<input type="checkbox"/>	<input type="checkbox"/>
08		s	<input type="checkbox"/>	<input type="checkbox"/>	08		s	<input type="checkbox"/>	<input type="checkbox"/>
09		s	<input type="checkbox"/>	<input type="checkbox"/>	09		s	<input type="checkbox"/>	<input type="checkbox"/>
10		s	<input type="checkbox"/>	<input type="checkbox"/>	10		s	<input type="checkbox"/>	<input type="checkbox"/>
11		s	<input type="checkbox"/>	<input type="checkbox"/>	11		s	<input type="checkbox"/>	<input type="checkbox"/>
12		s	<input type="checkbox"/>	<input type="checkbox"/>	12		s	<input type="checkbox"/>	<input type="checkbox"/>

Manual operation check:	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	Test results acceptable:	<input type="checkbox"/> Yes <input type="checkbox"/> No
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REMARKS :			
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INSPECTORS	CONTRACTOR	TECHNIP	OWNER
NAME			
SIGNATURE			
DATE			

		PROJECT:													
		OWNER:													
QUALITY CONTROL FORM EFR 03Q		PROJ. No.:		QCF REV.	SH. 1 OF 1										
SWITCHGEAR AND CONTROLGEAR NEUTRAL GROUNDING RESISTOR AND E.F. MONITORING SYSTEM		CONTRACTOR:			EFR 03Q N° ____										
GENERAL DATA															
Location / area:		System / subsystem:		Date (dd/mm/yy):											
Manufacturer:		Type:		Serial no.:											
Rated voltage:		Rated resistance:		Rated time:											
Tag number(s):			Ref. drawings:												
RESISTOR RESISTANCE AND INSULATION TEST															
Tester manufacturer:		Type:		Calibration date:	Recalibration date:										
Megger manufacturer:		Type:		Calibration date:	Recalibration date:										
Resistance			Insulation resistance												
Rated	Ω	Measured	Ω	Test voltage: ____ kV DC	Results: MΩ										
EARTH FAULT MONITORING DEVICE INSULATION AND FUNCTIONAL TEST															
Tester manufacturer:		Type:		Calibration date:	Recalibration date:										
Megger manufacturer:		Type:		Calibration date:	Recalibration date:										
Insulation resistance				Test voltage: ____ kV DC	Results: MΩ										
N	Alarm	1 st set of values					2 nd set of values					Remote alarm signalization		Results	
		Value	Time delay	Filter	Multip.	Trip	Value	Time delay	Filter	Multip.	Trip	Ok	Not ok	Pass	Fail
1															
2															
3															
4															
5															
6															
7															
8															
Sample filling															
N.	Alarm	1 st set of values					2 nd set of values					Annunciator panel alarm		Results	
		Value	Time delay	Filter	Multip.	Trip	Value	Time delay	Filter	Multip.	Trip	Ok	Not ok	Pass	Fail
1	NER fault	50 V	-	OFF	-	√	50 V	-	OFF	-	√	√		√	
2	Gnd fault	1.0 A	0.1 s	OFF	X 1	√	3.0 A	0.1 s	OFF	X 1	√	√		√	
Acceptable <input type="checkbox"/> Yes <input type="checkbox"/> No															
REMARKS :															
INSPECTORS		CONTRACTOR			TECHNIP			OWNER							
NAME															
SIGNATURE															
DATE															

TechnipFMC IndianOil		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 04A		PROJ. No.:	QCF REV.	SH. 1 OF 1
BATTERIES, CHARGERS, UPS AND VFD SYSTEMS UPS SUMMARY REPORT		CONTRACTOR:		EFR 04A N° _____
GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
Item:	Manufacturer:	Type:	Serial no.:	
Rated kVA:	Input voltage: V Φ	Output voltage: V Φ	Frequency: Hz	
Redundant system: <input type="checkbox"/> Yes <input type="checkbox"/> No		Ref. drawings:		
INSPECTIONS (Ref. to QCP 1620.01)		N.A.	ACC.	REPORT / REFERENCE
				INSPECTOR SIGNATURE & DATE
				CONTRACTOR TECHNIP OWNER
A - Mechanical installation				
A1	Compliance of equipment rating and nameplate with documentation	<input type="checkbox"/>	<input type="checkbox"/>	
A2	UPS panels assembled correctly, aligned and leveled	<input type="checkbox"/>	<input type="checkbox"/>	
A3	UPS panels anchorage, grounding and nameplate tagging	<input type="checkbox"/>	<input type="checkbox"/>	
A4	UPS panels without mechanical damages and missing hardware	<input type="checkbox"/>	<input type="checkbox"/>	
A5	Required area and equipment clearances	<input type="checkbox"/>	<input type="checkbox"/>	
A6	Fuses and breakers ratings verified	<input type="checkbox"/>	<input type="checkbox"/>	
A7	Cable terminal connections, color coding and tagging correct	<input type="checkbox"/>	<input type="checkbox"/>	
A8	Electrical and mechanical interlocking systems operation correctness	<input type="checkbox"/>	<input type="checkbox"/>	
A9	Filter installed correctly and ventilation openings clear	<input type="checkbox"/>	<input type="checkbox"/>	
A10	Fans operation check	<input type="checkbox"/>	<input type="checkbox"/>	
A11	Compliance of equipment rating and nameplate with documentation	<input type="checkbox"/>	<input type="checkbox"/>	
B - Electrical installation				
B1	Insulation test and bolted connection resistance	<input type="checkbox"/>	<input type="checkbox"/>	EFR 04B (*)
C - Final inspection				
C1	Cabling done neatly and cable entries properly sealed	<input type="checkbox"/>	<input type="checkbox"/>	
C2	Compartment labels as per requirement, identification & warning labels complete	<input type="checkbox"/>	<input type="checkbox"/>	
C3	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>	
(*) THE QC REPORT N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : EFR 04B N° _____ REMARKS:				
D- Final Doc. Review	INSPECTORS	CONTRACTOR	TECHNIP	OWNER
	NAME			
	SIGNATURE			
	DATE			

		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 04E		PROJ. No.:	QCF REV.	SH. 1 OF 1
BATTERIES, CHARGERS, UPS AND VFD SYSTEMS DC SYSTEM DISTRIBUTION BOARD FUNCTIONAL TEST		CONTRACTOR:		EFR 04E N° ____

GENERAL DATA													
Location / area:				System / subsystem:				Date (dd/mm/yy):					
Item:		Manufacturer:		Type:		Serial no.:							
Rated kW:		Input voltage: V Φ		Output voltage: VDC		Ref. drawings.:							
Redundant system: <input type="checkbox"/> Yes <input type="checkbox"/> No				Grounding: <input type="checkbox"/> Isolated <input type="checkbox"/> Negative grounded <input type="checkbox"/> Other _____									



TESTING													
Multimeter manuf:		Type:		Calibration date:				Recalibration date:					



MAIN BREAKERS OPERATION													
#	Tag	Open		Close		Continuity		Aux. contacts			Alarm		
		Pass	Fail	Pass	Fail	Pass	Fail	P	F	NA	P	F	NA
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OUTGOING DC BREAKERS OPERATION													
#	Circuit	Open		Close		Continuity		Aux. contacts			Alarm		
		Pass	Fail	Pass	Fail	Pass	Fail	P	F	NA	P	F	NA
1.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



REMARKS :													
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INSPECTORS	CONTRACTOR	TECHNIP	OWNER
NAME			
SIGNATURE			
DATE			



 		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 04F		PROJ. No.:	QCF REV.	SH. 1 OF 1
BATTERIES, CHARGERS, UPS AND VFD SYSTEMS BATTERIES SUMMARY REPORT		CONTRACTOR:		EFR 04F N° _____
GENERAL DATA				
Tag N° :				
Location / area:		System / subsystem:		Date (dd/mm/yy):
Battery type: <input type="checkbox"/> Lead-acid wet cell type <input type="checkbox"/> Lead-acid valve regulated <input type="checkbox"/> Nickel Cadmium				
Battery bank item:		Number of elements:		Ref. drawings:
Battery manufacturer:		Battery type:		Capacity / Hours:
INSPECTIONS (Ref. to QCP 1620.01)		N.A.	ACC.	REPORT / REFERENCE
				INSPECTOR SIGNATURE & DATE
				CONTRACTOR
				TECHNIP
				OWNER
A – Rack and batteries installation				
A1	Compliance of equipment rating and nameplate with documentation	<input type="checkbox"/>	<input type="checkbox"/>	
A2	Battery rack assembled correctly and aligned	<input type="checkbox"/>	<input type="checkbox"/>	
A3	Battery rack anchorage, grounding and nameplate tagging	<input type="checkbox"/>	<input type="checkbox"/>	
A4	Battery rack without evidence of damage, corrosion or coating defects	<input type="checkbox"/>	<input type="checkbox"/>	
A5	Batteries without mechanical damages	<input type="checkbox"/>	<input type="checkbox"/>	
A6	Batteries secured and cleaned	<input type="checkbox"/>	<input type="checkbox"/>	
A7	Batteries positioning, orientation and numbering correct	<input type="checkbox"/>	<input type="checkbox"/>	
A8	Cable terminal connections, color coding and tagging correct	<input type="checkbox"/>	<input type="checkbox"/>	
B - Battery connection and filling				
B1	Corroded / oxidized intercell or terminal connections cleaned	<input type="checkbox"/>	<input type="checkbox"/>	EFR 04G(*)
B2	Corrosion inhibiting grease applied on intercell and terminal connections	<input type="checkbox"/>	<input type="checkbox"/>	
B3	Electrolyte correctly mixed and filled up to the required level (Wet cells only)	<input type="checkbox"/>	<input type="checkbox"/>	
B4	Check of excessive cover/jar distortion (Valve regulated cells only)	<input type="checkbox"/>	<input type="checkbox"/>	
B5	Absence of cracks and leakages	<input type="checkbox"/>	<input type="checkbox"/>	
B6	Battery connection	<input type="checkbox"/>	<input type="checkbox"/>	
B7	Polarity interconnection correct	<input type="checkbox"/>	<input type="checkbox"/>	
B8	Completeness of accessories (intercell connection caps, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	
C - Final inspection				
C1	Assembly and installation complete	<input type="checkbox"/>	<input type="checkbox"/>	
C2	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>	
REMARKS :				
(**) THE QC REPORT N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES: EFR 04G N° _____				
D- Final Doc. Review	INSPECTORS	CONTRACTOR	TECHNIP	OWNER
	NAME			
	SIGNATURE			
	DATE			



 		PROJECT:	
		OWNER:	
QUALITY CONTROL FORM EFR 04G		PROJ. No.:	QCF REV.
BATTERIES, CHARGERS, UPS AND VFD SYSTEMS BATTERIES CONNECTION		CONTRACTOR:	EFR 04G N° _____
GENERAL DATA			
Tag N° :			
Location / area:		System / subsystem:	
Date (dd/mm/yy):			
Battery type: <input type="checkbox"/> Lead-acid wet cell type <input type="checkbox"/> Lead-acid valve regulated <input type="checkbox"/> Nickel Cadmium			
Battery bank item:		Number of elements:	
Ref. drawings:			
Battery manufacturer:		Capacity / Hours:	
INTERCELL TORQUING			
Torque wrench manufacturer:		Type:	Calibration date:
Resistance meas. manufacturer:		Type:	Recalibration date:
Intercell conn. No.	Resistance value (μΩ)	Intercell conn. No.	Resistance value (μΩ)
1-2		30-31	
2-3		31-32	
3-4		32-33	
4-5		33-34	
5-6		34-35	
6-7		35-36	
7-8		36-37	
8-9		37-38	
9-10		38-39	
10-11		39-40	
11-12		40-41	
12-13		41-42	
13-14		42-43	
14-15		43-44	
15-16		44-45	
16-17		45-46	
17-18		46-47	
18-19		47-48	
19-20		48-49	
20-21		49-50	
21-22		50-51	
22-23		51-52	
23-24		52-53	
24-25		53-54	
25-26		54-55	
26-27		55-56	
27-28		56-57	
28-29		57-58	
29-30		58-59	
REMARKS :			
INSPECTORS		CONTRACTOR	TECHNIP
NAME			
SIGNATURE			
DATE			

		PROJECT:			
		OWNER:			
QUALITY CONTROL FORM EFR 04H		PROJ. No.:	QCF REV.	SH. 1 OF 1	
BATTERIES, CHARGERS, UPS AND VFD SYSTEMS VARIABLE FREQUENCY DRIVE SUMMARY REPORT		CONTRACTOR:		EFR 04H N° _____	
GENERAL DATA					
Tag N° :					
Location / area:		System / subsystem:		Date (dd/mm/yy):	
Manufacturer:		Type:		Serial no.:	
Rated kW:		Input voltage: V Φ		Torque <input type="checkbox"/> Constant <input type="checkbox"/> Variable	
Bypass switch: <input type="checkbox"/> Yes <input type="checkbox"/> No		Ref. drawings:			
INSPECTIONS (Ref. to QCP 1620.01)		N.A.	ACC.	REPORT / REFERENCE	
				INSPECTOR SIGNATURE & DATE	
				CONTRACTOR TECHNIP OWNER	
A - Mechanical installation					
A1.	Compliance of equipment rating and nameplate with documentation	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	VFD assembled correctly, aligned and levelled	<input type="checkbox"/>	<input type="checkbox"/>		
A3.	VFD anchorage, grounding and nameplate tag	<input type="checkbox"/>	<input type="checkbox"/>		
A4.	VFD without mech. damage & missing hardware	<input type="checkbox"/>	<input type="checkbox"/>		
A5.	Required area and equipment clearances	<input type="checkbox"/>	<input type="checkbox"/>		
A6.	Fuses and breakers ratings verified	<input type="checkbox"/>	<input type="checkbox"/>		
A7.	Cable terminal connections, color coding and tagging correct	<input type="checkbox"/>	<input type="checkbox"/>		
A8.	Electrical and mechanical interlocking systems operation correctness	<input type="checkbox"/>	<input type="checkbox"/>		
A9.	Filter installed correctly and ventilation openings clear	<input type="checkbox"/>	<input type="checkbox"/>		
A10.	Fans operation check	<input type="checkbox"/>	<input type="checkbox"/>		
B - Electrical installation					
B1.	Insulation test and bolted connection resistance	<input type="checkbox"/>	<input type="checkbox"/>		
INSULATION TEST (*)					
Megger manuf./type:		Test voltage: V	Calibration date:	Recalibration date:	
		Phase L1 to ground	Phase L2 to ground	Phase L3 to ground	
Input		M Ω	M Ω	M Ω	
Output		M Ω	M Ω	M Ω	
BOLTS TIGHTENING (*)					
Torque wrench manufacturer:		Type:	Calibration date:	Recalibration date:	
Bolt size (M) / Tightening Torque (Nm)		M / Nm	M / Nm	M / Nm	
		M / Nm	M / Nm	M / Nm	
BOLTED CONNECTION RESISTANCE (*)					
LR ohmmeter manuf./type:		Test current: A	Calibration date:	Recalibration date:	
		Phase L1	Phase L2	Phase L3	
Input		$\mu\Omega$	$\mu\Omega$	$\mu\Omega$	
Output		$\mu\Omega$	$\mu\Omega$	$\mu\Omega$	
C - Final inspection					
C1.	Assembly and installation complete	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
(*) The relevant data shall be indicated on remarks rows					
REMARKS :					
D- Final Doc. Review	INSPECTORS	CONTRACTOR		TECHNIP	
	OWNER				
	NAME				
	SIGNATURE				
	DATE				

 		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 04I		PROJ. No.:	QCF REV.	SH. 1 OF 1
ELECTRICAL CONTROL SYSTEM INSTALLATION SUMMARY REPORT		CONTRACTOR:		EFR 04I N° _____
GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
Manufacturer:		Type:		Serial no.:
<input type="checkbox"/> Lighting distribution panel	<input type="checkbox"/> Power distribution panel	<input type="checkbox"/> MOV distribution panel	<input type="checkbox"/> Diesel genset control panel	
<input type="checkbox"/> Synchr. excitation panel	<input type="checkbox"/> E/I marshalling cabinet	<input type="checkbox"/> Substation alarm panel	<input type="checkbox"/> Protective relay rack	
<input type="checkbox"/> Metering equipment panel	<input type="checkbox"/> Substation control panel	<input type="checkbox"/> Substation command panel	<input type="checkbox"/> Capacitor bank	
<input type="checkbox"/> Neutral grounding resistor	<input type="checkbox"/> NGR panel	<input type="checkbox"/> SCADA system	<input type="checkbox"/> Other _____	
Rated voltage:		Rated current:		Rated SC kA:
Tag number:		Ref. drawings:		
INSPECTIONS (Ref. to QCP 1620.01)		N.A.	ACC.	REPORT / REFERENCE
				INSPECTOR SIGNATURE & DATE
				CONTRACTOR TECHNIP OWNER
A – Installation				
A1	Compliance of equipment rating and nameplate with documentation	<input type="checkbox"/>	<input type="checkbox"/>	
A2	Panel assembled correctly, aligned and levelled	<input type="checkbox"/>	<input type="checkbox"/>	
A3	Panel anchorage, grounding and nameplate tagging	<input type="checkbox"/>	<input type="checkbox"/>	
A4	Panel without mechanical damages and missing hardware	<input type="checkbox"/>	<input type="checkbox"/>	
A5	Required area and equipment clearances	<input type="checkbox"/>	<input type="checkbox"/>	
A6	Fuses and breakers ratings verified	<input type="checkbox"/>	<input type="checkbox"/>	
A7	Cable terminal connections, color coding and tagging correct	<input type="checkbox"/>	<input type="checkbox"/>	
A8	Filter installed correctly and ventilation openings clear	<input type="checkbox"/>	<input type="checkbox"/>	
A9	Instrument, relays and pilot lights verified as per requirements	<input type="checkbox"/>	<input type="checkbox"/>	
A10	Panel switches properly assembled and connected	<input type="checkbox"/>	<input type="checkbox"/>	
B - Testing				
B1	SCADA System Test	<input type="checkbox"/>	<input type="checkbox"/>	EFR 03R(*)
C - Final inspection				
C1	Cabling done neatly and cable entries properly sealed	<input type="checkbox"/>	<input type="checkbox"/>	
C2	Compartment labels as per requirement, identification & warning labels complete	<input type="checkbox"/>	<input type="checkbox"/>	
C3	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>	
(*) THE QC REPORT N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : EFR 03R N° _____ REMARKS:				
D- Final Doc. Review	INSPECTORS	CONTRACTOR	TECHNIP	OWNER
	NAME			
	SIGNATURE			
	DATE			





 		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 04J		PROJ. No.:	QCF REV.	SH. 1 OF 1
LOAD BANK INSTALLATION SUMMARY REPORT		CONTRACTOR:		EFR 04J N° _____
GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
Manufacturer:		Type:		Serial no.:
<input type="checkbox"/> Lighting distribution panel	<input type="checkbox"/> Power distribution panel	<input type="checkbox"/> MOV distribution panel	<input type="checkbox"/> Diesel genset control panel	
<input type="checkbox"/> Synchr. excitation panel	<input type="checkbox"/> E/I marshalling cabinet	<input type="checkbox"/> Substation alarm panel	<input type="checkbox"/> Protective relay rack	
<input type="checkbox"/> Metering equipment panel	<input type="checkbox"/> Substation control panel	<input type="checkbox"/> Substation command panel	<input type="checkbox"/> Capacitor bank	
<input type="checkbox"/> Neutral grounding resistor	<input type="checkbox"/> NGR panel	<input type="checkbox"/> SCADA system	<input type="checkbox"/> Other _____	
Rated voltage:		Rated current:		Rated SC kA:
Tag number:		Ref. drawings:		
INSPECTIONS (Ref. to QCP 1620.01)		N.A.	ACC	REPORT / REFERENCE
				INSPECTOR SIGNATURE & DATE
				CONTRACTOR
				TECHNIP
				OWNER
A – Installation				
A1.	Compliance of equipment rating and nameplate with documentation	<input type="checkbox"/>	<input type="checkbox"/>	
A2.	Panel / equipment assembled correctly, aligned and levelled	<input type="checkbox"/>	<input type="checkbox"/>	
A3.	Panel / equipment anchorage, grounding and nameplate tagging	<input type="checkbox"/>	<input type="checkbox"/>	
A4.	Panel / equipment without mechanical damages and missing hardware	<input type="checkbox"/>	<input type="checkbox"/>	
A5.	Required area and equipment clearances	<input type="checkbox"/>	<input type="checkbox"/>	
A6.	Cable terminal connections, color coding and tagging correct	<input type="checkbox"/>	<input type="checkbox"/>	
A7.	Electrical and mechanical interlocking systems operation correctness	<input type="checkbox"/>	<input type="checkbox"/>	
A8.	Equipment and ventilation fan correctly assembled	<input type="checkbox"/>	<input type="checkbox"/>	
A9.	Devices and pilot lights verified as per requirements	<input type="checkbox"/>	<input type="checkbox"/>	
A10.	Instruments, relays and pilot lights wiring connections terminated properly	<input type="checkbox"/>	<input type="checkbox"/>	
A11.	Nameplate check	<input type="checkbox"/>	<input type="checkbox"/>	
A12.	Connection of primary and secondary cables	<input type="checkbox"/>	<input type="checkbox"/>	
A13.	Connection of auxiliary cables	<input type="checkbox"/>	<input type="checkbox"/>	
A14.	Bolted connections resistance measurement	<input type="checkbox"/>	<input type="checkbox"/>	
A15.	Surrounding area cleared	<input type="checkbox"/>	<input type="checkbox"/>	
B - Testing				
B1.	Resistance of Load Bank and Continuity & Insulation Tests	<input type="checkbox"/>	<input type="checkbox"/>	
C - Final inspection				
C1.	Cabling done neatly and cable entries properly sealed	<input type="checkbox"/>	<input type="checkbox"/>	
C2.	Compartment labels as per requirement, identification & warning labels complete	<input type="checkbox"/>	<input type="checkbox"/>	
C3.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>	
REMARKS :				
D- Final Doc. Review	INSPECTORS	CONTRACTOR	TECHNIP	OWNER
	NAME			
	SIGNATURE			
	DATE			

 		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 04K		PROJ. No.:	QCF REV.	SH. 1 OF 1
ELECTRICAL LOAD SHEDDING INSTALLATION SUMMARY REPORT		CONTRACTOR:		EFR 04K N° _____
GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
Manufacturer:		Type:		Serial no.:
<input type="checkbox"/> Lighting distribution panel	<input type="checkbox"/> Power distribution panel	<input type="checkbox"/> MOV distribution panel	<input type="checkbox"/> Diesel genset control panel	
<input type="checkbox"/> Synchr. excitation panel	<input type="checkbox"/> E/I marshalling cabinet	<input type="checkbox"/> Substation alarm panel	<input type="checkbox"/> Protective relay rack	
<input type="checkbox"/> Metering equipment panel	<input type="checkbox"/> Substation control panel	<input type="checkbox"/> Substation command panel	<input type="checkbox"/> Capacitor bank	
<input type="checkbox"/> Neutral grounding resistor	<input type="checkbox"/> NGR panel	<input type="checkbox"/> SCADA system	<input type="checkbox"/> Other _____	
Rated voltage:		Rated current:		Rated SC kA:
Tag number:		Ref. drawings:		
INSPECTIONS (Ref. to QCP 1620.01)		N.A.	ACC	REPORT / REFERENCE
				INSPECTOR SIGNATURE & DATE
				CONTRACTOR
				TECHNIP
				OWNER
A – Installation				
A1.	Compliance of equipment rating and nameplate with documentation	<input type="checkbox"/>	<input type="checkbox"/>	
A2.	Panel assembled correctly, aligned and levelled	<input type="checkbox"/>	<input type="checkbox"/>	
A3.	Panel anchorage, grounding and nameplate tagging	<input type="checkbox"/>	<input type="checkbox"/>	
A4.	Panel without mechanical damages and missing hardware	<input type="checkbox"/>	<input type="checkbox"/>	
A5.	Required area and equipment clearances	<input type="checkbox"/>	<input type="checkbox"/>	
A6.	Fuses and breakers ratings verified	<input type="checkbox"/>	<input type="checkbox"/>	
A7.	Cable terminal connections, colour coding and tagging correct	<input type="checkbox"/>	<input type="checkbox"/>	
A8.	Filter installed correctly and ventilation openings clear	<input type="checkbox"/>	<input type="checkbox"/>	
A9.	Devices and pilot lights verified as per requirements	<input type="checkbox"/>	<input type="checkbox"/>	
A10.	Panel switches properly assembled and connected	<input type="checkbox"/>	<input type="checkbox"/>	
B - Testing				
B1.	Capacitors And Power Factor Controllers Test	<input type="checkbox"/>	<input type="checkbox"/>	EFR 03P (*)
C - Final inspection				
C1.	Cabling done neatly and cable entries properly sealed	<input type="checkbox"/>	<input type="checkbox"/>	
C2.	Compartment labels as per requirement, identification & warning labels complete	<input type="checkbox"/>	<input type="checkbox"/>	
C3.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>	
(*) THE QC REPORT N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : EFR 03P N° _____				
REMARKS:				
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	SIGNATURE			
	DATE			

		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
		CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP- ELECTRICAL INSTALLATION POWER SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1630-001		Rev. No. 0	Page 1 of 14



<p align="center">QUALITY CONTROL PLAN</p> <p align="center">ELECTRICAL INSTALLATION</p> <p align="center">POWER SYSTEM</p>
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TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
EFR 05A	Cable Management Systems - Cable Trays and Ladders Installation Summary Report
EFR 05B	Cable Management Systems - Underground Concrete trench Conduits Installation Summary Report
EFR 05C	Cable Management Systems - Aboveground Conduits Installation Summary Report
EFR 05D	Cable Management Systems - Firestop Barrier Installation Summary Report
EFR 06A	Electrical Cables - Pre-Installation Cable Checks on Reel
EFR 06B	Electrical Cables - Directly Buried Cables Installation Summary Report
EFR 06C	Electrical Cables - Underground Concrete trench / Duct/ Conduit Cables Installation Summary Report
EFR 06D	Electrical Cables - Cables in Trays / Aboveground Conduit Install. Summary Report
EFR 06E	Electrical Cables - Low Voltage Power Cable Testing Report
EFR 06F	Electrical Cables - Control / Interconnection Cable Testing Report
EFR 06G	Electrical Cables - Extra LV Signal Cable Testing Report
EFR 06H	Electrical Cables - Medium / High Voltage Cable Testing Report
EFR 06I	Electrical Cables - Medium / High Voltage Cable High Potential Test
EFR 06J	Electrical Cables - Cable Connection Summary Report
EFR 06K	Electrical Cables - Fiber Optic Cable Testing Report
EFR 07A	Power System - Control Station Installation and Test Summary Report
EFR 07B	Power System - Power Junction Box Installation Summary Report
EFR 07C	Power System - Welding Outlet Installation and Test Summary Report
EFR 07D	Power System - Various Equipment Installation Summary Report
EFR 07E	Power System - Cable Joints Installation and Test Summary Report

						
0	19.11.2019	ISSUED FOR IMPLEMENTATION	TB	PKP / LA	LA	JMC
REV.	DATE	STATUS	WRITTEN BY	CHECKED BY	APPROVED BY	AUTHOR. BY
DOCUMENT REVISIONS						

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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP- ELECTRICAL INSTALLATION POWER SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1630-001	Rev. No. 0	Page 2 of 14

REFERENCE DOCUMENTS:

- 080557C-000-PP-805
 - 080557C-000-JSD-1600-003
 - DRAWINGS
- SITE COORDINATION & COMMUNICATION PROCEDURE.
SPECIFICATIONS FOR FIELD ELECTRICAL INSTALLATION,
TESTING, PRE-COMMISSIONING AND COMMISSIONING

LEGENDA

H	=	HOLD (RFI required - Work stop for inspection)
W	=	WITNESS (RFI required)
WC	=	100 % SUPERVISION AND EXAMINATION BY CONTRACTOR.
P	=	PREPARATION.
S	=	SURVEILLANCE (No RFI)
R	=	REVIEW OF REPORTS
N.A.	=	NOT APPLICABLE
A	=	AUTHORIZATION / APPROVAL
IFA	=	ISSUED FOR AUTHORIZATION/APPROVAL
INFO	=	FOR INFORMATION
!	=	WARNING (control of document revision status)

		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
		CLIENT	INDIAN OIL CORPORATION LIMITED		
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QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION	ACTION	NOTES
			CONTR.	OWNER (*)	
A	PRELIMINARY ACTIVITIES				
A1	CHECK OF CONTRACTOR DRAWINGS REVISION STATUS	NA	!	!	
A2	CONTRACTOR TECHNICAL SPECIFICATION AND PROCEDURE	NA	P	R/A	
A3	CONTRACTOR'S METHOD OF STATEMENT (IF REQUIRED)	NA	P	R/A	(1)
B	MATERIALS - BEFORE AND AFTER INSTALLATION				
B1	IDENTIFICATION AND PRESERVATION STATUS	NA	W/C	R	
C01	INSTALLATION OF CABLE TRAYS AND CABLE LADDERS				
C01-A	Prefabrication of supports				
C01-A1	Supports prefabricated	NA	W/C	S	
C01-B	Installation of supports				
C01-B1	Supports & hangers installed properly	NA	W/C	S	
C01-B2	Installation & layout as per approved drawings	NA	W/C	S	
C01-C	Installation of trays				
C01-C1	Clamps & fixings properly installed	NA	W/C	S	
C01-C2	Expansion joints, splice plates and fittings correctly located	NA	W/C	W/R	
C01-C3	Midspan deflection acceptable	NA	W/C	W/R	
C01-C4	Clearances from other structures and components	NA	W/C	W/R	
C01-C5	Cable tray without roughness	NA	W/C	S	
C01-D	Trays grounding				
C01-D1	Grounding installed properly	NA	W/C	W/R	
C01-E	Installation of covers				
C01-E1	Horizontal and vertical cable tray covers properly fixed, fastened and spaced	NA	W/C	W/R	
C01-F	Final inspection	EFR 05A	W/C	W/R	
C01-F1	Final visual inspection	NA	W/C	W/R	
C01-F2	As-built marked up copy updated and available	NA	P	A	
C01-F3	Cold galvanizing touch-up paint applied where required	NA	W/C	W/R	
C01-G	Final documentation review	EFR 05A	R	R	
C02	INSTALLATION OF UNDERGROUND CONDUITS / CONCRETE TRENCH				
C02-A	Route check and supports installation				
C02-A1	Trench size, location and depth	NA	W/C	W/R	
C02-A2	Correct bedding material installed	NA	W/C	W/R	
C02-A3	Supports installation	NA	W/C	R	

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S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION	ACTION	NOTES
			CONTR.	OWNER (*)	
C02-B	Conduit preparation and bending				
C02-B1	Correct type & size	NA	W/C	R	
C02-B2	Conduit bending radius	NA	W/C	W/R	
C02-B3	Internal surface smooth & free of sharp edges	NA	W/C	R	
C02-C	Laying of conduit and stub-up				
C02-C1	Stub-up location, size & fixing	NA	W/C	R	
C02-C2	Conduit installation as per approved drawings	NA	W/C	R	
C02-C3	Clearances from other buried objects	NA	W/C	W/R	
C02-C4	Bushings installation (where applicable)	NA	W/C	W/R	
C02-C5	Ends temporary sealing	NA	W/C	R	
C02-D	Identification of conduit				
C02-D1	Markers installation (where applicable)	NA	W/C	R	
C02-E	Final inspection	EFR 05B	W/C	W/R	
C02-E1	Final visual inspection	NA	W/C	W/R	
C02-E2	Sealing of spare conduits	NA	W/C	W/R	
C02-E3	As-built marked up copy updated and available	NA	P	R	
C02-E4	Cold galvanizing touch-up paint applied where required	NA	W/C	W/R	
C02-F	Final documentation review	EFR 05B	R	R	
C03	INSTALLATION OF ABOVEGROUND CONDUITS				
C03-A	Route check and supports installation				
C03-A1	Supports installation	NA	W/C	R	
C03-B	Conduit preparation and bending				
C03-B1	Correct type & size	NA	W/C	W/R	
C03-B2	Conduit bending radius	NA	W/C	W/R	
C03-B3	Internal surface smooth & free of sharp edges	NA	W/C	W/R	
C03-C	Laying of conduit				
C03-C1	Conduit installation as per approved drawings	NA	W/C	W/R	
C03-C2	Alignment and straightness	NA	W/C	W/R	
C03-C3	Clearances from other objects	NA	W/C	W/R	
C03-C4	Bodies, fittings, unions, nipples and other components installed properly	NA	W/C	W/R	
C03-C5	Bushings installation (where applicable)	NA	W/C	W/R	
C03-D	Grounding of conduit				
C03-D1	Grounding connection (when applicable)	NA	W/C	W/R	
C03-E	Final inspection	EFR 05C	W/C	W/R	
C03-E1	Final visual inspection	NA	W/C	W/R	

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			CONTR.	OWNER (*)	
C03-E2	As-built marked up copy updated and available	NA	P	R	
C03-E3	Cold galvanizing touch-up paint applied where required	NA	W/C	W/R	
C03-F	Final documentation review	EFR 05C	R	R	
C04	INSTALLATION OF CABLES, DIRECTLY BURIED				
C04-A	Stub-up, concrete base and trench				
C04-A1	Trench size, location and depth	NA	W/C	W/R	
C04-A2	Routing according to drawings	NA	W/C	W/R	
C04-A3	Interference with other buried systems	NA	W/C	W/R	
C04-A4	Correct bedding material installed	NA	W/C	W/R	
C04-A5	Stub-up location, size and fixing	NA	W/C	W/R	
C04-B	Handling of cable reel				
C04-B1	Cable reel integrity check	NA	W/C	W/R	
C04-B2	Cable tests on reel done	NA	W/C	W/R	
C04-B3	Checking proper cable drum assignment / schedule prepare to cable pulling	EFR 06A	W/C	W/R	
C04-C	Laying of cables				
C04-C1	Cable tag, Source, destination and routing verified	NA	W/C	W/R	
C04-C2	Type, voltage, size and color code verified	NA	W/C	W/R	
C04-C3	Maximum pulling force verified	NA	W/C	W/R	
C04-C4	Minimum bending radius checked	NA	W/C	W/R	
C04-C5	Burial depth and separation checked	NA	W/C	W/R	
C04-C6	Grouping (ex. trefoil formation, where applicable)	NA	W/C	W/R	
C04-C7	Phase ordering for single core power cables	NA	W/C	W/R	
C04-C8	Cable pulling done properly	NA	W/C	W/R	
C04-C9	Cable ends sealed	NA	W/C	W/R	
C04-C10	No physical damages	NA	W/C	W/R	
C04-D	Insulation and resistance test before backfilling				
C04-D1	MV / HV power cables	NA	W/C	W/R	
C04-D2	LV power cables	NA	W/C	W/R	
C04-D3	LV control cables	NA	W/C	W/R	
C04-D4	ELV signal cables	NA	W/C	W/R	
C04-E	Cable markers installation				
C04-F	Insulation and resistance test after backfilling				
C04-F1	MV / HV power cables	NA	W/C	W/R	
C04-F2	LV power cables	NA	W/C	W/R	
C04-F3	LV control cables	NA	W/C	W/R	

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S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION	ACTION	NOTES
			CONTR.	OWNER (*)	
C04-F4	ELV signal cables	NA	W/C	W/R	
C04-G	Cable way markers installation	NA	W/C	W/R	
C04-H	Final inspection	EFR 06B	W/C	W/R	
C04-H1	Final visual inspection	NA	W/C	W/R	
C04-H2	Final Cable testing reports (HV/MV/LV/Control/ELV Signal)	EFR 06I, EFR 06H, EFR 06E, EFR 06F & EFR 06G	W/C	W/R	
C04-H3	As-built marked up copy updated and available	NA	P	R	
C04-I	Final documentation review	EFR 06B	P	R	
C05	INSTALLATION OF CABLES, IN UNDERGROUND CONCRETE TRENCH / DUCT CONDUIT				
C05-A	Stub-up, concrete base and duct/conduit				
C05-A1	Duct/conduit size, location and depth	NA	W/C	W/R	
C05-A2	Routing according to drawings	NA	W/C	R	
C05-A3	Interference with other buried systems	NA	W/C	W/R	
C05-A4	Correct reinforcing material installed	NA	W/C	W/R	
C05-A5	Stub-up location, size and fixing	NA	W/C	W/R	
C05-B	Handling of cable reel				
C05-B1	Cable reel integrity check	NA	W/C	W/R	
C05-B2	Cable tests on reel done	NA	W/C	W/R	
C05-B3	Checking proper cable drum assignment / schedule prepare to cable pulling	EFR 06A	W/C	W/R	
C05-C	Duct/conduit cleaning				
C05-C1	Internal surface cleaned	EFR 06C	W/C	W/R	
C05-D	Cable pulling				
C05-D1	Source, destination and routing verified	NA	W/C	W/R	
C05-D2	Type, voltage, size and color code verified	NA	W/C	W/R	
C05-D3	Maximum pulling force verified	NA	W/C	W/R	
C05-D4	Minimum bending radius checked	NA	W/C	W/R	
C05-D5	Cable section and conduit number checked	NA	W/C	W/R	
C05-D6	Cable pulling done properly	NA	W/C	W/R	
C05-D7	Cable ends sealed	NA	W/C	W/R	
C05-D8	No physical damages	NA	W/C	W/R	
C05-E	Insulation and resistance test				
C05-E1	MV / HV power cables	NA	W/C	W/R	
C05-E2	LV power cables	NA	W/C	W/R	

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			CONTR.	OWNER (*)	
C05-E3	LV control cables	NA	W/C	W/R	
C05-E4	ELV signal cables	NA	W/C	W/R	
C05-F	Cable markers installation				
C05-G	Final inspection	EFR 06C	W/C	W/R	
C05-G1	Final Cable testing reports (HV/MV/LV/Control/ELV Signal)	EFR 06I, EFR 06H, EFR 06E, EFR 06F & EFR 06G	W/C	W/R	
C05-G2	Final visual inspection	NA	W/C	W/R	
C05-G3	As-built marked up copy updated and available	NA	P	R	
C05-H	Final documentation review	EFR 06C	P	R	
C06	INSTALLATION OF INTERCONNECTING CABLES IN CABLE TRAYS / LADDERS				
C06-A	Handling of cable reel				
C06-A1	Cable reel integrity check	NA	W/C	W/R	
C06-A2	Cable tests on reel done	NA	W/C	W/R	
C06-B	Laying of cables				
C06-B1	Type, voltage and size verified	NA	W/C	W/R	
C06-B2	Color code verified	NA	W/C	W/R	
C06-B3	Source, destination and routing verified	NA	W/C	W/R	
C06-B4	Maximum pulling force verified	NA	W/C	W/R	
C06-B5	Minimum bending radius checked	NA	W/C	W/R	
C06-B6	Cable section and tray number checked	NA	W/C	W/R	
C06-B7	Cable ends sealed	NA	W/C	W/R	
C06-B8	Cable laid properly, without crossings	NA	W/C	W/R	
C06-B9	Cable spaced properly	NA	W/C	W/R	
C06-B10	Grouping (ex. trefoil formation, where applicable)	NA	W/C	W/R	
C06-B11	Phase ordering for single core power cables	NA	W/C	W/R	
C06-B12	Cable pulling done properly	NA	W/C	W/R	
C06-B13	Cable clamped properly	NA	W/C	W/R	
C06-B14	Fixing elements and fasteners installed	NA	W/C	W/R	
C06-B15	Cable ends sealed	NA	W/C	W/R	
C06-B16	No physical damages	NA	W/C	W/R	
C06-C	Insulation and resistance test				
C06-C1	MV / HV power cables	NA	W/C	W/R	
C06-C2	LV power cables	NA	W/C	W/R	

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			CONTR.	OWNER (*)	
C06-C3	LV control cables	NA	W/C	W/R	
C06-C4	ELV signal cables	NA	W/C	W/R	
C06-D	Cable markers installation				
C06-E	Final inspection	EFR 06D	W/C	W/R	
C06-E1	Final Cable testing reports (HV/MV/LV/Control/ELV Signal)	EFR 06I, EFR 06H, EFR 06E, EFR 06F & EFR 06G	W/C	W/R	
C06-E2	Final visual inspection	NA	W/C	W/R	
C06-E3	As-built marked up copy updated and available	NA	P	R	
C06-F	Final documentation review	EFR 06D	P	R	
C07	CONNECTION OF INTERCONNECTING CABLES				
C07-A	Glanding, connection and testing				
C07-A1	Cable found undamaged	NA	W/C	W/R	
C07-A2	Splice according to manuf. instructions	NA	W/C	W/R	
C07-A3	Cable gland size correct	NA	W/C	W/R	
C07-A4	Cable gland execution verified	NA	W/C	W/R	
C07-A5	Jacket, armour and sheath tightened	NA	W/C	W/R	
C07-A6	Proper lug size and crimping	NA	W/C	W/R	
C07-A7	Wire dressing correct	NA	W/C	W/R	
C07-A8	Conductor properly tied and/or clamped	NA	W/C	W/R	
C07-A9	Wires properly identified	NA	W/C	W/R	
C07-A10	Correct terminal size and type (MV/HV cables only)	NA	W/C	W/R	
C07-A11	Required terminal accessories installed (MV/HV cables only)	NA	W/C	W/R	
C07-A12	Terminal execution in accordance with manufacturer's instructions (MV/HV cables only)	NA	W/C	W/R	
C07-A13	Cable hi-pot test performed (MV/HV cables only)	EFR 06I	W/C	W/R	
C07-A14	Cable optical tests performed (fibre optic cables only)	EFR 06K	W/C	W/R	
C07-B	Final inspection	EFR 06J	W/C	W/R	
C07-B1	Bolted connections tested on both sides	NA	W/C	W/R	
C07-C	Final documentation review	EFR 06J	P	R	
C08	INSTALLATION OF CONTROL STATIONS				
C08-A	Prefabrication of supports				
C08-A1	Installation location as per approved drawings	NA	W/C	R	
C08-B	Installation of supports				

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			CONTR.	OWNER (*)	
C08-B1	Supports installed properly	NA	W/C	R	
C08-B2	Installation & layout as per approved drawings	NA	W/C	R	
C08-C	Installation of control station				
C08-C1	Mounting & location as per drawings	NA	W/C	W/R	
C08-C2	Height, alignment and levelling	NA	W/C	W/R	
C08-C3	Maintenance accessibility	NA	W/C	W/R	
C08-C4	No interference to access ways	NA	W/C	W/R	
C08-C5	Selectors, pushbuttons and padlocks not damaged	NA	W/C	W/R	
C08-C6	Wiring checked and correctness	NA	W/C	W/R	
C08-C7	Labeling check	NA	W/C	W/R	
C08-C8	There are no unauthorized modifications	NA	W/C	W/R	
C08-C9	There are no visible unauthorized modifications	NA	W/C	W/R	
C08-C10	Bolts and cable entry devices are of the correct type	NA	W/C	W/R	
C08-C11	Bolts and cable entry devices are tightened	NA	W/C	W/R	
C08-C12	Apparatus is appropriate to area classification	NA	W/C	W/R	
C08-C13	Apparatus group and temperature class is correct	NA	W/C	W/R	
C08-C14	Apparatus circuit identification available and correct	NA	W/C	W/R	
C08-C15	Flange faces are clean and undamaged	NA	W/C	W/R	
C08-C16	Flange gap are within max values permitted	NA	W/C	W/R	
C08-C17	Enclosure gaskets condition is satisfactory	NA	W/C	W/R	
C08-C18	Enclosed-break devices undamaged	NA	W/C	W/R	
C08-C19	Hermetically sealed devices undamaged	NA	W/C	W/R	
C08-C20	Restricted breathing enclosure satisfactory	NA	W/C	W/R	
C08-C21	Enclosure clearance is sufficient	NA	W/C	W/R	
C08-C22	Breathing and draining devices satisfactory	NA	W/C	W/R	
C08-D	Final inspection	EFR 07A	W/C	W/R	
C08-D1	Selector switches operation (start/stop, ...)	NA	W/C	W/R	
C08-D2	Pushbuttons operation	NA	W/C	W/R	
C08-D3	Ammeter scale and running lights operation	NA	W/C	W/R	
C08-D4	Other components operation	NA	W/C	W/R	
C08-D5	Final visual inspection	NA	W/C	W/R	
C08-D6	As-built marked up copy updated and available	NA	P	R	
C08-D7	Cold galvanizing touch-up paint applied where required	NA	W/C	W/R	
C08-E	Final documentation review	EFR 07A	P	R	

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			CONTR.	OWNER (*)	
C09	INSTALLATION OF WELDING OUTLETS				
C09-A	Prefabrication of supports				
C09-A1	Supports prefabricated and painted	NA	W/C	W/R	
C09-A2	Cold galvanizing touch-up paint applied	NA	W/C	W/R	
C09-B	Installation of outlet				
C09-B1	Mounting & location as per drawings	NA	W/C	W/R	
C09-B2	Height, alignment and levelling	NA	W/C	W/R	
C09-B3	Maintenance accessibility	NA	W/C	W/R	
C09-B4	No interference to access ways	NA	W/C	W/R	
C09-B5	Accessories complete and spare holes plugged	NA	W/C	W/R	
C09-B6	Outlet stability	NA	W/C	W/R	
C09-B7	There are no unauthorized modifications	NA	W/C	W/R	
C09-B8	There are no visible unauthorized modifications	NA	W/C	W/R	
C09-B9	Bolts and cable entry devices are of the correct type	NA	W/C	W/R	
C09-B10	Bolts and cable entry devices are tightened	NA	W/C	W/R	
C09-B11	Apparatus is appropriate to area classification	NA	W/C	W/R	
C09-B12	Apparatus group and temperature class is correct	NA	W/C	W/R	
C09-B13	Apparatus circuit identification available and correct	NA	W/C	W/R	
C09-B14	Flange faces are clean and undamaged	NA	W/C	W/R	
C09-B15	Flange gap are within max values permitted	NA	W/C	W/R	
C09-B16	Enclosure gaskets condition is satisfactory	NA	W/C	W/R	
C09-B17	Enclosed-break devices undamaged	NA	W/C	W/R	
C09-B18	Hermetically sealed devices undamaged	NA	W/C	W/R	
C09-B19	Restricted breathing enclosure satisfactory	NA	W/C	W/R	
C09-B20	Enclosure clearance is sufficient	NA	W/C	W/R	
C09-B21	Breathing and draining devices satisfactory	NA	W/C	W/R	
C09-C	Final inspection	EFR 07C	W/C	W/R	
C09-C1	Disconnect switch operation	NA	W/C	W/R	
C09-C2	Plug insertion and interlock	NA	W/C	W/R	
C09-C3	Final visual inspection	NA	W/C	W/R	
C09-C4	As-built marked up copy updated and available	NA	P	R	
C09-D	Final documentation review	EFR 07C	P	R	
C10	INSTALLATION OF CABLE JOINTS				
C10-A	Installation of joint				

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			CONTR.	OWNER (*)	
C10-A1	Splicing and cables preparation according to manufacturer's instructions	NA	W/C	W/R	
C10-A2	Conductors connection	NA	W/C	W/R	
C10-A3	Tape application	NA	W/C	W/R	
C10-A4	Insulating sleeves application	NA	W/C	W/R	
C10-B	Joint marker plate installation	NA	W/C	W/R	
C10-B1	Joint marker plate installation (underground joints)	NA	W/C	W/R	
C10-C	Final inspection	EFR 07E	W/C	W/R	
C10-C1	Meggering	NA	W/C	W/R	
C10-C2	Cable hi-pot test performed (MV only)	NA	W/C	W/R	
C10-C3	As-built marked up copy updated and available	NA	P	R	
C10-D	Final documentation review	EFR 07E	P	R	
C11	INSTALLATION OF JUNCTION BOXES				
C11-A	Prefabrication of supports				
C11-A1	Installation location as per approved drawings	NA	W/C	R	
C11-B	Installation of supports				
C11-B1	Supports installed properly	NA	W/C	W/R	
C11-B2	Installation & layout as per approved drawings	NA	W/C	R	
C11-C	Installation of junction box				
C11-C1	Mounting & location as per drawings	NA	W/C	W/R	
C11-C2	Alignment and levelling	NA	W/C	W/R	
C11-C3	Internal wiring and terminals connected	NA	W/C	W/R	
C11-C4	Cables supported properly	NA	W/C	W/R	
C11-C5	Accessories complete and spare holes plugged	NA	W/C	W/R	
C11-C6	Nameplate and grounding connections	NA	W/C	W/R	
C11-C7	Main and auxiliary electrical connections are tight	NA	W/C	W/R	
C11-C8	There are no unauthorized modifications	NA	W/C	W/R	
C11-C9	There are no visible unauthorized modifications	NA	W/C	W/R	
C11-C10	Bolts and cable entry devices are of the correct type	NA	W/C	W/R	
C11-C11	Bolts and cable entry devices are tightened	NA	W/C	W/R	
C11-C12	Apparatus is appropriate to area classification	NA	W/C	W/R	
C11-C13	Apparatus group and temperature class is correct	NA	W/C	W/R	
C11-C14	Apparatus circuit identification available and correct	NA	W/C	W/R	
C11-C15	Flange faces are clean and undamaged	NA	W/C	W/R	

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		CLIENT	INDIAN OIL CORPORATION LIMITED		
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QUALITY CONTROL PLAN



ELECTRICAL INSTALLATION POWER SYSTEM

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION	ACTION	NOTES
			CONTR.	OWNER (*)	
C11-C16	Flange gap are within max values permitted	NA	W/C	W/R	
C11-C17	Enclosure gaskets condition is satisfactory	NA	W/C	W/R	
C11-C18	Enclosed-break devices undamaged	NA	W/C	W/R	
C11-C19	Hermetically sealed devices undamaged	NA	W/C	W/R	
C11-C20	Restricted breathing enclosure satisfactory	NA	W/C	W/R	
C11-C21	Enclosure clearance is sufficient	NA	W/C	W/R	
C11-C22	Breathing and draining devices satisfactory	NA	W/C	W/R	
C11-D	Final inspection	EFR 07B	W/C	W/R	
C11-D1	Final visual inspection	NA	W/C	W/R	
C11-D2	As-built marked up copy updated and available	NA	P	R	
C11-D3	Cold galvanizing touch-up paint applied where required	NA	W/C	W/R	
C11-E	Final documentation review	EFR 07B	P	R	
C12	INSTALLATION OF VARIOUS EQUIPMENT				
C12-A	Prefabrication of supports				
C12-A1	Supports prefabricated and painted	NA	W/C	W/R	
C12-B	Installation of equipment				
C12-B1	Mounting & location as per drawings	NA	W/C	W/R	
C12-B2	Height, alignment and levelling	NA	W/C	W/R	
C12-B3	Maintenance accessibility	NA	W/C	W/R	
C12-B4	No interference to access ways	NA	W/C	W/R	
C12-B5	Accessories complete	NA	W/C	W/R	
C12-B6	Installation integrity and stability	NA	W/C	W/R	
C12-B7	There are no unauthorized modifications	NA	W/C	W/R	
C12-B8	There are no visible unauthorized modifications	NA	W/C	W/R	
C12-B9	Bolts and cable entry devices are of the correct type	NA	W/C	W/R	
C12-B10	Bolts and cable entry devices are tightened	NA	W/C	W/R	
C12-B11	Apparatus is appropriate to area classification	NA	W/C	W/R	
C12-B12	Apparatus group and temperature class is correct	NA	W/C	W/R	
C12-B13	Apparatus circuit identification available and correct	NA	W/C	W/R	
C12-B14	Flange faces are clean and undamaged	NA	W/C	W/R	
C12-B15	Flange gap are within max values permitted	NA	W/C	W/R	
C12-B16	Enclosure gaskets condition is satisfactory	NA	W/C	W/R	
C12-B17	Enclosed-break devices undamaged	NA	W/C	W/R	
C12-B18	Hermetically sealed devices undamaged	NA	W/C	W/R	
C12-B19	Restricted breathing enclosure satisfactory	NA	W/C	W/R	

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QUALITY CONTROL PLAN



ELECTRICAL INSTALLATION POWER SYSTEM

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION	ACTION	NOTES
			CONTR.	OWNER (*)	
C12-B20	Enclosure clearance is sufficient	NA	W/C	W/R	
C12-B21	Breathing and draining devices satisfactory	NA	W/C	W/R	
C12-C	Final inspection	EFR 07D	W	S	
C12-C1	Visual inspection and functional test	NA	W/C	W/R	
C12-C2	As-built marked up copy updated and available	NA	P	R	
C12-C3	Cold galvanizing touch-up paint applied where required	NA	W/C	W/R	
C12-D	Final documentation review	EFR 07D	P	R	
C13	INSTALLATION OF FIRESTOP BARRIERS				
C13-A	Installation				
C13-A1	Installation location as per approved drawings	NA	W/C	W/R	
C13-A2	Mounting of bolts	NA	W/C	W/R	
C13-A3	Mounting of gaskets	NA	W/C	W/R	
C13-A4	Alignment and leveling	NA	W/C	W/R	
C13-A5	Uniform filling of fireproofing material	NA	W/C	W/R	
C13-A6	Cable separation	NA	W/C	W/R	
C13-A7	Cable drip loops done (where applicable)	NA	W/C	W/R	
C13-A8	Cover secured	NA	W/C	W/R	
C13-A9	Final assembly	NA	W/C	W/R	
C13-A10	Silicone sealant applied (where applicable)	NA	W/C	W/R	
C13-B	Final inspection	EFR 05D	W	S	
C13-B1	Final visual inspection	NA	W/C	W/R	
C13-B2	As-built marked up copy updated and available	NA	P	R	
C13-C	Final documentation review	EFR 05D	P	R	

NOTES:

- (1) A copy of the document will be delivered to Owner for information.

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QUALITY CONTROL PLAN

ELECTRICAL INSTALLATION POWER SYSTEM

QUALITY CONTROL ACTIVITIES

GENERAL NOTES

- 1 THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THEJOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN- CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.
- 2 CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.

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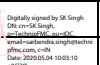


QUALITY CONTROL PLAN

ELECTRICAL INSTALLATION ELECTRICAL HEAT TRACING SYSTEM

TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
EFR 10A	Electrical Heat Tracing System - Local Distribution Panel Installation Summary Report
EFR 10B	Electrical Heat Tracing System - Local Distribution Panel Functional Test
EFR 10C	Electrical Heat Tracing System - Main Junction Box Installation Summary Report
EFR 10D	Electrical Heat Tracing System - Cold Cable Connection Summary Report
EFR 10E	Electrical Heat Tracing System - Heating Cable Installation Summary Report
EFR 10F	Electrical Heat Tracing System - Heating Cable Components Installation and Connection
EFR 10G	Electrical Heat Tracing System - Temperature Switch Installation Summary Report



LEGENDA

H	=	HOLD (RFI required - Work stop for inspection)
W	=	WITNESS (RFI required)
WC	=	100 % SUPERVISION AND EXAMINATION BY CONTRACTOR.
P	=	PREPARATION.
S	=	SURVEILLANCE (No RFI)
R	=	REVIEW OF REPORTS
N.A.	=	NOT APPLICABLE
A	=	AUTHORIZATION / APPROVAL
IFA	=	ISSUED FOR AUTHORIZATION/APPROVAL
INFO	=	FOR INFORMATION
!	=	WARNING (control of document revision status)

			SK Singh				
0	03.05.2020	ISSUED FOR IMPLEMENTATION	SK	PKP / TB	LA	JMC	
REV.	DATE	STATUS	WRITTEN BY	CHECKED BY	APPROVED BY	AUTHOR. BY	
DOCUMENT REVISIONS							

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ELECTRICAL INSTALLATION ELECTRICAL HEAT TRACING SYSTEM

QUALITY CONTROL ACTIVITIES



Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	OWNER (*)	
A	PRELIMINARY ACTIVITIES				
A1	CHECK OF CONTRACTOR DRAWINGS REVISION STATUS	NA	!	!	
A2	CONTRACTOR TECHNICAL SPECIFICATION AND PROCEDURE	NA	W/C	R/A	
A3	CONTRACTOR'S METHOD OF STATEMENT (IF REQUIRED)	NA	P	R/A	(1)
B	MATERIALS - BEFORE AND AFTER INSTALLATION				
B1	IDENTIFICATION AND PRESERVATION STATUS	NA	W/C	W/R	
C01	LOCAL DISTRIBUTION PANEL INSTALLATION				
C01-A	Prefabrication of supports				
C01-A1	Supports prefabricated and painted	NA	W/C	W/R	
C01-B	Installation of supports				
C01-B1	Supports installed properly	NA	W/C	W/R	
C01-B2	Installation & layout as per approved drawings	NA	W/C	R	
C01-B3	Cold galvanizing touch-up paint applied	NA	W/C	W/R	
C01-C	Installation of panelboard				
C01-C1	Mounting & location as per drawings	NA	W/C	R	
C01-C2	Alignment and levelling	NA	W/C	W/R	
C01-C3	Internal wiring meggered and color code & tags checked	NA	W/C	W/R	
C01-C4	Cables supported properly	NA	W/C	W/R	
C01-C5	Accessories complete and spare holes plugged	NA	W/C	W/R	
C01-C6	Breaker ratings & sizes verified	NA	W/C	W/R	
C01-C7	Main and auxiliary electrical connections are tight	NA	W/C	W/R	
C01-C8	There are no unauthorized modifications	NA	W/C	W/R	
C01-C9	There are no visible unauthorized modifications	NA	W/C	W/R	
C01-C10	Bolts and cable entry devices are of the correct type	NA	W/C	W/R	
C01-C11	Bolts and cable entry devices are tightened	NA	W/C	W/R	
C01-C12	Apparatus is appropriate to area classification	NA	W/C	W/R	
C01-C13	Apparatus group and temperature class is correct	NA	W/C	W/R	
C01-C14	Apparatus circuit identification available and correct	NA	W/C	W/R	
C01-C15	Flange faces are clean and undamaged	NA	W/C	W/R	

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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	OWNER (*)	
C01-C16	Flange gap are within max values permitted	NA	W/C	W/R	
C01-C17	Enclosure gaskets condition is satisfactory	NA	W/C	W/R	
C01-C18	Enclosed-break devices undamaged	NA	W/C	W/R	
C01-C19	Hermetically sealed devices undamaged	NA	W/C	W/R	
C01-C20	Restricted breathing enclosure satisfactory	NA	W/C	W/R	
C01-C21	Fans / enclosure clearance is sufficient	NA	W/C	W/R	
C01-C22	Breathing and draining devices satisfactory	NA	W/C	W/R	
C01-D	Final inspection	EFR 10A	W/C	W/R	
C01-D1	Grounding system	NA	W/C	W/R	
C01-D2	Functional testing done (EFR 10B)	EFR 10B	W/C	W/R	
C01-D3	Final visual inspection	NA	W/C	W/R	
C01-D4	As-built marked up copy updated and available	NA	P	R	
C01-E	Final documentation review	EFR 10A	P	R	
C02	MAIN JUNCTION BOX INSTALLATION				
C02-A	Prefabrication of supports				
C02-A1	Supports prefabricated and painted	NA	W/C	W/R	
C02-B	Installation of supports				
C02-B1	Supports installed properly	NA	W/C	W/R	
C02-B2	Installation & layout as per approved drawings	NA	W/C	R	
C02-B3	Cold galvanizing touch-up paint applied	NA	W/C	W/R	
C02-C	Installation of junction box				
C02-C1	Mounting & location as per drawings	NA	W/C	R	
C02-C2	Alignment and levelling	NA	W/C	W/R	
C02-C3	Internal wiring and terminals connected	NA	W/C	W/R	
C02-C4	Cables supported properly	NA	W/C	W/R	
C02-C5	Accessories complete and spare holes plugged	NA	W/C	W/R	
C02-C6	Nameplate and grounding connections	NA	W/C	W/R	
C02-C7	Main and auxiliary electrical connections are tight	NA	W/C	W/R	
C02-C8	There are no unauthorized modifications	NA	W/C	W/R	

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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	OWNER (*)	
C02-C9	There are no visible unauthorized modifications	NA	W/C	W/R	
C02-C10	Bolts and cable entry devices are of the correct type	NA	W/C	W/R	
C02-C11	Bolts and cable entry devices are tightened	NA	W/C	W/R	
C02-C12	Apparatus is appropriate to area classification	NA	W/C	W/R	
C02-C13	Apparatus group and temperature class is correct	NA	W/C	W/R	
C02-C14	Apparatus circuit identification available and correct	NA	W/C	W/R	
C02-C15	Flange faces are clean and undamaged	NA	W/C	W/R	
C02-C16	Flange gap are within max values permitted	NA	W/C	W/R	
C02-C17	Enclosure gaskets condition is satisfactory	NA	W/C	W/R	
C02-C18	Enclosed-break devices undamaged	NA	W/C	W/R	
C02-C19	Hermetically sealed devices undamaged	NA	W/C	W/R	
C02-C20	Restricted breathing enclosure satisfactory	NA	W/C	W/R	
C02-C21	Enclosure clearance is sufficient	NA	W/C	W/R	
C02-C22	Breathing and draining devices satisfactory	NA	W/C	W/R	
C02-D	Final inspection	EFR 10C	W	S	
C02-D1	Final visual inspection	NA	W/C	W/R	
C02-D2	As-built marked up copy updated and available	NA	P	R	
C02-E	Final documentation review	EFR 10C	P	R	
C03	COLD CABLE CONNECTION				
C03-A	Installation				
C03-A1	Mounting & location as per drawings	NA	W/C	R	
C03-A2	Alignment and levelling	NA	W/C	W/R	
C03-A3	Internal wiring and terminals connected	NA	W/C	W/R	
C03-A4	Cables supported properly	NA	W/C	W/R	
C03-A5	Accessories complete and spare holes plugged	NA	W/C	W/R	
C03-A6	Nameplate and grounding connections	NA	W/C	W/R	
C03-A7	Main and auxiliary electrical connections are tight	NA	W/C	W/R	
C03-A8	There are no unauthorized modifications	NA	W/C	W/R	
C03-A9	There are no visible unauthorized modifications	NA	W/C	W/R	
C03-A10	Bolts and cable entry devices are of the correct type	NA	W/C	W/R	
C03-A11	Bolts and cable entry devices are tightened	NA	W/C	W/R	
C03-A12	Apparatus is appropriate to area classification	NA	W/C	W/R	

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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	OWNER (*)	
C03-A13	Apparatus group and temperature class is correct	NA	W/C	W/R	
C03-A14	Apparatus circuit identification available and correct	NA	W/C	W/R	
C03-A15	Flange faces are clean and undamaged	NA	W/C	W/R	
C03-A16	Flange gap are within max values permitted	NA	W/C	W/R	
C03-A17	Enclosure gaskets condition is satisfactory	NA	W/C	W/R	
C03-A18	Enclosed-break devices undamaged	NA	W/C	W/R	
C03-A19	Hermetically sealed devices undamaged	NA	W/C	W/R	
C03-A20	Restricted breathing enclosure satisfactory	NA	W/C	W/R	
C03-A21	Enclosure clearance is sufficient	NA	W/C	W/R	
C03-A22	Breathing and draining devices satisfactory	NA	W/C	W/R	
C03-B	Cable way and wiring				
C03-B1	Conduit and cable tray installed properly	NA	W/C	W/R	
C03-B2	Wires and cables installation	NA	W/C	W/R	
C03-B3	Wiring, glanding and cabling	NA	W/C	W/R	
C03-B4	Grounding and tagging	NA	W/C	W/R	
C03-C	Final inspection	EFR 10D	W/C	W/R	
C03-C1	Final visual inspection	NA	W/C	W/R	
C03-C2	As-built marked up copy updated and available	NA	P	W/R	
C03-D	Final documentation review	EFR 10D	P	R	
C04	HEATING CABLE INSTALLATION				
C04-A	Pre-installation checks				
C04-A1	Continuity check on cable reel	NA	W/C	W/R	
C04-A2	Insulation test on cable reel	NA	W/C	W/R	
C04-A3	Verify piping acceptance by piping inspector	NA	W/C	W/R	
C04-A4	Conduits / pipes properly drained	NA	W/C	W/R	
C04-A5	Verify for mechanical damages in heater cables	NA	W/C	W/R	
C04-B	Installation of cables				
C04-B1	The correct cable is on the right pipe in the right location	NA	W/C	W/R	
C04-B2	Heating cable wrapped with the correct pitch	NA	W/C	W/R	
C04-B3	Metallic tape properly applied	NA	W/C	W/R	
C04-B4	Heater cable correctly attached to piping	NA	W/C	W/R	

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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	OWNER (*)	
C04-B5	Thermostats installation not interfering with insulation	NA	W/C	W/R	
C04-B6	Correct type thermostats installed in the right location	NA	W/C	W/R	
C04-B7	Removability for maintenance verified	NA	W/C	W/R	
C04-B8	Connector components and seals correct	NA	W/C	W/R	
C04-B9	Check correctness of wiring to heaters	NA	W/C	W/R	
C04-B10	Continuity and meggering	NA	W/C	W/R	
C04-C	Installation and connection of components	NA	W/C	W/R	
C04-D	Final inspection	EFR 10E	W	S	
C04-D1	Installation visual inspection acceptable	NA	W/C	W/R	
C04-D2	“Electric traced” labels applied	NA	W/C	W/R	
C04-D3	Startup current	NA	W/C	W/R	
C04-D4	As-built marked up copy updated and available	NA	P	R	
C04-E	Final documentation review	EFR 10E	P	R	
C05	TEMPERATURE SWITCH INSTALLATION				
C05-A	Installation				
C05-A1	Mounting & location as per drawings	NA	W/C	W/R	
C05-A2	Internal wiring and terminals connected	NA	W/C	W/R	
C05-A3	Device not exposed to mechanical or thermal damages	NA	W/C	W/R	
		NA	W/C	W/R	
C05-A4	Device not exposed to direct sunlight or near heat sinks	NA	W/C	W/R	
C05-A5	Device exposed to strongest wind and coolest temp	NA	W/C	W/R	
C05-A6	Accessories complete and spare holes plugged	NA	W/C	W/R	
C05-A7	Main and auxiliary electrical connections are tight	NA	W/C	W/R	
C05-A8	There are no unauthorized modifications	NA	W/C	W/R	
C05-A9	There are no visible unauthorized modifications	NA	W/C	W/R	
C05-A10	Bolts and cable entry devices are of the correct type	NA	W/C	W/R	
C05-A11	Bolts and cable entry devices are tightened	NA	W/C	W/R	
C05-A12	Apparatus is appropriate to area classification	NA	W/C	W/R	
C05-A13	Apparatus group and temperature class is correct	NA	W/C	W/R	
C05-A14	Apparatus circuit identification available and correct	NA	W/C	W/R	
C05-A15	Flange faces are clean and undamaged	NA	W/C	W/R	
C05-A16	Flange gap are within max values permitted	NA	W/C	W/R	
C05-A17	Enclosure gaskets condition is satisfactory	NA	W/C	W/R	

 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP- ELECTRICAL INSTALLATION ELECTRICAL HEAT TRACING SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1650-001	Rev. No. 0	Page 7 of 7



Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	OWNER (*)	
C05-A18	Enclosed-break devices undamaged	NA	W/C	W/R	
C05-A19	Hermetically sealed devices undamaged	NA	W/C	W/R	
C05-A20	Restricted breathing enclosure satisfactory	NA	W/C	W/R	
C05-A21	Enclosure clearance is sufficient	NA	W/C	W/R	
C05-A22	Breathing and draining devices satisfactory	NA	W/C	W/R	
C05-B	Final inspection	EFR 10G	W	S	
C05-B1	Final visual inspection	NA	W/C	W/R	
C05-B2	Thermostat / device operating	NA	W/C	W/R	
C05-B3	As-built marked up copy updated and available	NA	P	R	
C05-C	Final documentation review	EFR 10G	P	R	

NOTES:



(1) A copy of the document will be delivered to Owner for information.



GENERAL NOTES



- 1 THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THEJOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY PMC AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN- CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF PMC HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.
- 2 CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT PMC/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.



 		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM	EFR 10A	PROJ. No.:	QCF REV.	SH. 1 OF 2
ELECTRICAL HEAT TRACING SYSTEM LOCAL DISTRIBUTION PANEL INSTALLATION SUMMARY REPORT		CONTRACTOR:		EFR 10A N° ____
GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
Is the equipment installed in hazardous area? <input type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", the fields marked with an (*) must be filled in)				
(*) Area classification acc. to IEC 60079-10-1 and IEC 60079-10-2: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> Mixed				
(*) Gas group: <input type="checkbox"/> IIA <input type="checkbox"/> IIB <input type="checkbox"/> IIC				
(*) Temp. class: <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> T5 <input type="checkbox"/> T6				
EQUIPMENT IDENTIFICATION				
Tag number:		Rated voltage: V		30 mA branch protection: <input type="checkbox"/> Yes <input type="checkbox"/> No
Manufacturer:		Main breaker rating: A		Feeding cable tag:
Serial number:		Number of branch breakers:		Ref. drawing:
(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No				
(*) Execution: EEx-__ II__ T__				
ASSOCIATED CABLE GLANDS				
Type:		Material:		Size:
		(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		Quantity installed: n.
		(*) Execution: EEx-__ II__ T__		
INSPECTIONS (Ref. to QCP 1650.01)		N.A.	ACC.	REPORT / REFERENCE
		INSPECTOR SIGNATURE & DATE		
		CONTRACTOR		
		TECHNIP		
		OWNER		
A - Prefabrication of supports				
A1	Supports prefabricated and painted	<input type="checkbox"/>	<input type="checkbox"/>	
B - Installation of supports				
B1	Supports installed properly	<input type="checkbox"/>	<input type="checkbox"/>	
B2	Installation & layout as per approved drawings	<input type="checkbox"/>	<input type="checkbox"/>	
B3	Cold galvanizing touch-up paint applied	<input type="checkbox"/>	<input type="checkbox"/>	
C - Installation of panelboard				
C1	Mounting & location as per drawings	<input type="checkbox"/>	<input type="checkbox"/>	
C2	Alignment and levelling	<input type="checkbox"/>	<input type="checkbox"/>	
C3	Internal wiring meggered and color code & tags checked	<input type="checkbox"/>	<input type="checkbox"/>	
C4	Cables supported properly	<input type="checkbox"/>	<input type="checkbox"/>	
C5	Accessories complete and spare holes plugged	<input type="checkbox"/>	<input type="checkbox"/>	
C6	Breaker ratings & sizes verified	<input type="checkbox"/>	<input type="checkbox"/>	
C7	Main and auxiliary electrical connections are tight	<input type="checkbox"/>	<input type="checkbox"/>	
C8	There are no unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>	
C9	There are no visible unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>	
C10	Bolts and cable entry devices are of the correct type	<input type="checkbox"/>	<input type="checkbox"/>	
C11	Bolts and cable entry devices are tightened	<input type="checkbox"/>	<input type="checkbox"/>	
C12	(*) Apparatus is appropriate to area classification	<input type="checkbox"/>	<input type="checkbox"/>	
C13	(*) Apparatus group and temperature class is correct	<input type="checkbox"/>	<input type="checkbox"/>	
C14	(*) Apparatus circuit identification available and correct	<input type="checkbox"/>	<input type="checkbox"/>	
C15	(*) Flange faces are clean and undamaged (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>	
C16	(*) Flange gap are within max values permitted (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>	
C17	(*) Enclosure gaskets condition is satisfactory (Note 2)	<input type="checkbox"/>	<input type="checkbox"/>	

		PROJECT:												
		OWNER:												
QUALITY CONTROL FORM	EFR 10B	PROJ. No.:	QCF REV. SH. 1 OF 1											
ELECTRICAL HEAT TRACING SYSTEM LOCAL DISTRIBUTION PANEL FUNCTIONAL TEST		CONTRACTOR:	EFR 10B N° ____											
GENERAL DATA														
Location / area:		System / subsystem:												
Date (dd/mm/yy):														
Is the equipment installed in hazardous area? <input type="checkbox"/> Yes <input type="checkbox"/> No														
(*) Area classification acc. to IEC 60079-10-1 and IEC 60079-10-2: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> Mixed														
(*) Gas group: <input type="checkbox"/> IIA <input type="checkbox"/> IIB <input type="checkbox"/> IIC (*) Temp. class: <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> T5 <input type="checkbox"/> T6														
EQUIPMENT IDENTIFICATION														
Tag number:		Rated voltage: V												
Manufacturer:		Main breaker rating: A												
Serial number:		Number of branch breakers:												
		30 mA branch protection: <input type="checkbox"/> Yes <input type="checkbox"/> No												
		Feeding cable tag:												
		Ref. drawing:												
TESTING														
Multimeter manuf.:		Type:												
		Calibration date:												
		Recalibration date:												
MAIN BREAKER OPERATION														
#	Tag	Open		Close		Continuity		Aux. contacts			30 mA device op.			
		Pass	Fail	Pass	Fail	Pass	Fail	P	F	NA	P	F	NA	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BRANCH BREAKERS OPERATION														
#	Circuit	Open		Close		Continuity		Aux. contacts			30 mA device op.			
		Pass	Fail	Pass	Fail	Pass	Fail	P	F	NA	P	F	NA	
1.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CONTROL OPERATION														
Manual mode		Pass	<input type="checkbox"/>	Fail	<input type="checkbox"/>	Auto mode		Pass	<input type="checkbox"/>	Fail	<input type="checkbox"/>			
Remote Alarm		Pass	<input type="checkbox"/>	Fail	<input type="checkbox"/>	Local signalization (lamps)		Pass	<input type="checkbox"/>	Fail	<input type="checkbox"/>			
CONTROL UNIT SETTING														
Thermostat On/Off		Set		°C		Actual		°C		Pass	<input type="checkbox"/>	Fail	<input type="checkbox"/>	
REMARKS :														
INSPECTORS		CONTRACTOR				TECHNIP				OWNER				
NAME														
SIGNATURE														
DATE														

 TechnipFMC		 IndianOil		PROJECT:		
				OWNER:		
QUALITY CONTROL FORM		EFR 10C		PROJ. No.:	QCF REV.	SH. 1 OF 2
ELECTRICAL HEAT TRACING SYSTEM MAIN JUNCTION BOX INSTALLATION SUMMARY REPORT				CONTRACTOR:		EFR 10C N° ____
GENERAL DATA						
Tag:		Location / area:		System / subsystem:		Date (dd/mm/yy):
Is the equipment installed in hazardous area? <input type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", the fields marked with an (*) must be filled in)						
(*) Area classification acc. to IEC 60079-10-1 and IEC 60079-10-2: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> Mixed						
(*) Gas group: <input type="checkbox"/> IIA <input type="checkbox"/> IIB <input type="checkbox"/> IIC				(*) Temp. class: <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> T5 <input type="checkbox"/> T6		
MAIN JUNCTION BOX						
Manufacturer:		Model:		Size:		Quantity installed: n.
		(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T		
ASSOCIATED CABLE GLANDS						
Type:		Material:		Size:		Quantity installed: n.
		(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T		
INSPECTIONS (Ref. to QCF 1650.01)				N.A.	ACC.	REPORT / REFERENCE
				INSPECTOR SIGNATURE & DATE		
				CONTRACTOR		
				TECHNIP		
				OWNER		
A - Prefabrication of supports						
A1	Supports prefabricated and painted			<input type="checkbox"/>	<input type="checkbox"/>	
B - Installation of supports						
B1	Supports installed properly			<input type="checkbox"/>	<input type="checkbox"/>	
B2	Installation & layout as per approved drawings			<input type="checkbox"/>	<input type="checkbox"/>	
B3	Cold galvanizing touch-up paint applied			<input type="checkbox"/>	<input type="checkbox"/>	
C - Installation of junction box						
C1	Mounting & location as per drawings			<input type="checkbox"/>	<input type="checkbox"/>	
C2	Alignment and levelling			<input type="checkbox"/>	<input type="checkbox"/>	
C3	Internal wiring and terminals connected			<input type="checkbox"/>	<input type="checkbox"/>	
C4	Cables supported properly			<input type="checkbox"/>	<input type="checkbox"/>	
C5	Accessories complete and spare holes plugged			<input type="checkbox"/>	<input type="checkbox"/>	
C6	Nameplate and grounding connections			<input type="checkbox"/>	<input type="checkbox"/>	
C7	Main and auxiliary electrical connections are tight			<input type="checkbox"/>	<input type="checkbox"/>	
C8	There are no unauthorized modifications			<input type="checkbox"/>	<input type="checkbox"/>	
C9	There are no visible unauthorized modifications			<input type="checkbox"/>	<input type="checkbox"/>	
C10	Bolts and cable entry devices are of the correct type			<input type="checkbox"/>	<input type="checkbox"/>	
C11	Bolts and cable entry devices are tightened			<input type="checkbox"/>	<input type="checkbox"/>	
C12	(*) Apparatus is appropriate to area classification			<input type="checkbox"/>	<input type="checkbox"/>	
C13	(*) Apparatus group and temperature class is correct			<input type="checkbox"/>	<input type="checkbox"/>	
C14	(*) Apparatus circuit identification available and correct			<input type="checkbox"/>	<input type="checkbox"/>	
C15	(*) Flange faces are clean and undamaged (Note 1)			<input type="checkbox"/>	<input type="checkbox"/>	
C16	(*) Flange gap are within max values permitted (Note 1)			<input type="checkbox"/>	<input type="checkbox"/>	
C17	(*) Enclosure gaskets condition is satisfactory (Note 2)			<input type="checkbox"/>	<input type="checkbox"/>	
C18	(*) Enclosed-break devices undamaged (Note 3)			<input type="checkbox"/>	<input type="checkbox"/>	

 		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 10D		PROJ. No.:	QCF REV.	SH. 1 OF 2
ELECTRICAL HEAT TRACING SYSTEM COLD CABLE CONNECTION SUMMARY REPORT		CONTRACTOR:		EFR 10D N° ____
GENERAL DATA				
Tag:	Location / area:	System / subsystem:	Date (dd/mm/yy):	
Is the equipment installed in hazardous area? <input type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", the fields marked with an (*) must be filled in)				
(*) Area classification acc. to IEC 60079-10-1 and IEC 60079-10-2: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> Mixed				
(*) Gas group: <input type="checkbox"/> IIA <input type="checkbox"/> IIB <input type="checkbox"/> IIC				
(*) Temp. class: <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> T5 <input type="checkbox"/> T6				
JUNCTION BOXES				
Manufacturer:	Model:	Size:	Quantity installed: n.	
(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T__		
ASSOCIATED CABLE GLANDS				
Type:	Material:	Size:	Quantity installed: n.	
(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T__		
INSPECTIONS (Ref. to QCP 1650.01)		N.A.	ACC.	REPORT / REFERENCE
				INSPECTOR SIGNATURE & DATE
				CONTRACTOR
				TECHNIP
				OWNER
A - Installation				
A1.	Mounting & location as per drawings	<input type="checkbox"/>	<input type="checkbox"/>	
A2.	Maintenance accessibility	<input type="checkbox"/>	<input type="checkbox"/>	
A3.	Internal wiring and terminals connected	<input type="checkbox"/>	<input type="checkbox"/>	
A4.	Cables supported properly	<input type="checkbox"/>	<input type="checkbox"/>	
A5.	Accessories complete and spare holes plugged	<input type="checkbox"/>	<input type="checkbox"/>	
A6.	Nameplate and grounding connections	<input type="checkbox"/>	<input type="checkbox"/>	
A7.	Main and auxiliary electrical connections are tight	<input type="checkbox"/>	<input type="checkbox"/>	
A8.	There are no unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>	
A9.	There are no visible unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>	
A10.	Bolts and cable entry devices are of the correct type	<input type="checkbox"/>	<input type="checkbox"/>	
A11.	Bolts and cable entry devices are tightened	<input type="checkbox"/>	<input type="checkbox"/>	
A12.	(*) Apparatus is appropriate to area classification	<input type="checkbox"/>	<input type="checkbox"/>	
A13.	(*) Apparatus group and temperature class is correct	<input type="checkbox"/>	<input type="checkbox"/>	
A14.	(*) Apparatus circuit identification available and correct	<input type="checkbox"/>	<input type="checkbox"/>	
A15.	(*) Flange faces are clean and undamaged (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>	
A16.	(*) Flange gap are within max values permitted (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>	
A17.	(*) Enclosure gaskets condition is satisfactory (Note 2)	<input type="checkbox"/>	<input type="checkbox"/>	
A18.	(*) Enclosed-break devices undamaged (Note 3)	<input type="checkbox"/>	<input type="checkbox"/>	
A19.	(*) Hermetically sealed devices undamaged (Note 3)	<input type="checkbox"/>	<input type="checkbox"/>	
A20.	(*) Restricted breathing enclosure satisfactory (Note 3)	<input type="checkbox"/>	<input type="checkbox"/>	
A21.	(*) Enclosure clearance is sufficient (Note 4)	<input type="checkbox"/>	<input type="checkbox"/>	
A22.	(*) Breathing and draining devices satisfactory (Note 4)	<input type="checkbox"/>	<input type="checkbox"/>	

 		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 10E		PROJ. No.:	QCF REV.	SH. 1 OF 2
ELECTRICAL HEAT TRACING SYSTEM HEATING CABLE INSTALLATION SUMMARY REPORT		CONTRACTOR:		EFR 10E N° ____
GENERAL DATA				
Tag:	Location / area:	System / subsystem:	Date (dd/mm/yy):	
Is the equipment installed in hazardous area? <input type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", the fields marked with an (*) must be filled in)				
(*) Area classification acc. to IEC 60079-10-1 and IEC 60079-10-2: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> Mixed				
(*) Gas group: <input type="checkbox"/> IIA <input type="checkbox"/> IIB <input type="checkbox"/> IIC		(*) Temp. class: <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> T5 <input type="checkbox"/> T6		
LINE / EQUIPMENT DATA				
Line No.:		Line No.:		
Line No.:		Line No.:		
Equipment No.:		Heating circuit tag:		
TRACING CABLE DATA				
Cable type: <input type="checkbox"/> Self-regulating <input type="checkbox"/> Mineral ins.		Manufacturer / model:		Thermostat <input type="checkbox"/> Yes <input type="checkbox"/> No
Associated instrument / line tag:		Ref. drawing:		Rev.
Panel tag:	Circuit number:	Breaker rating (A):	Heater length (m):	
(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T__		
INSPECTIONS (Ref. to QCP 1650.01)		N.A.	ACC.	REPORT / REFERENCE (*)
				INSPECTOR SIGNATURE & DATE
A - Prefabrication of supports				
A1.	Continuity check on cable reel Value: MΩ	<input type="checkbox"/>	<input type="checkbox"/>	
A2.	Insulation test on cable reel Value: MΩ	<input type="checkbox"/>	<input type="checkbox"/>	
A3.	Verify piping acceptance by piping inspector	<input type="checkbox"/>	<input type="checkbox"/>	
A4.	Conduits / pipes properly drained	<input type="checkbox"/>	<input type="checkbox"/>	
A5.	Verify for mechanical damages in heater cables	<input type="checkbox"/>	<input type="checkbox"/>	
B - Installation of cables				
B1.	The correct cable is on the right pipe in the right location	<input type="checkbox"/>	<input type="checkbox"/>	
B2.	Heating cable wrapped with the correct pitch	<input type="checkbox"/>	<input type="checkbox"/>	
B3.	Metallic tape properly applied	<input type="checkbox"/>	<input type="checkbox"/>	
B4.	Heater cable correctly attached to piping	<input type="checkbox"/>	<input type="checkbox"/>	
B5.	Thermostats installation not interfering with insulation	<input type="checkbox"/>	<input type="checkbox"/>	
B6.	Correct type thermostats installed in the right location	<input type="checkbox"/>	<input type="checkbox"/>	
B7.	Removability for maintenance verified	<input type="checkbox"/>	<input type="checkbox"/>	
B8.	Connector components and seals correct	<input type="checkbox"/>	<input type="checkbox"/>	
B9.	Check correctness of wiring to heaters	<input type="checkbox"/>	<input type="checkbox"/>	
B10.	Continuity and meggering	<input type="checkbox"/>	<input type="checkbox"/>	
CONTINUITY AND MEGGERING (*)				
Megger manuf:	Type:	Calibration date:	Recalibration date:	
Time (hh/mm):	Amb. temperature:	<input type="checkbox"/> °C <input type="checkbox"/> °F	Humidity:	%
Test voltage and time:	____ kVDC for ____ min	Cable continuity	Meggering (before pipe insulation)	Meggering (after pipe insulation)
Acceptance criteria:	I. R. > ____ MΩ	MΩ	MΩ	MΩ

 TechnipFMC		 IndianOil		PROJECT:		
				OWNER:		
QUALITY CONTROL FORM		EFR 10G		PROJ. No.:	QCF REV.	SH. 1 OF 2
ELECTRICAL HEAT TRACING SYSTEM TEMPERATURE SWITCH INSTALLATION SUMMARY REPORT				CONTRACTOR:		EFR 10G N° ____
GENERAL DATA						
Tag:		Location / area:		System / subsystem:		Date (dd/mm/yy):
Is the equipment installed in hazardous area? <input type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", the fields marked with an (*) must be filled in)						
(*) Area classification acc. to IEC 60079-10-1 and IEC 60079-10-2: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> Mixed						
(*) Gas group: <input type="checkbox"/> IIA <input type="checkbox"/> IIB <input type="checkbox"/> IIC						
(*) Temp. class: <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> T5 <input type="checkbox"/> T6						
THERMOSTAT / TEMPERATURE CONTROL DEVICE						
Manufacturer:		Model:		Size:		Quantity installed: n.
		(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx- <input type="checkbox"/> II <input type="checkbox"/> T		
ASSOCIATED CABLE GLANDS						
Type:		Material:		Size:		Quantity installed: n.
		(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx- <input type="checkbox"/> II <input type="checkbox"/> T		
INSPECTIONS (Ref. to QCP 1650.01)				N.A.	ACC.	REPORT / REFERENCE
						INSPECTOR SIGNATURE & DATE
						CONTRACTOR
						TECHNIP
						OWNER
A - Installation						
A1.	Mounting & location as per drawings			<input type="checkbox"/>	<input type="checkbox"/>	
A2.	Internal wiring and terminals connected			<input type="checkbox"/>	<input type="checkbox"/>	
A3.	Device not exposed to mechanical or thermal damages			<input type="checkbox"/>	<input type="checkbox"/>	
A4.	Device not exposed to direct sunlight or near heat sinks			<input type="checkbox"/>	<input type="checkbox"/>	
A5.	Device exposed to strongest wind and coolest temp			<input type="checkbox"/>	<input type="checkbox"/>	
A6.	Accessories complete and spare holes plugged			<input type="checkbox"/>	<input type="checkbox"/>	
A7.	Main and auxiliary electrical connections are tight			<input type="checkbox"/>	<input type="checkbox"/>	
A8.	There are no unauthorized modifications			<input type="checkbox"/>	<input type="checkbox"/>	
A9.	There are no visible unauthorized modifications			<input type="checkbox"/>	<input type="checkbox"/>	
A10.	Bolts and cable entry devices are of the correct type			<input type="checkbox"/>	<input type="checkbox"/>	
A11.	Bolts and cable entry devices are tightened			<input type="checkbox"/>	<input type="checkbox"/>	
A12.	(*) Apparatus is appropriate to area classification			<input type="checkbox"/>	<input type="checkbox"/>	
A13.	(*) Apparatus group and temperature class is correct			<input type="checkbox"/>	<input type="checkbox"/>	
A14.	(*) Apparatus circuit identification available and correct			<input type="checkbox"/>	<input type="checkbox"/>	
A15.	(*) Flange faces are clean and undamaged (Note 1)			<input type="checkbox"/>	<input type="checkbox"/>	
A16.	(*) Flange gap are within max values permitted (Note 1)			<input type="checkbox"/>	<input type="checkbox"/>	
A17.	(*) Enclosure gaskets condition is satisfactory (Note 2)			<input type="checkbox"/>	<input type="checkbox"/>	
A18.	(*) Enclosed-break devices undamaged (Note 3)			<input type="checkbox"/>	<input type="checkbox"/>	
A19.	(*) Hermetically sealed devices undamaged (Note 3)			<input type="checkbox"/>	<input type="checkbox"/>	
A20.	(*) Restricted breathing enclosure satisfactory (Note 3)			<input type="checkbox"/>	<input type="checkbox"/>	
A21.	(*) Enclosure clearance is sufficient (Note 4)			<input type="checkbox"/>	<input type="checkbox"/>	
A22.	(*) Breathing and draining devices satisfactory (Note 4)			<input type="checkbox"/>	<input type="checkbox"/>	

 	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
	CLIENT		INDIAN OIL CORPORATION LIMITED	
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**QUALITY CONTROL PLAN
ELECTRICAL INSTALLATION
CATHODIC PROTECTION SYSTEM**





TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
EFR 11A	Cathodic Protection System - Transformer Rectifier Mechanical Installation, Electrical Installation & Tests Summary Report
EFR 11C	Cathodic Protection System - Anodes Installation and Connection Summary Report
EFR 11D	Cathodic Protection System - Reference Cells Installation and Connection Summary Report
EFR 11E	Cathodic Protection System - Test Stations Installation and Connection Summary Report
EFR 11F	Cathodic Protection System - Junction Boxes Installation Summary Report
EFR 11G	Cathodic Protection System - Cables Installation Summary Report
EFR 11H	Cathodic Protection System - Cables Connection Summary Report

REFERENCE DOCUMENTS:

- 080557C-000-JSD-1600-007 **JOB SPECIFICATIONS FOR CATHODIC PROTECTION SYSTEM**
- Drawings

LEGENDS

H	=	HOLD (RFI required - Work stop for inspection)
W	=	WITNESS (RFI required)
WC	=	100 % SUPERVISION AND EXAMINATION BY CONTRACTOR.
P	=	PREPARATION.
S	=	SURVEILLANCE (No RFI)
R	=	REVIEW OF REPORTS
N.A.	=	NOT APPLICABLE
A	=	AUTHORIZATION / APPROVAL
IFA	=	ISSUED FOR AUTHORIZATION/APPROVAL
INFO	=	FOR INFORMATION
!	=	WARNING (control of document revision status)

			 Samit Paul 2019.10.21 18:40:08 +05'30'	 Digitally signed by samit.paul@technipfmc.com DN: cn=samit.paul@technipfmc.com Date: 2019.10.21 18:58:03 +05'30'	 Alakapann L 2019.11.06 17:04:03 +05'30'	 Mortischristopher Jeusmanian 2019.11.06 22:33:43 +05'30'
A	21.10.2019	ISSUED FOR INFORMATION	SMP	PKP	LA/ANJ	JMC
REV	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	AUTHORIZED

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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
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QUALITY CONTROL PLAN
ELECTRICAL INSTALLATION CATHODIC PROTECTION SYSTEM

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
A	PRELIMINARY ACTIVITIES				
A1	CHECK OF CONTRACTOR DRAWINGS REVISION STATUS	NA	!	!	
A2	CONTRACTOR TECHNICAL SPECIFICATION AND PROCEDURE	NA	INFO	A	
A3	CONTRACTOR'S METHOD OF STATEMENT (IF REQUIRED)	NA	P	A	(1)
B	MATERIALS - BEFORE AND AFTER INSTALLATION				
B1	IDENTIFICATION AND PRESERVATION STATUS	NA	WC	S	
C01	INSTALLATION OF TRANSFORMER RECTIFIER				
C01-A	Transportation and alignment				
C01-A1	Compliance of equipment rating and nameplate with documentation	NA	WC	S	
C01-A2	No indication of rough handling	NA	WC	S	
C01-A3	All shipping bracings removed	NA	WC	S	
C01-A4	Required area and equipment clearances	NA	WC	S	
C01-A5	Transformer rectifier correctly aligned and levelled	NA	WC	S	
C01-B	Mechanical installation				
C01-B1	Transformer rectifier correctly anchored on its foundation	NA	WC	S	
C01-B2	No missing hardware and accessory components not damaged	NA	WC	S	
C01-B3	Doors tightly sealed and aligned	NA	WC	S	
C01-B4	Nameplates	NA	WC	S	
C01-B5	Insulating liquid filling and level check	NA	WC	S	
C01-B6	Oil treatment (only where applicable)	NA	WC	S	
C01-B7	Operability of all valves (drain, sample, etc) and flange gaskets conditions	NA	WC	S	
C01-C	Electrical installation				
C01-C1	Earthing connections done	NA	WC	S	
C01-C2	Correct tap settings	NA	WC	S	
C01-C3	Internal wiring checked and meggered	NA	WC	S	

 TechnipFMC  IndianOil	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery		
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ELECTRICAL INSTALLATION CATHODIC PROTECTION SYSTEM

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C01-C4	Correct operation of protective devices and their alarm and trip circuits	NA	WC	S	
C01-C5	Correct operation of metering instruments and lamps	NA	WC	S	
C01-D	Testing	EFR 11A	WC	W/R	
C01-E	Final inspection	EFR 11A	WC	W/R	
C01-E1	Final visual inspection	NA	WC	W/R	
C01-E2	Tests on rectifier performed	EFR 11A	WC	W/R	
C01-E3	As-built marked up copy updated and available	NA	P	R	
C01-F	Final documentation review	EFR 11A	P	R	
C02	ANODES INSTALLATION AND CONNECTION				
C02-A	Installation				
C02-A1	Location as per drawings	NA	WC	S	
C02-A2	Surface / bed preparation (ribbon/mesh anodes)	NA	WC	S	
C02-A3	Burial depth	NA	WC	S	
C02-A4	Distance from nearest pipe	NA	WC	S	
C02-A5	Interdistance (ribbon/mesh anodes)	NA	WC	S	
C02-A6	Backfilling	NA	WC	S	
C02-A7	Conduits correctly sized	NA	WC	S	
C02-A8	Cable tail continuity verified	NA	WC	S	
C02-A9	Cables connected and tagged at both ends	NA	WC	S	
C02-A10	Vent pipe installed (if applicable)	NA	WC	S	
C02-B	Tests and final inspection	EFR 11C	WC	W/R	
C02-B1	Anode resistance	NA	WC	W/R	
C02-B2	As-built marked up copy updated and available	NA	P	R	
C02-C	Final documentation review	EFR 11C	P	R	
C03	REFERENCE CELLS INSTALLATION AND CONNECTION				
C03-A	Installation				

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ELECTRICAL INSTALLATION CATHODIC PROTECTION SYSTEM

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C03-A1	Pre-installation calibration against standard reference electrode done	NA	WC	S	
C03-A2	Location as per drawings	NA	WC	S	
C03-A3	Cell soaking (pre-installation)	NA	WC	S	
C03-A4	Correct position and installation	NA	WC	S	
C03-A5	Negative cable and wetting pipes provided	NA	WC	S	
C03-A6	Backfilling and cell soaking (post-installation)	NA	WC	S	
C03-A7	Cable tail continuity verified	NA	WC	S	
C03-B	Tests and final inspection	EFR 11D	WC	W/R	
C03-B1	DC resistance of the monitoring cable	EFR 11D	WC	W/R	
C03-B2	Voltage between cell & anode	EFR 11D	WC	W/R	
C03-B3	As-built marked up copy updated and available	NA	P	R	
C03-C	Final documentation review	EFR 11D	P	R	
C04	TEST STATIONS INSTALLATION AND CONNECTION				
C04-A	Installation				
C04-A1	Correct and solid vertical installation	NA	WC	S	
C04-A2	Conduit correctly sized	NA	WC	S	
C04-A3	Cable continuity verified and internal wiring connected	NA	WC	S	
C04-B	Tests and final inspection	EFR 11E	WC	W/R	
C04-B1	Cable continuity verified and internal wiring connected	EFR 11E	WC	W/R	
C04-B2	Shunt resistance checked	EFR 11E	WC	W/R	
C04-C	Final documentation review	EFR 11E	P	R	
C05	JUNCTION BOXES INSTALLATION				
C05-A	Installation				
C05-A1	Layout and mounting correct	NA	WC	S	
C05-A2	Cover not damaged	NA	WC	S	
C05-A3	Internal wirings connected	NA	WC	S	
C05-A4	Labeling check	NA	WC	S	

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ELECTRICAL INSTALLATION CATHODIC PROTECTION SYSTEM
QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C05-A5	Grounding connections done	NA	WC	S	
C05-B	Tests and final inspection	EFR 11F	WC	W/R	
C05-B1	Apparatus is appropriate to area classification	NA	WC	W/R	
C05-B2	Apparatus group and temperature class is correct	NA	WC	W/R	
C05-B3	Apparatus circuit identification available and correct	NA	WC	W/R	
C05-B4	There are no unauthorized modifications	NA	WC	W/R	
C05-B5	There are no visible unauthorized modifications	NA	WC	W/R	
C05-B6	Bolts and cable entry devices are of the correct type	NA	WC	W/R	
C05-B7	Bolts and cable entry devices are tightened	NA	WC	W/R	
C05-B8	Flange faces are clean and undamaged	NA	WC	W/R	
C05-B9	Flange gap are within max values permitted	NA	WC	W/R	
C05-B10	Main and auxiliary electrical connections are tight	NA	WC	W/R	
C05-B11	Enclosure gaskets condition is satisfactory	NA	WC	W/R	
C05-B12	Enclosure clearance is sufficient	NA	WC	W/R	
C05-B13	Breathing and draining devices satisfactory	NA	WC	W/R	
C05-C	Final documentation review	EFR 11F	P	R	
C06	CABLES INSTALLATION				
C06-A	Installation				
C06-A1	Trench/duct characteristics, location, burial depth and installation check	NA	WC	S	
C06-A2	Routing acc. to drawings and check of interference with other buried systems	NA	WC	S	
C06-A3	Check if the material is damaged and its conformance to specification, drawings	NA	WC	S	
C06-A4	Conductor type, material, size and insulation verified	NA	WC	S	
C06-A5	Conductor laid properly and protected where required	NA	WC	S	
C06-B	Testing	EFR 11G	WC	W/R	
C06-C	Final documentation review	EFR 11G	P	R	
C07	CABLES CONNECTION				

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ELECTRICAL INSTALLATION
CATHODIC PROTECTION SYSTEM

QUALITY CONTROL ACTIVITIES



Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C07-A	Connection				
C07-A1	Connection location as per drawings	NA	WC	S	
C07-A2	Coating, mill scale, oxide, grease, and dirt remove from welding area	NA	WC	S	
C07-A3	Thermite brazing properly done	NA	WC	S	
C07-A4	Thermite brazing connection check (tapping)	NA	WC	S	
C07-A5	Coating repair properly done	NA	WC	S	
C07-A6	Cable gland size correct (JB side)	NA	WC	S	
C07-A7	Conductor properly tied and/or clamped (JB side)	NA	WC	S	
C07-A8	Wires properly identified (JB side)	NA	WC	S	
C07-B	Testing	EFR 11H	WC	W/R	
C07-C	Final documentation review	EFR 11H	P	R	

NOTES:



(1) A copy of the document will be delivered to Owner for information.



GENERAL NOTES

- THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THE JOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN- CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.
- CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.



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		CLIENT	INDIAN OIL CORPORATION LIMITED		
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 TechnipFMC	 IndianOil	PROJECT:				
		OWNER:				
QUALITY CONTROL FORM		EFR 11A		PROJ. No.:	QCF REV.	SH. 1 OF 2
CATHODIC PROTECTION SYSTEM TRANSFORMER RECTIFIER MECHANICAL INSTALLATION, ELECTRICAL INSTALLATION & TESTS - SUMMARY REPORT				CONTRACTOR:		EFR 11A N° ____
GENERAL DATA						
Location / area:		System / subsystem:			Date (dd/mm/yy):	
Rectifier tag:		Manufacturer / Type:			Serial no.:	
AC input:	Current:	A	Voltage:	V	Phases:	Frequency: Hz
DC output:	Current:	A	Voltage:	V	Shunt size:	mV A
INSPECTIONS (Ref. to QCP 1670.01)		N.A.	ACC.	REPORT / REFERENCE	INSPECTOR SIGNATURE & DATE	
					CONTRACT.	TECHNIP OWNER
A - Transportation and alignment						
A1.	Compliance of equipment rating and nameplate with documentation	<input type="checkbox"/>	<input type="checkbox"/>			
A2.	No indication of rough handling	<input type="checkbox"/>	<input type="checkbox"/>			
A3.	All shipping bracings removed	<input type="checkbox"/>	<input type="checkbox"/>			
A4.	Required area and equipment clearances	<input type="checkbox"/>	<input type="checkbox"/>			
A5.	Transformer rectifier correctly aligned and levelled	<input type="checkbox"/>	<input type="checkbox"/>			
B - Mechanical installation						
B1.	Transformer rectifier correctly anchored on its foundation	<input type="checkbox"/>	<input type="checkbox"/>			
B2.	No missing hardware and accessory components not damaged	<input type="checkbox"/>	<input type="checkbox"/>			
B3.	Doors tightly sealed and aligned	<input type="checkbox"/>	<input type="checkbox"/>			
B4.	Nameplates	<input type="checkbox"/>	<input type="checkbox"/>			
B5.	Insulating liquid filling and level check	<input type="checkbox"/>	<input type="checkbox"/>			
B6.	Oil treatment (only where applicable)	<input type="checkbox"/>	<input type="checkbox"/>			
B7.	Operability of all valves (drain, sample, etc) and flange gaskets conditions	<input type="checkbox"/>	<input type="checkbox"/>			
C - Electrical installation						
C1.	Earthing connections done	<input type="checkbox"/>	<input type="checkbox"/>			
C2.	Correct tap settings	<input type="checkbox"/>	<input type="checkbox"/>			
C3.	Internal wiring checked and meggered	<input type="checkbox"/>	<input type="checkbox"/>			
C4.	Correct operation of protective devices and their alarm and trip circuits	<input type="checkbox"/>	<input type="checkbox"/>			
C5.	Correct operation of metering instruments and lamps	<input type="checkbox"/>	<input type="checkbox"/>			
D - Testing						
INSULATION TEST (MEGGER)						
Megger manuf.:		Type:		Calibration date:	Recalibration date:	
Primary to ground		Test performed at V DC for min		Value	Pass	Fail
		Acceptance criteria: I. R. > MΩ		MΩ	<input type="checkbox"/>	<input type="checkbox"/>
TEST READINGS						
First energization date (dd/mm/yy):						
Rectifier AC voltage setting		Rectifier DC output		Date (dd/mm/yy)	Contractor signature	Remarks
Coarse	Fine	Volts	Amps			

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 TechnipFMC	 IndianOil	PROJECT:				
		OWNER:				
QUALITY CONTROL FORM		EFR 11C		PROJ. No.:	QCF REV.	SH. 1 OF 1
CATHODIC PROTECTION SYSTEM ANODES INSTALLATION AND CONNECTION SUMMARY REPORT		CONTRACTOR:			EFR 11C N° ____	
GENERAL DATA						
Tag:		Location / area:		System / subsystem:		Date (dd/mm/yy):
ANODES INSTALLATION INSPECTION						
Location:		Anode reference number:		Reference drawing:		
Anode type:		Anode material:		Anode weight: ____ kg		
Anode length: ____ m		Anode diameter: ____ cm		<input type="checkbox"/> Zinc grounding cell		
INSPECTIONS (Ref. to QCP 1670.01)		N.A.	ACC.	REPORT / REFERENCE	INSPECTOR SIGNATURE & DATE	
					CONTRACT.	TECHNIP
						OWNER
A – Installation						
A1.	Location as per drawings	<input type="checkbox"/>	<input type="checkbox"/>			
A2.	Surface / bed preparation (ribbon/mesh anodes)	<input type="checkbox"/>	<input type="checkbox"/>			
A3.	Burial depth ____ m	<input type="checkbox"/>	<input type="checkbox"/>			
A4.	Distance from nearest pipe ____ m	<input type="checkbox"/>	<input type="checkbox"/>			
A5.	Interdistance (ribbon/mesh anodes)	<input type="checkbox"/>	<input type="checkbox"/>			
A6.	Backfilling	<input type="checkbox"/>	<input type="checkbox"/>			
A7.	Conduits correctly sized	<input type="checkbox"/>	<input type="checkbox"/>			
A8.	Cable tail continuity verified	<input type="checkbox"/>	<input type="checkbox"/>			
A9.	Cables connected and tagged at both ends	<input type="checkbox"/>	<input type="checkbox"/>			
A10.	Vent pipe installed (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>			
B - Tests and final inspection						
B1.	Anode resistance ____ Ω	<input type="checkbox"/>	<input type="checkbox"/>			
B2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>			
Note: A key plan showing the location of the anodes shall be attached to this form.						
REMARKS :						
C- Final Doc. Review	INSPECTORS	CONTRACTOR		TECHNIP	OWNER	
	NAME					
	SIGNATURE					
	DATE					

		PROJECT:	
		OWNER:	
QUALITY CONTROL FORM EFR 11F		PROJ. No.:	QCF REV. SH. 1 OF 1
CATHODIC PROTECTION SYSTEM JUNCTION BOXES INSTALLATION SUMMARY REPORT		CONTRACTOR:	EFR 11F N° ____

GENERAL DATA			
Tag:	Location / area:	System / subsystem:	Date (dd/mm/yy):
Is the equipment installed in hazardous area? <input type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", the fields marked with an (*) must be filled in)			
(*) Area classification acc. to IEC 60079-10-1 and IEC 60079-10-2: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> Mixed			
(*) Gas group: <input type="checkbox"/> IIA <input type="checkbox"/> IIB <input type="checkbox"/> IIC		(*) Temp. class: <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> T5 <input type="checkbox"/> T6	
MAIN JUNCTION BOX			
Manufacturer:	Model:	Size:	Quantity installed: n.
(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx- II T	
ASSOCIATED CABLE GLANDS			
Type:	Material:	Size:	Quantity installed: n.
(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx- II T	



INSPECTIONS (Ref. to QCP 1670.01)	N.A.	ACC.	REPORT / REFERENCE	INSPECTOR SIGNATURE & DATE		
				CONTRACT.	TECHNIP	OWNER
A – Installation						
A1. Layout and mounting correct	<input type="checkbox"/>	<input type="checkbox"/>				
A2. Cover not damaged	<input type="checkbox"/>	<input type="checkbox"/>				
A3. Internal wirings connected	<input type="checkbox"/>	<input type="checkbox"/>				
A4. Labeling check	<input type="checkbox"/>	<input type="checkbox"/>				
A5. Grounding connections done	<input type="checkbox"/>	<input type="checkbox"/>				
B - Tests and final inspection						
B1. (*) Apparatus is appropriate to area classification	<input type="checkbox"/>	<input type="checkbox"/>				
B2. (*) Apparatus group and temperature class is correct	<input type="checkbox"/>	<input type="checkbox"/>				
B3. (*) Apparatus circuit identification available and correct	<input type="checkbox"/>	<input type="checkbox"/>				
B4. (*) There are no unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>				
B5. (*) There are no visible unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>				
B6. (*) Bolts and cable entry devices are of the correct type	<input type="checkbox"/>	<input type="checkbox"/>				
B7. (*) Bolts and cable entry devices are tightened	<input type="checkbox"/>	<input type="checkbox"/>				
B8. (*) Flange faces are clean and undamaged (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>				
B9. (*) Flange gap are within max values permitted (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>				
B10. (*) Main and auxiliary electrical connections are tight	<input type="checkbox"/>	<input type="checkbox"/>				
B11. (*) Enclosure gaskets condition is satisfactory (Note 2)	<input type="checkbox"/>	<input type="checkbox"/>				
B12. (*) Enclosure clearance is sufficient (Note 3)	<input type="checkbox"/>	<input type="checkbox"/>				
B13. (*) Breathing and draining devices satisfactory (Note 3)	<input type="checkbox"/>	<input type="checkbox"/>				

Note 1: EEx-d equipment only. Note 2: Does not apply to EEx-d and EEx-p equipment.
 Note 3: Does not apply to EEx-p equipment.



Note: A key plan showing the location of the junction boxes shall be attached to this form.

REMARKS :				
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C- Final Doc. Review	INSPECTORS	CONTRACTOR	TECHNIP	OWNER
	NAME			
	SIGNATURE			
	DATE			

				PROJECT:										
				OWNER:										
QUALITY CONTROL FORM		EFR 11G		PROJ. No.:	QCF REV.	SH. 1 OF 1								
CATHODIC PROTECTION SYSTEM CABLES INSTALLATION SUMMARY REPORT				CONTRACTOR:		EFR 11G N° _____								
GENERAL DATA														
Tag:		Location / area:		System / subsystem:		Date (dd/mm/yy):								
Cable insulation		<input type="checkbox"/> HMWPE <input type="checkbox"/>		Ref. drawing:										
Conductor section:		Conductor length:												
<table border="1"><tr><td>1</td><td>2</td></tr><tr><td>3</td><td>4</td></tr></table>		1	2	3	4	<table border="1"><tr><td>1</td><td>2</td></tr><tr><td>3</td><td>4</td></tr></table>		1	2	3	4			
1	2													
3	4													
1	2													
3	4													
INSPECTIONS (Ref. to QCP 1670.01)		N.A.	ACC.	REPORT / REFERENCE	INSPECTOR SIGNATURE & DATE									
					CONTRACT.	TECHNIP								
						OWNER								
A – Installation														
A1.	Trench/duct characteristics, location, burial depth and installation check	<input type="checkbox"/>	<input type="checkbox"/>											
A2.	Routing acc. to drawings and check of interference with other buried systems	<input type="checkbox"/>	<input type="checkbox"/>											
A3.	Check if the material is damaged and its conformance to specification, drawings	<input type="checkbox"/>	<input type="checkbox"/>											
A4.	Conductor type, material, size and insulation verified	<input type="checkbox"/>	<input type="checkbox"/>											
A5.	Conductor laid properly and protected where required	<input type="checkbox"/>	<input type="checkbox"/>											
B – Testing		<input type="checkbox"/>	<input type="checkbox"/>											
CATHODIC PROTECTION CABLE TESTING														
Tester manufacturer:		Type:		Calibration date:		Recalibration date:								
Megger manufacturer:		Type:		Calibration date:		Recalibration date:								
Test voltage and time:		_____ kVDC for _____ min		Acceptance criteria:		I. R. > _____ MΩ								
Cable	Cable tag	From point	To point	Continuity		Meggering								
1				<input type="checkbox"/> Pass <input type="checkbox"/> Fail		<input type="checkbox"/> Pass <input type="checkbox"/> Fail								
2				<input type="checkbox"/> Pass <input type="checkbox"/> Fail		<input type="checkbox"/> Pass <input type="checkbox"/> Fail								
3				<input type="checkbox"/> Pass <input type="checkbox"/> Fail		<input type="checkbox"/> Pass <input type="checkbox"/> Fail								
4				<input type="checkbox"/> Pass <input type="checkbox"/> Fail		<input type="checkbox"/> Pass <input type="checkbox"/> Fail								
5				<input type="checkbox"/> Pass <input type="checkbox"/> Fail		<input type="checkbox"/> Pass <input type="checkbox"/> Fail								
6				<input type="checkbox"/> Pass <input type="checkbox"/> Fail		<input type="checkbox"/> Pass <input type="checkbox"/> Fail								
7				<input type="checkbox"/> Pass <input type="checkbox"/> Fail		<input type="checkbox"/> Pass <input type="checkbox"/> Fail								
8				<input type="checkbox"/> Pass <input type="checkbox"/> Fail		<input type="checkbox"/> Pass <input type="checkbox"/> Fail								
9				<input type="checkbox"/> Pass <input type="checkbox"/> Fail		<input type="checkbox"/> Pass <input type="checkbox"/> Fail								
10				<input type="checkbox"/> Pass <input type="checkbox"/> Fail		<input type="checkbox"/> Pass <input type="checkbox"/> Fail								
11				<input type="checkbox"/> Pass <input type="checkbox"/> Fail		<input type="checkbox"/> Pass <input type="checkbox"/> Fail								
12				<input type="checkbox"/> Pass <input type="checkbox"/> Fail		<input type="checkbox"/> Pass <input type="checkbox"/> Fail								
13				<input type="checkbox"/> Pass <input type="checkbox"/> Fail		<input type="checkbox"/> Pass <input type="checkbox"/> Fail								
14				<input type="checkbox"/> Pass <input type="checkbox"/> Fail		<input type="checkbox"/> Pass <input type="checkbox"/> Fail								
15				<input type="checkbox"/> Pass <input type="checkbox"/> Fail		<input type="checkbox"/> Pass <input type="checkbox"/> Fail								
Note: A key plan showing the location of the numbered cables and points shall be attached to this form.														
REMARKS :														
C- Final Doc. Review	INSPECTORS		CONTRACTOR		TECHNIP									
	NAME													
	SIGNATURE													
	DATE													
						OWNER								

		PROJECT:									
		OWNER:									
QUALITY CONTROL FORM EFR 11H		PROJ. No.:	QCF REV.								
CATHODIC PROTECTION SYSTEM CABLES CONNECTION SUMMARY REPORT		CONTRACTOR:									
		EFR 11H N° ____									
GENERAL DATA											
Location / area:		System / subsystem:									
Date (dd/mm/yy):											
Cable insulation		<input type="checkbox"/> HMWPE <input type="checkbox"/> _____									
Ref. drawing:											
Conductor section:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td>1</td><td>2</td></tr> <tr><td>3</td><td>4</td></tr> </table>	1	2	3	4	No. of connections:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td>1</td><td>2</td></tr> <tr><td>3</td><td>4</td></tr> </table>	1	2	3	4
1	2										
3	4										
1	2										
3	4										
INSPECTIONS (Ref. to QCP 1670.01)		N.A.	ACC.								
REPORT / REFERENCE		INSPECTOR SIGNATURE & DATE									
		CONTRACT.	TECHNIP								
		OWNER									
A – Connection											
A1.	Connection location as per drawings	<input type="checkbox"/>	<input type="checkbox"/>								
A2.	Coating, mill scale, oxide, grease, and dirt remove from welding area	<input type="checkbox"/>	<input type="checkbox"/>								
A3.	Thermite brazing properly done	<input type="checkbox"/>	<input type="checkbox"/>								
A4.	Thermite brazing connection check (tapping)	<input type="checkbox"/>	<input type="checkbox"/>								
A5.	Coating repair properly done	<input type="checkbox"/>	<input type="checkbox"/>								
A6.	Cable gland size correct (JB side)	<input type="checkbox"/>	<input type="checkbox"/>								
A7.	Conductor properly tied and/or clamped (JB side)	<input type="checkbox"/>	<input type="checkbox"/>								
A8.	Wires properly identified (JB side)	<input type="checkbox"/>	<input type="checkbox"/>								
B – Testing		<input type="checkbox"/>	<input type="checkbox"/>								
CATHODIC PROTECTION CABLE CONNECTION CHECK											
Cable	Tag	Connection		Cable	Tag	Connection					
		From	To			From	To				
1		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	9		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok				
2		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	10		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok				
3		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	11		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok				
4		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	12		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok				
5		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	13		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok				
6		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	14		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok				
7		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	15		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok				
8		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	16		<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok	<input type="checkbox"/> Ok <input type="checkbox"/> Not Ok				
Note: A key plan showing the location of the numbered cables and points shall be attached to this form.											
REMARKS :											
C. Final Doc. Review	INSPECTORS		CONTRACTOR		TECHNIP		OWNER				
	NAME										
	SIGNATURE										
	DATE										

		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
		CLIENT	INDIAN OIL CORPORATION LIMITED		
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QUALITY CONTROL PLAN

ELECTRICAL INSTALLATION LIGHTING SYSTEM





TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
EFR 12A	Lighting System - Local Distribution Panel Installation Summary Report
EFR 12B	Lighting System - Local Distribution Panel Functional Test
EFR 12C	Lighting System - Lighting Main Junction Box Installation Summary Report
EFR 12D	Lighting System - Lighting Fixture Installation Summary Report
EFR 12E	Lighting System - Street Lighting Pole Installation Summary Report
EFR 12F	Lighting System - Lighting Tower Installation Summary Report
EFR 12G	Lighting System - Receptacle Outlet Installation Summary Report
EFR 12H	Lighting System - Level Gauge Lighting Installation Summary Report
EFR 12I	Lighting System - Aircraft Warning Lighting System Installation Summary Report

REFERENCE DOCUMENTS:



- 080557C-000-PP-805
 - 080557C-000-JSD-1600-003
 - DRAWINGS
- SITE COORDINATION & COMMUNICATION PROCEDURE.
SPECIFICATIONS FOR FIELD ELECTRICAL INSTALLATION,
TESTING, PRE-COMMISSIONING AND COMMISSIONING

LEGENDA

H	=	HOLD (RFI required - Work stop for inspection)
W	=	WITNESS (RFI required)
WC	=	100 % SUPERVISION AND EXAMINATION BY CONTRACTOR.
P	=	PREPARATION.
S	=	SURVEILLANCE (No RFI)
R	=	REVIEW OF REPORTS
N.A.	=	NOT APPLICABLE
A	=	AUTHORIZATION / APPROVAL
IFA	=	ISSUED FOR AUTHORIZATION/APPROVAL
INFO	=	FOR INFORMATION
!	=	WARNING (control of document revision status)

			 Written By balamurugan.s@technipfmc.com 2019.11.19 17:13:50 +05'30'	 Checked By Alakappa L. 2019.11.21 11:03:06 +05'30'	 Approved By Alakappa L. 2019.11.21 11:03:26 +05'30'	 Authorized By Monochristopher Jeumarina 2019.11.29 14:43:33 +05'30'
0	19.11.2019	ISSUED FOR IMPLEMENTATION	TB	PKP / LA	LA	JMC
REV.	DATE	STATUS	WRITTEN BY	CHECKED BY	APPROVED BY	AUTHOR. BY
DOCUMENT REVISIONS						

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		CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP- ELECTRICAL INSTALLATION LIGHTING SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1680-001		Rev. No. 0	Page 2 of 9



QUALITY CONTROL PLAN

ELECTRICAL INSTALLATION LIGHTING SYSTEM

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
A	PRELIMINARY ACTIVITIES				
A1	CHECK OF CONTRACTOR DRAWINGS REVISION STATUS	NA	!	!	
A2	CONTRACTOR TECHNICAL SPECIFICATION AND PROCEDURE	NA	P	R/A	
A3	CONTRACTOR'S METHOD OF STATEMENT (IF REQUIRED)	NA	P	R/A	(1)
B	MATERIALS - BEFORE AND AFTER INSTALLATION				
B1	IDENTIFICATION AND PRESERVATION STATUS	NA	W/C	W/R	
C01	LOCAL DISTRIBUTION PANEL INSTALLATION				
C01-A	Prefabrication of supports				
C01-A1	Supports prefabricated and painted	NA	W/C	W/R	
C01-B	Installation of supports				
C01-B1	Supports installed properly	NA	W/C	W/R	
C01-B2	Installation & layout as per approved drawings	NA	W/C	R	
C01-B3	Cold galvanizing touch-up paint applied	NA	W/C	S	
C01-C	Installation of panel board				
C01-C1	Mounting & location as per drawings	NA	W/C	R	
C01-C2	Alignment and levelling	NA	W/C	S	
C01-C3	Internal wiring meggered and color code & tags checked	NA	W/C	S	
C01-C4	Cables supported properly	NA	W/C	R	
C01-C5	Accessories complete and spare holes plugged	NA	W/C	S	
C01-C6	Breaker ratings & sizes verified	NA	W/C	W/R	
C01-C7	Main and auxiliary electrical connections are tight	NA	W/C	W/R	
C01-C8	There are no unauthorized modifications	NA	W/C	W/R	
C01-C9	There are no visible unauthorized modifications	NA	W/C	W/R	
C01-C10	Bolts and cable entry devices are of the correct type	NA	W/C	W/R	
C01-C11	Bolts and cable entry devices are tightened	NA	W/C	W/R	
C01-C12	Apparatus is appropriate to area classification	NA	W/C	W/R	
C01-C13	Apparatus group and temperature class is correct	NA	W/C	W/R	
C01-C14	Apparatus circuit identification available and correct	NA	W/C	W/R	
C01-C15	Flange faces are clean and undamaged	NA	W/C	W/R	
C01-C16	Flange gap are within max values permitted	NA	W/C	W/R	
C01-C17	Enclosure gaskets condition is satisfactory	NA	W/C	W/R	
C01-C18	Enclosed-break devices undamaged	NA	W/C	W/R	
C01-C19	Hermetically sealed devices undamaged	NA	W/C	W/R	

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<div></div> <div></div>		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
		CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP- ELECTRICAL INSTALLATION LIGHTING SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1680-001		Rev. No. 0	Page 3 of 9

QUALITY CONTROL PLAN



ELECTRICAL INSTALLATION LIGHTING SYSTEM

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C01-C20	Restricted breathing enclosure satisfactory	NA	W/C	W/R	
C01-C21	Fans / enclosure clearance is sufficient	NA	W/C	W/R	
C01-C22	Breathing and draining devices satisfactory	NA	W/C	W/R	
C01-D	Final inspection	EFR 12A	W/C	W/R	
C01-D1	Grounding system	NA	W/C	W/R	
C01-D2	Functional testing done	EFR 12B	W/C	W/R	
C01-D3	Final visual inspection	NA	W/C	W/R	
C01-D4	As-built marked up copy updated and available	NA	P	R	
C01-E	Final documentation review	EFR 12A	P	R	
C02	LIGHTING MAIN JUNCTION BOX INSTALLATION				
C02-A	Prefabrication of supports				
C02-A1	Supports prefabricated and painted	NA	W/C	S	
C02-B	Installation of supports				
C02-B1	Supports installed properly	NA	W/C	R	
C02-B2	Installation & layout as per approved drawings	NA	W/C	R	
C02-C	Installation of junction box				
C02-C1	Mounting & location as per drawings	NA	W/C	R	
C02-C2	Alignment and levelling	NA	W/C	S	
C02-C3	Internal wiring and terminals connected	NA	W/C	W/R	
C02-C4	Cables supported properly	NA	W/C	S	
C02-C5	Accessories complete and spare holes plugged	NA	W/C	W/R	
C02-C6	Nameplate and grounding connections	NA	W/C	W/R	
C02-C7	Main and auxiliary electrical connections are tight	NA	W/C	W/R	
C02-C8	There are no unauthorized modifications	NA	W/C	W/R	
C02-C9	There are no visible unauthorized modifications	NA	W/C	W/R	
C02-C10	Bolts and cable entry devices are of the correct type	NA	W/C	W/R	
C02-C11	Bolts and cable entry devices are tightened	NA	W/C	W/R	
C02-C12	Apparatus is appropriate to area classification	NA	W/C	W/R	
C02-C13	Apparatus group and temperature class is correct	NA	W/C	W/R	
C02-C14	Apparatus circuit identification available and correct	NA	W/C	W/R	
C02-C15	Flange faces are clean and undamaged	NA	W/C	W/R	
C02-C16	Flange gap are within max values permitted	NA	W/C	W/R	
C02-C17	Enclosure gaskets condition is satisfactory	NA	W/C	W/R	
C02-C18	Enclosed-break devices undamaged	NA	W/C	W/R	

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		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
		CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP- ELECTRICAL INSTALLATION LIGHTING SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1680-001		Rev. No. 0	Page 4 of 9

QUALITY CONTROL PLAN



ELECTRICAL INSTALLATION LIGHTING SYSTEM

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C02-C19	Hermetically sealed devices undamaged	NA	W/C	W/R	
C02-C20	Restricted breathing enclosure satisfactory	NA	W/C	W/R	
C02-C21	Enclosure clearance is sufficient	NA	W/C	W/R	
C02-C22	Breathing and draining devices satisfactory	NA	W/C	W/R	
C02-D	Final inspection	EFR 12C	W/C	W/R	
C02-D1	Final visual inspection	NA	W/C	W/R	
C02-D2	As-built marked up copy updated and available	NA	W/C	W/R	
C02-D3	Cold galvanizing touch-up paint applied	NA	W/C	W/R	
C02-E	Final documentation review	EFR 12C	P	R	
C03	LIGHTING FIXTURE INSTALLATION				
C03-A	Installation of supports				
C03-A1	Supports prefabricated and painted	NA	W/C	S	
C03-B	Installation of fixture and associated junction box				
C03-B1	Mounting & location as per drawings	NA	W/C	R	
C03-B2	Height, alignment and levelling	NA	W/C	W/R	
C03-B3	Maintenance accessibility	NA	W/C	W/R	
C03-B4	No interference to access ways	NA	W/C	W/R	
C03-B5	Accessories complete and spare holes plugged	NA	W/C	W/R	
C03-B6	Fixture stability	NA	W/C	W/R	
C03-B7	There are no unauthorized modifications	NA	W/C	W/R	
C03-B8	There are no visible unauthorized modifications	NA	W/C	W/R	
C03-B9	Bolts and cable entry devices are of the correct type	NA	W/C	W/R	
C03-B10	Bolts and cable entry devices are tightened	NA	W/C	W/R	
C03-B11	Apparatus is appropriate to area classification	NA	W/C	W/R	
C03-B12	Apparatus group and temperature class is correct	NA	W/C	W/R	
C03-B13	Apparatus circuit identification available and correct	NA	W/C	W/R	
C03-B14	Flange faces are clean and undamaged	NA	W/C	W/R	
C03-B15	Flange gap are within max values permitted	NA	W/C	W/R	
C03-B16	Enclosure gaskets condition is satisfactory	NA	W/C	W/R	
C03-B17	Enclosed-break devices undamaged	NA	W/C	W/R	
C03-B18	Hermetically sealed devices undamaged	NA	W/C	W/R	
C03-B19	Restricted breathing enclosure satisfactory	NA	W/C	W/R	
C03-B20	Enclosure clearance is sufficient	NA	W/C	W/R	
C03-B21	Breathing and draining devices satisfactory	NA	W/C	W/R	

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		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
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QCP- ELECTRICAL INSTALLATION LIGHTING SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1680-001		Rev. No. 0	Page 5 of 9

QUALITY CONTROL PLAN


ELECTRICAL INSTALLATION LIGHTING SYSTEM

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C03-C	Cable way and wiring				
C03-C1	Conduit and cable tray installed properly	NA	W/C	W/R	
C03-C2	Wires and cables installation	NA	W/C	W/R	
C03-C3	Fixture wiring, glanding and cabling	NA	W/C	W/R	
C03-C4	Grounding and tagging	NA	W/C	W/R	
C03-D	Final inspection	EFR 12D	W/C	W/R	
C03-D1	Final visual inspection	NA	W/C	W/R	
C03-D2	As-built marked up copy updated and available	NA	P	R	
C03-D3	Cold galvanizing touch-up paint applied	NA	W/C	W/R	
C03-E	Final documentation review	EFR 12D	P	R	
C04	STREET LIGHTING POLE INSTALLATION				
C04-A	Mast installation				
C04-A1	Concrete base / Foundation dimensional check according to drawings	NA	W/C	R	
C04-A2	Anchor bolts size and connection elements completeness checked	NA	W/C	W/R	
C04-A3	Alignment and levelling correct	NA	W/C	W/R	
C04-A4	No splitting or cracking on section splices	NA	W/C	W/R	
C04-A5	Completeness of mechanical and electrical accessories	NA	W/C	W/R	
C04-B	Lamp installation and wiring				
C04-B1	Cable entries clear and grounding connections done	NA	W/C	W/R	
C04-B2	Fixture installed and wired properly	NA	W/C	W/R	
C04-C	Final inspection	EFR 12E	W/C	W/R	
C04-C1	Ground clearance	NA	W/C	W/R	
C04-C2	Verticality and luminaire orientation as required	NA	W/C	W/R	
C04-C3	Lighting fixture functionality	NA	W/C	W/R	
C04-C4	As-built marked up copy updated and available	NA	P	R	
C04-D	Final documentation review	EFR 12E	P	R	
C05	LIGHTING TOWER INSTALLATION				
C05-A	Mast and crown installation				
C05-A1	Concrete base / Foundation dimensional check according to drawings	NA	W/C	R	
C05-A2	Anchor bolts size and connection elements completeness checked	NA	W/C	W/R	
C05-A3	Alignment and levelling correct	NA	W/C	W/R	
C05-A4	No splitting or cracking on section splices	NA	W/C	W/R	
C05-A5	Completeness of mechanical and electrical accessories	NA	W/C	W/R	
C05-A6	Crown and winch installed properly	NA	W/C	W/R	

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		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
		CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP- ELECTRICAL INSTALLATION LIGHTING SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1680-001		Rev. No. 0	Page 6 of 9

QUALITY CONTROL PLAN



ELECTRICAL INSTALLATION LIGHTING SYSTEM

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C05-A7	Braking system installed properly	NA	W/C	W/R	
C05-B	Lamp installation and wiring				
C05-B1	Cable entries clear and grounding connections done	NA	W/C	W/R	
C05-B2	Fixture installed and wired properly	NA	W/C	W/R	
C05-C	Final inspection	EFR 12F	W/C	W/R	
C05-C1	Ground clearance	NA	W/C	W/R	
C05-C2	Verticality and luminaire orientation as required	NA	W/C	W/R	
C05-C3	Lighting fixture functionality	NA	W/C	W/R	
C05-C4	Winch operation and braking system checked	NA	W/C	W/R	
C05-C5	As-built marked up copy updated and available	NA	P	R	
C05-D	Final documentation review	EFR 12F	P	R	
C06	RECEPTACLE OUTLET INSTALLATION				
C06-A	Installation of supports				
C06-A1	Supports prefabricated and painted	NA	W/C	S	
C06-A2	Cold galvanizing touch-up paint applied	NA	W/C	W/R	
C06-B	Installation of receptacle				
C06-B1	Mounting & location as per drawings	NA	W/C	R	
C06-B2	Height, alignment and levelling	NA	W/C	W/R	
C06-B3	Maintenance accessibility	NA	W/C	W/R	
C06-B4	No interference to access ways	NA	W/C	W/R	
C06-B5	Accessories complete and spare holes plugged	NA	W/C	W/R	
C06-B6	Outlet stability	NA	W/C	W/R	
C06-B7	There are no unauthorized modifications	NA	W/C	W/R	
C06-B8	There are no visible unauthorized modifications	NA	W/C	W/R	
C06-B9	Bolts and cable entry devices are of the correct type	NA	W/C	W/R	
C06-B10	Bolts and cable entry devices are tightened	NA	W/C	W/R	
C06-B11	Apparatus is appropriate to area classification	NA	W/C	W/R	
C06-B12	Apparatus group and temperature class is correct	NA	W/C	W/R	
C06-B13	Apparatus circuit identification available and correct	NA	W/C	W/R	
C06-B14	Flange faces are clean and undamaged	NA	W/C	W/R	
C06-B15	Flange gap are within max values permitted	NA	W/C	W/R	
C06-B16	Enclosure gaskets condition is satisfactory	NA	W/C	W/R	
C06-B17	Enclosed-break devices undamaged	NA	W/C	W/R	
C06-B18	Hermetically sealed devices undamaged	NA	W/C	W/R	
C06-B19	Restricted breathing enclosure satisfactory	NA	W/C	W/R	

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		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
		CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP- ELECTRICAL INSTALLATION LIGHTING SYSTEM	Project No. 080557C001	Document No. 080557C-000-QCP-1680-001		Rev. No. 0	Page 7 of 9

QUALITY CONTROL PLAN



ELECTRICAL INSTALLATION LIGHTING SYSTEM

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C06-B20	Enclosure clearance is sufficient	NA	W/C	W/R	
C06-B21	Breathing and draining devices satisfactory	NA	W/C	W/R	
C06-C	Cable way and wiring				
C06-C1	Conduit and cable tray installed properly	NA	W/C	W/R	
C06-C2	Wires and cables installation	NA	W/C	W/R	
C06-C3	Outlet wiring, glanding and cabling	NA	W/C	W/R	
C06-C4	Grounding and tagging	NA	W/C	W/R	
C06-D	Final inspection	EFR 12G	W/C	W/R	
C06-D1	Disconnect switch operation	NA	W/C	W/R	
C06-D2	Plug insertion and interlock	NA	W/C	W/R	
C06-D3	Final visual inspection	NA	W/C	W/R	
C06-D4	As-built marked up copy updated and available	NA	P	R	
C06-E	Final documentation review	EFR 12G	P	R	
C07	LEVEL GAUGE LIGHTING INSTALLATION				
C07-A	Installation				
C07-A1	Mounting & location as per drawings	NA	W/C	R	
C07-A2	Height, alignment and levelling	NA	W/C	W/R	
C07-A3	Maintenance accessibility	NA	W/C	W/R	
C07-A4	No interference to access ways	NA	W/C	W/R	
C07-A5	Accessories complete and spare holes plugged	NA	W/C	W/R	
C07-A6	Illuminator stability	NA	W/C	W/R	
C07-A7	There are no unauthorized modifications	NA	W/C	W/R	
C07-A8	There are no visible unauthorized modifications	NA	W/C	W/R	
C07-A9	Bolts and cable entry devices are of the correct type	NA	W/C	W/R	
C07-A10	Bolts and cable entry devices are tightened	NA	W/C	W/R	
C07-A11	Apparatus is appropriate to area classification	NA	W/C	W/R	
C07-A12	Apparatus group and temperature class is correct	NA	W/C	W/R	
C07-A13	Apparatus circuit identification available and correct	NA	W/C	W/R	
C07-A14	Flange faces are clean and undamaged	NA	W/C	W/R	
C07-A15	Flange gap are within max values permitted	NA	W/C	W/R	
C07-A16	Enclosure gaskets condition is satisfactory	NA	W/C	W/R	
C07-A17	Enclosed-break devices undamaged	NA	W/C	W/R	
C07-A18	Hermetically sealed devices undamaged	NA	W/C	W/R	
C07-A19	Restricted breathing enclosure satisfactory	NA	W/C	W/R	

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		CLIENT	INDIAN OIL CORPORATION LIMITED		
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QUALITY CONTROL PLAN



ELECTRICAL INSTALLATION LIGHTING SYSTEM

QUALITY CONTROL ACTIVITIES

S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C07-A20	Enclosure clearance is sufficient	NA	W/C	W/R	
C07-A21	Breathing and draining devices satisfactory	NA	W/C	W/R	
C07-B	Cable way and wiring				
C07-B1	Conduit and cable tray installed properly	NA	W/C	W/R	
C07-B2	Wires and cables installation	NA	W/C	W/R	
C07-B3	Wiring, glanding and cabling	NA	W/C	W/R	
C07-B4	Grounding and tagging	NA	W/C	W/R	
C07-C	Final inspection	EFR 12H	W/C	W/R	
C07-C1	Final visual inspection	NA	W/C	W/R	
C07-C2	As-built marked up copy updated and available	NA	P	R	
C07-D	Final documentation review	EFR 12H	P	R	
C08	AIRCRAFT WARNING LIGHTING SYSTEM INSTALLATION				
C08-A	Installation of supports				
C08-A1	Supports prefabricated and painted	NA	W/C	S	
C08-B	Installation of panels and beacons				
C08-B1	Mounting & location as per drawings	NA	W/C	R	
C08-B2	Height, alignment and levelling	NA	W/C	R	
C08-B3	Maintenance accessibility	NA	W/C	W/R	
C08-B4	No interference to access ways	NA	W/C	W/R	
C08-B5	Accessories complete and spare holes plugged	NA	W/C	W/R	
C08-B6	Fixture stability	NA	W/C	W/R	
C08-B7	There are no unauthorized modifications	NA	W/C	W/R	
C08-B8	There are no visible unauthorized modifications	NA	W/C	W/R	
C08-B9	Bolts and cable entry devices are of the correct type	NA	W/C	W/R	
C08-B10	Bolts and cable entry devices are tightened	NA	W/C	W/R	
C08-B11	Apparatus is appropriate to area classification	NA	W/C	W/R	
C08-B12	Apparatus group and temperature class is correct	NA	W/C	W/R	
C08-B13	Apparatus circuit identification available and correct	NA	W/C	W/R	
C08-B14	Flange faces are clean and undamaged	NA	W/C	W/R	
C08-B15	Flange gap are within max values permitted	NA	W/C	W/R	
C08-B16	Enclosure gaskets condition is satisfactory	NA	W/C	W/R	
C08-B17	Enclosed-break devices undamaged	NA	W/C	W/R	
C08-B18	Hermetically sealed devices undamaged	NA	W/C	W/R	
C08-B19	Restricted breathing enclosure satisfactory	NA	W/C	W/R	

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		CLIENT	INDIAN OIL CORPORATION LIMITED		
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QUALITY CONTROL PLAN

ELECTRICAL INSTALLATION LIGHTING SYSTEM

QUALITY CONTROL ACTIVITIES



S.NO	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
C08-B20	Enclosure clearance is sufficient	NA	W/C	W/R	
C08-B21	Breathing and draining devices satisfactory	NA	W/C	W/R	
C08-C	Cable way and wiring				
C08-C1	Conduit and cable tray installed properly	NA	W/C	W/R	
C08-C2	Wires and cables installation	NA	W/C	W/R	
C08-C3	Fixture wiring, glanding and cabling	NA	W/C	W/R	
C08-C4	Grounding and tagging	NA	W/C	W/R	
C08-D	Final inspection	EFR 12I	W/C	W/R	
C08-D1	Final visual inspection	NA	W/C	W/R	
C08-D2	Photocell operation	NA	W/C	W/R	
C08-D3	Functional check and control operation	NA	W/C	W/R	
C08-D4	As-built marked up copy updated and available	NA	P	R	
C08-D5	Cold galvanizing touch-up paint applied	NA	W/C	W/R	
C08-E	Final documentation review	EFR 12I	P	R	

NOTES:

- (1) A copy of the document will be delivered to Owner for information.



GENERAL NOTES



- THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THEJOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.
- CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.



 		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 12A		PROJ. No.:	QCF REV.	SH. 1 OF 2
LIGHTING SYSTEM LOCAL DISTRIBUTION PANEL INSTALLATION SUMMARY REPORT		CONTRACTOR:		EFR 12A N° ____
GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
Is the equipment installed in hazardous area? <input type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", the fields marked with an (*) must be filled in)				
(*) Area classification acc. to IEC 60079-10-1 and IEC 60079-10-2: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> Mixed				
(*) Gas group: <input type="checkbox"/> IIA <input type="checkbox"/> IIB <input type="checkbox"/> IIC			(*) Temp. class: <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> T5 <input type="checkbox"/> T6	
EQUIPMENT IDENTIFICATION				
Tag number:		Rated voltage: V		30 mA branch protection: <input type="checkbox"/> Yes <input type="checkbox"/> No
Manufacturer:		Main breaker rating: A		Feeding cable tag:
Serial number:		Number of branch breakers:		Ref. drawing:
(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II __ T __		
ASSOCIATED CABLE GLANDS				
Type:		Material:		Size:
(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II __ T __		
INSPECTIONS (Ref. to QCP 1680.01)		N.A.	ACC.	REPORT / REFERENCE
		INSPECTOR SIGNATURE & DATE		
		CONTRACTOR		
		TECHNIP		
		OWNER		
A - Prefabrication of supports				
A1.	Supports prefabricated and painted	<input type="checkbox"/>	<input type="checkbox"/>	
B - Installation of supports				
B1.	Supports installed properly	<input type="checkbox"/>	<input type="checkbox"/>	
B2.	Installation & layout as per approved drawings	<input type="checkbox"/>	<input type="checkbox"/>	
B3.	Cold galvanizing touch-up paint applied	<input type="checkbox"/>	<input type="checkbox"/>	
C – Installation of panelboard				
C1.	Mounting & location as per drawings	<input type="checkbox"/>	<input type="checkbox"/>	
C2.	Alignment and levelling	<input type="checkbox"/>	<input type="checkbox"/>	
C3.	Internal wiring meggered and color code & tags checked	<input type="checkbox"/>	<input type="checkbox"/>	
C4.	Cables supported properly	<input type="checkbox"/>	<input type="checkbox"/>	
C5.	Accessories complete and spare holes plugged	<input type="checkbox"/>	<input type="checkbox"/>	
C6.	Breaker ratings & sizes verified	<input type="checkbox"/>	<input type="checkbox"/>	
C7.	Main and auxiliary electrical connections are tight	<input type="checkbox"/>	<input type="checkbox"/>	
C8.	There are no unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>	
C9.	There are no visible unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>	
C10.	Bolts and cable entry devices are of the correct type	<input type="checkbox"/>	<input type="checkbox"/>	
C11.	Bolts and cable entry devices are tightened	<input type="checkbox"/>	<input type="checkbox"/>	
C12.	(*) Apparatus is appropriate to area classification	<input type="checkbox"/>	<input type="checkbox"/>	
C13.	(*) Apparatus group and temperature class is correct	<input type="checkbox"/>	<input type="checkbox"/>	
C14.	(*) Apparatus circuit identification available and correct	<input type="checkbox"/>	<input type="checkbox"/>	
C15.	(*) Flange faces are clean and undamaged (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>	
C16.	(*) Flange gap are within max values permitted (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>	



		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 12B		PROJ. No.:	QCF REV.	SH. 1 OF 1
LIGHTING SYSTEM LOCAL DISTRIBUTION PANEL FUNCTIONAL TEST		CONTRACTOR:		EFR 12B N° _____



GENERAL DATA													
Location / area:				System / subsystem:				Date (dd/mm/yy):					
Is the equipment installed in hazardous area? <input type="checkbox"/> Yes <input type="checkbox"/> No													
(*) Area classification acc. to IEC 60079-10-1 and IEC 60079-10-2: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> Mixed													
(*) Gas group: <input type="checkbox"/> IIA <input type="checkbox"/> IIB <input type="checkbox"/> IIC								(*) Temp. class: <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> T5 <input type="checkbox"/> T6					
EQUIPMENT IDENTIFICATION													
Tag number:				Rated voltage: V				30 mA branch protection: <input type="checkbox"/> Yes <input type="checkbox"/> No					
Manufacturer:				Main breaker rating: A				Feeding cable tag:					
Serial number:				Number of branch breakers:				Ref. drawing:					
TESTING													
Multimeter manuf:				Type:				Calibration date:				Recalibration date:	
MAIN BREAKER OPERATION													
#	Tag	Open		Close		Continuity		Aux. contacts			30 mA device op.		
		Pass	Fail	Pass	Fail	Pass	Fail	P	F	NA	P	F	NA
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BRANCH BREAKERS OPERATION													
#	Circuit	Open		Close		Continuity		Aux. contacts			30 mA device op.		
		Pass	Fail	Pass	Fail	Pass	Fail	P	F	NA	P	F	NA
1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CONTROL OPERATION													
Manual mode		Pass	<input type="checkbox"/>	Fail	<input type="checkbox"/>	Auto (photocell) mode			Pass	<input type="checkbox"/>	Fail	<input type="checkbox"/>	
CONTROL UNIT SETTING													
Lux On			Lux Off			Time On			Time Off				
Set	Actual	Pass	Set	Actual	Pass	Set	Actual	Pass	Set	Actual	Pass		
		<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>		
REMARKS :													
INSPECTORS		CONTRACTOR				TECHNIP				OWNER			
NAME													
SIGNATURE													
DATE													



 		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 12C		PROJ. No.:	QCF REV.	SH. 1 OF 2
LIGHTING SYSTEM LIGHTING MAIN JUNCTION BOX INSTALLATION SUMMARY REPORT		CONTRACTOR:		EFR 12C N° _____
GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
Is the equipment installed in hazardous area? <input type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", the fields marked with an (*) must be filled in)				
(*) Area classification acc. to IEC 60079-10-1 and IEC 60079-10-2: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> Mixed				
(*) Gas group: <input type="checkbox"/> IIA <input type="checkbox"/> IIB <input type="checkbox"/> IIC			(*) Temp. class: <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> T5 <input type="checkbox"/> T6	
MAIN JUNCTION BOX				
Manufacturer:		Model:		Size:
Tag N° :		(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T__
ASSOCIATED CABLE GLANDS				
Type:		Material:		Size:
		(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T__
INSPECTIONS (Ref. to QCP 1680.01)		N.A.	ACC.	REPORT / REFERENCE
				INSPECTOR SIGNATURE & DATE
				CONTRACTOR
				TECHNIP
				OWNER
A - Prefabrication of supports				
A1.	Supports prefabricated and painted	<input type="checkbox"/>	<input type="checkbox"/>	
B - Installation of supports				
B1.	Supports installed properly	<input type="checkbox"/>	<input type="checkbox"/>	
B2.	Installation & layout as per approved drawings	<input type="checkbox"/>	<input type="checkbox"/>	
C – Installation of junction box				
C1.	Mounting & location as per drawings	<input type="checkbox"/>	<input type="checkbox"/>	
C2.	Alignment and levelling	<input type="checkbox"/>	<input type="checkbox"/>	
C3.	Internal wiring and terminals connected	<input type="checkbox"/>	<input type="checkbox"/>	
C4.	Cables supported properly	<input type="checkbox"/>	<input type="checkbox"/>	
C5.	Accessories complete and spare holes plugged	<input type="checkbox"/>	<input type="checkbox"/>	
C6.	Nameplate and grounding connections	<input type="checkbox"/>	<input type="checkbox"/>	
C7.	Main and auxiliary electrical connections are tight	<input type="checkbox"/>	<input type="checkbox"/>	
C8.	There are no unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>	
C9.	There are no visible unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>	
C10.	Bolts and cable entry devices are of the correct type	<input type="checkbox"/>	<input type="checkbox"/>	
C11.	Bolts and cable entry devices are tightened	<input type="checkbox"/>	<input type="checkbox"/>	
C12.	(*) Apparatus is appropriate to area classification	<input type="checkbox"/>	<input type="checkbox"/>	
C13.	(*) Apparatus group and temperature class is correct	<input type="checkbox"/>	<input type="checkbox"/>	
C14.	(*) Apparatus circuit identification available and correct	<input type="checkbox"/>	<input type="checkbox"/>	
C15.	(*) Flange faces are clean and undamaged (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>	
C16.	(*) Flange gap are within max values permitted (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>	
C17.	(*) Enclosure gaskets condition is satisfactory (Note 2)	<input type="checkbox"/>	<input type="checkbox"/>	
C18.	(*) Enclosed-break devices undamaged (Note 3)	<input type="checkbox"/>	<input type="checkbox"/>	



 		PROJECT:			
		OWNER:			
QUALITY CONTROL FORM EFR 12D		PROJ. No.:	QCF REV.	SH. 1 OF 2	
LIGHTING SYSTEM LIGHTING FIXTURE INSTALLATION SUMMARY REPORT		CONTRACTOR:		EFR 12D N° ____	
GENERAL DATA					
Tag:	Location / area:	System / subsystem:	Date (dd/mm/yy):		
Is the equipment installed in hazardous area? <input type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", the fields marked with an (*) must be filled in)					
(*) Area classification acc. to IEC 60079-10-1 and IEC 60079-10-2: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> Mixed					
(*) Gas group: <input type="checkbox"/> IIA <input type="checkbox"/> IIB <input type="checkbox"/> IIC			(*) Temp. class: <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> T5 <input type="checkbox"/> T6		
EQUIPMENT IDENTIFICATION					
Fixture type:	<input type="checkbox"/> Fluorescent	<input type="checkbox"/> HPS	<input type="checkbox"/> Incandescent	<input type="checkbox"/> _____	Voltage _____ V Power _____ W
Reference dwg:	Panel / JB tag:		Circuit number:	Progr. n.: from ____ to ____	
Quantity installed:	Pendant	Ceiling	Wall	Stanchion	_____ Total
	(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T__		
ASSOCIATED JUNCTION BOXES					
Manufacturer:	Model:		Size:	Quantity installed: n.	
	(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T__		
ASSOCIATED CABLE GLANDS					
Type:	Material:		Size:	Quantity installed: n.	
	(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T__		
INSPECTIONS (Ref. to QCP 1680.01)		N.A.	ACC.	REPORT / REFERENCE	INSPECTOR SIGNATURE & DATE
					CONTRACTOR TECHNIP OWNER
A – Installation of supports					
A1.	Supports installed properly	<input type="checkbox"/>	<input type="checkbox"/>		
B - Installation of fixture and associated junction box					
B1.	Mounting & location as per drawings	<input type="checkbox"/>	<input type="checkbox"/>		
B2.	Height, alignment and levelling	<input type="checkbox"/>	<input type="checkbox"/>		
B3.	Maintenance accessibility	<input type="checkbox"/>	<input type="checkbox"/>		
B4.	No interference to access ways	<input type="checkbox"/>	<input type="checkbox"/>		
B5.	Accessories complete and spare holes plugged	<input type="checkbox"/>	<input type="checkbox"/>		
B6.	Fixture stability	<input type="checkbox"/>	<input type="checkbox"/>		
B7.	There are no unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>		
B8.	There are no visible unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>		
B9.	Bolts and cable entry devices are of the correct type	<input type="checkbox"/>	<input type="checkbox"/>		
B10.	Bolts and cable entry devices are tightened	<input type="checkbox"/>	<input type="checkbox"/>		
B11.	(*) Apparatus is appropriate to area classification	<input type="checkbox"/>	<input type="checkbox"/>		
B12.	(*) Apparatus group and temperature class is correct	<input type="checkbox"/>	<input type="checkbox"/>		
B13.	(*) Apparatus circuit identification available and correct	<input type="checkbox"/>	<input type="checkbox"/>		
B14.	(*) Flange faces are clean and undamaged (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>		
B15.	(*) Flange gap are within max values permitted (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>		
B16.	(*) Enclosure gaskets condition is satisfactory (Note 2)	<input type="checkbox"/>	<input type="checkbox"/>		
B17.	(*) Enclosed-break devices undamaged (Note 3)	<input type="checkbox"/>	<input type="checkbox"/>		


 		PROJECT:			
		OWNER:			
QUALITY CONTROL FORM EFR 12E		PROJ. No.:	QCF REV.	SH. 1 OF 1	
LIGHTING SYSTEM STREET LIGHTING POLE INSTALLATION SUMMARY REPORT		CONTRACTOR:		EFR 12E N° ____	
GENERAL DATA					
Tag:	Location / area:	System / subsystem:		Date (dd/mm/yy):	
Location / area:	System / subsystem:		Date (dd/mm/yy):		
Pole tag:	Pole type:	<input type="checkbox"/> Straight		<input type="checkbox"/> Curved	
Number of fixtures / voltage / power:	n	V	W	Circuit # ____	Progressive # ____
INSPECTIONS (Ref. to QCP 1680.01)		N.A.	ACC.	REPORT / REFERENCE	INSPECTOR SIGNATURE & DATE
					CONTRACTOR TECHNIP OWNER
A - Mast installation					
A1.	Concrete base / Foundation dimensional check according to drawings	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Anchor bolts size and connection elements completeness checked	<input type="checkbox"/>	<input type="checkbox"/>		
A3.	Alignment and levelling correct	<input type="checkbox"/>	<input type="checkbox"/>		
A4.	No splitting or cracking on section splices	<input type="checkbox"/>	<input type="checkbox"/>		
A5.	Completeness of mechanical and electrical accessories	<input type="checkbox"/>	<input type="checkbox"/>		
B - Lamp installation and wiring					
B1.	Cable entries clear and grounding connections done	<input type="checkbox"/>	<input type="checkbox"/>		
B2.	Fixture installed and wired properly	<input type="checkbox"/>	<input type="checkbox"/>		
C - Final inspection					
C1.	Ground clearance	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	Verticality and luminaire orientation as required	<input type="checkbox"/>	<input type="checkbox"/>		
C3.	Lighting fixture functionality	<input type="checkbox"/>	<input type="checkbox"/>		
C4.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS :					
D- Final Doc. Review	INSPECTORS	CONTRACTOR	TECHNIP	OWNER	
	NAME				
	SIGNATURE				
	DATE				

 		PROJECT:			
		OWNER:			
QUALITY CONTROL FORM EFR 12F		PROJ. No.:	QCF REV.	SH. 1 OF 1	
LIGHTING SYSTEM LIGHTING TOWER INSTALLATION SUMMARY REPORT		CONTRACTOR:		EFR 12F N° ____	
GENERAL DATA					
Tag:		Location / area:		System / subsystem:	
Pole tag:		Crown type:		<input type="checkbox"/> Fixed	<input type="checkbox"/> Mobile
Number of fixtures / voltage / power:		n	V	W	Circuit # ____
INSPECTIONS (Ref. to QCP 1680.01)		N.A.	ACC.	REPORT / REFERENCE	INSPECTOR SIGNATURE & DATE
					CONTRACTOR TECHNIP OWNER
A - Mast and crown installation					
A1.	Concrete base / Foundation dimensional check according to drawings	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Anchor bolts size and connection elements completeness checked	<input type="checkbox"/>	<input type="checkbox"/>		
A3.	Alignment and levelling correct	<input type="checkbox"/>	<input type="checkbox"/>		
A4.	No splitting or cracking on section splices	<input type="checkbox"/>	<input type="checkbox"/>		
A5.	Completeness of mechanical and electrical accessories	<input type="checkbox"/>	<input type="checkbox"/>		
A6.	Crown and winch installed properly	<input type="checkbox"/>	<input type="checkbox"/>		
A7.	Braking system installed properly	<input type="checkbox"/>	<input type="checkbox"/>		
B - Lamp installation and wiring					
B1.	Cable entries clear and grounding connections done	<input type="checkbox"/>	<input type="checkbox"/>		
B2.	Fixture installed and wired properly	<input type="checkbox"/>	<input type="checkbox"/>		
C - Final inspection					
C1.	Ground clearance	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	Verticality and luminaire orientation as required	<input type="checkbox"/>	<input type="checkbox"/>		
C3.	Lighting fixture functionality	<input type="checkbox"/>	<input type="checkbox"/>		
C4.	Winch operation and braking system checked	<input type="checkbox"/>	<input type="checkbox"/>		
C5.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS :					
D- Final Doc. Review	INSPECTORS	CONTRACTOR	TECHNIP	OWNER	
	NAME				
	SIGNATURE				
	DATE				

 		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 12G		PROJ. No.:	QCF REV.	SH. 1 OF 2
LIGHTING SYSTEM RECEPTACLE OUTLET INSTALLATION SUMMARY REPORT		CONTRACTOR:		EFR 12G N° _____
GENERAL DATA				
Tag:	Location / area:	System / subsystem:	Date (dd/mm/yy):	
Is the equipment installed in hazardous area? <input type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", the fields marked with an (*) must be filled in)				
(*) Area classification acc. to IEC 60079-10-1 and IEC 60079-10-2: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> Mixed				
(*) Gas group: <input type="checkbox"/> IIA <input type="checkbox"/> IIB <input type="checkbox"/> IIC		(*) Temp. class: <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> T5 <input type="checkbox"/> T6		
EQUIPMENT IDENTIFICATION				
Outlet type: <input type="checkbox"/> Single phase <input type="checkbox"/> Three phase				
Rated voltage: V	Rated current: A	Reference drawing:		
Panel tag:	Circuit number:	Progr. n.: from _____ to _____	Quantity installed: n.	
(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T__		
ASSOCIATED JUNCTION BOXES				
Manufacturer:	Model:	Size:	Quantity installed: n.	
(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T__		
ASSOCIATED CABLE GLANDS				
Type:	Material:	Size:	Quantity installed: n.	
(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T__		
INSPECTIONS (Ref. to QCP 1680.01)		N.A.	ACC.	REPORT / REFERENCE
		INSPECTOR SIGNATURE & DATE		
		CONTRACTOR		
		TECHNIP		
		OWNER		
A – Installation of supports				
A1.	Supports installed properly	<input type="checkbox"/>	<input type="checkbox"/>	
A2.	Cold galvanizing touch-up paint applied	<input type="checkbox"/>	<input type="checkbox"/>	
B - Installation of receptacle				
B1.	Mounting & location as per drawings	<input type="checkbox"/>	<input type="checkbox"/>	
B2.	Height, alignment and levelling	<input type="checkbox"/>	<input type="checkbox"/>	
B3.	Maintenance accessibility	<input type="checkbox"/>	<input type="checkbox"/>	
B4.	No interference to access ways	<input type="checkbox"/>	<input type="checkbox"/>	
B5.	Accessories complete and spare holes plugged	<input type="checkbox"/>	<input type="checkbox"/>	
B6.	Outlet stability	<input type="checkbox"/>	<input type="checkbox"/>	
B7.	There are no unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>	
B8.	There are no visible unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>	
B9.	Bolts and cable entry devices are of the correct type	<input type="checkbox"/>	<input type="checkbox"/>	
B10.	Bolts and cable entry devices are tightened	<input type="checkbox"/>	<input type="checkbox"/>	
B11.	(*) Apparatus is appropriate to area classification	<input type="checkbox"/>	<input type="checkbox"/>	
B12.	(*) Apparatus group and temperature class is correct	<input type="checkbox"/>	<input type="checkbox"/>	
B13.	(*) Apparatus circuit identification available and correct	<input type="checkbox"/>	<input type="checkbox"/>	
B14.	(*) Flange faces are clean and undamaged (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>	
B15.	(*) Flange gap are within max values permitted (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>	
B16.	(*) Enclosure gaskets condition is satisfactory (Note 2)	<input type="checkbox"/>	<input type="checkbox"/>	
B17.	(*) Enclosed-break devices undamaged (Note 3)	<input type="checkbox"/>	<input type="checkbox"/>	

 		PROJECT:		
		OWNER:		
QUALITY CONTROL FORM EFR 12H		PROJ. No.:	QCF REV.	SH. 1 OF 2
LIGHTING SYSTEM LEVEL GAUGE LIGHTING INSTALLATION SUMMARY REPORT		CONTRACTOR:		EFR 12H N° ____
GENERAL DATA				
Tag:	Location / area:	System / subsystem:	Date (dd/mm/yy):	
Is the equipment installed in hazardous area? <input type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", the fields marked with an (*) must be filled in)				
(*) Area classification acc. to IEC 60079-10-1 and IEC 60079-10-2: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> Mixed				
(*) Gas group: <input type="checkbox"/> IIA <input type="checkbox"/> IIB <input type="checkbox"/> IIC (*) Temp. class: <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> T5 <input type="checkbox"/> T6				
EQUIPMENT IDENTIFICATION				
Fixture type:	<input type="checkbox"/> Fluorescent	<input type="checkbox"/> Incandescent	<input type="checkbox"/> Other _____	
Rated voltage:	V	Rated power:	W	Reference drawing:
Panel tag:	Circuit number:	Progr. n.: from ____ to ____	Quantity installed: n.	
	(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No	(*) Execution: EEx-__ II__ T__		
ASSOCIATED JUNCTION BOXES				
Manufacturer:	Model:	Size:	Quantity installed: n.	
	(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No	(*) Execution: EEx-__ II__ T__		
ASSOCIATED CABLE GLANDS				
Type:	Material:	Size:	Quantity installed: n.	
	(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No	(*) Execution: EEx-__ II__ T__		
INSPECTIONS (Ref. to QCP 1680.01)		N.A.	ACC.	REPORT / REFERENCE
				INSPECTOR SIGNATURE & DATE
				CONTRACTOR
				TECHNIP
				OWNER
A - Installation				
A1.	Mounting & location as per drawings	<input type="checkbox"/>	<input type="checkbox"/>	
A2.	Height, alignment and leveling	<input type="checkbox"/>	<input type="checkbox"/>	
A3.	Maintenance accessibility	<input type="checkbox"/>	<input type="checkbox"/>	
A4.	No interference to access ways	<input type="checkbox"/>	<input type="checkbox"/>	
A5.	Accessories complete and spare holes plugged	<input type="checkbox"/>	<input type="checkbox"/>	
A6.	Illuminator stability	<input type="checkbox"/>	<input type="checkbox"/>	
A7.	There are no unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>	
A8.	There are no visible unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>	
A9.	Bolts and cable entry devices are of the correct type	<input type="checkbox"/>	<input type="checkbox"/>	
A10.	Bolts and cable entry devices are tightened	<input type="checkbox"/>	<input type="checkbox"/>	
A11.	(*) Apparatus is appropriate to area classification	<input type="checkbox"/>	<input type="checkbox"/>	
A12.	(*) Apparatus group and temperature class is correct	<input type="checkbox"/>	<input type="checkbox"/>	
A13.	(*) Apparatus circuit identification available and correct	<input type="checkbox"/>	<input type="checkbox"/>	
A14.	(*) Flange faces are clean and undamaged (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>	
A15.	(*) Flange gap are within max values permitted (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>	
A16.	(*) Enclosure gaskets condition is satisfactory (Note 2)	<input type="checkbox"/>	<input type="checkbox"/>	
A17.	(*) Enclosed-break devices undamaged (Note 3)	<input type="checkbox"/>	<input type="checkbox"/>	
A18.	(*) Hermetically sealed devices undamaged (Note 3)	<input type="checkbox"/>	<input type="checkbox"/>	
A19.	(*) Restricted breathing enclosure satisfactory (Note 3)	<input type="checkbox"/>	<input type="checkbox"/>	
A20.	(*) Enclosure clearance is sufficient (Note 4)	<input type="checkbox"/>	<input type="checkbox"/>	
A21.	(*) Breathing and draining devices satisfactory (Note 4)	<input type="checkbox"/>	<input type="checkbox"/>	

 		PROJECT:			
		OWNER:			
QUALITY CONTROL FORM EFR 12I		PROJ. No.:	QCF REV.	SH. 1 OF 2	
LIGHTING SYSTEM AIRCRAFT WARNING LIGHTING SYSTEM INSTALLATION – SUMMARY REPORT		CONTRACTOR:			EFR 12I N° ____
GENERAL DATA					
Tag:	Location / area:	System / subsystem:	Date (dd/mm/yy):		
Is the equipment installed in hazardous area? <input type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", the fields marked with an (*) must be filled in)					
(*) Area classification acc. to IEC 60079-10-1 and IEC 60079-10-2: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> Mixed					
(*) Gas group: <input type="checkbox"/> IIA <input type="checkbox"/> IIB <input type="checkbox"/> IIC			(*) Temp. class: <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3 <input type="checkbox"/> T4 <input type="checkbox"/> T5 <input type="checkbox"/> T6		
EQUIPMENT IDENTIFICATION					
Fixture type:	<input type="checkbox"/> Xenon <input type="checkbox"/> Incandescent <input type="checkbox"/> Other ____	Intensity:	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low		
Rated voltage:	V	Rated power:	W	Reference drawing:	
Panel tag:	Circuit number:	Progr. n.: from ____ to ____	Quantity installed: n.		
(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T__			
ASSOCIATED JUNCTION BOXES					
Manufacturer:	Model:	Size:	Quantity installed: n.		
(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T__			
ASSOCIATED CABLE GLANDS					
Type:	Material:	Size:	Quantity installed: n.		
(*) Ex marking: <input type="checkbox"/> Yes <input type="checkbox"/> No		(*) Execution: EEx-__ II__ T__			
INSPECTIONS (Ref. to QCP 1680.01)		N.A.	ACC.	REPORT / REFERENCE	INSPECTOR SIGNATURE & DATE
					CONTRACTOR TECHNIP OWNER
A – Installation of supports					
A1.	Supports installed properly	<input type="checkbox"/>	<input type="checkbox"/>		
B - Installation of panels and beacons					
B1.	Mounting & location as per drawings	<input type="checkbox"/>	<input type="checkbox"/>		
B2.	Height, alignment and leveling	<input type="checkbox"/>	<input type="checkbox"/>		
B3.	Maintenance accessibility	<input type="checkbox"/>	<input type="checkbox"/>		
B4.	No interference to access ways	<input type="checkbox"/>	<input type="checkbox"/>		
B5.	Accessories complete and spare holes plugged	<input type="checkbox"/>	<input type="checkbox"/>		
B6.	Fixture stability	<input type="checkbox"/>	<input type="checkbox"/>		
B7.	There are no unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>		
B8.	There are no visible unauthorized modifications	<input type="checkbox"/>	<input type="checkbox"/>		
B9.	Bolts and cable entry devices are of the correct type	<input type="checkbox"/>	<input type="checkbox"/>		
B10.	Bolts and cable entry devices are tightened	<input type="checkbox"/>	<input type="checkbox"/>		
B11.	(*) Apparatus is appropriate to area classification	<input type="checkbox"/>	<input type="checkbox"/>		
B12.	(*) Apparatus group and temperature class is correct	<input type="checkbox"/>	<input type="checkbox"/>		
B13.	(*) Apparatus circuit identification available and correct	<input type="checkbox"/>	<input type="checkbox"/>		
B14.	(*) Flange faces are clean and undamaged (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>		
B15.	(*) Flange gap are within max values permitted (Note 1)	<input type="checkbox"/>	<input type="checkbox"/>		
B16.	(*) Enclosure gaskets condition is satisfactory (Note 2)	<input type="checkbox"/>	<input type="checkbox"/>		
B17.	(*) Enclosed-break devices undamaged (Note 3)	<input type="checkbox"/>	<input type="checkbox"/>		

 	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
	CLIENT		INDIAN OIL CORPORATION LIMITED	
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – TELECOMMUNICATION SYSTEMS INSTALLATION	Project No. 080557C001	Document No. 080557C-000-QCP-1570-001	Rev. No. 0	Page 1 of 4

QUALITY CONTROL PLAN – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION

TELECOMMUNICATION SYSTEMS INSTALLATION





TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
ICF-001U	“U” Unpacking
ICF-017A; ICF-038A	“A” Installation
ICF-039A	Final Inspection Report

REFERENCE DOCUMENTS:

- 080557C-000-STC-1590-001 Installation Standards
- 080557C-000-JSS-1590-001 Job Specification for Instrumentation Installation Works
- 080557C-000-PP-850 Site Co-ordination



LEGENDS

H	=	HOLD (Work Stop for Inspection- RFI required)
W	=	WITNESS (RFI required)
WC	=	100% SUPERVISION AND EXAMINATION BY CONTRACTOR
S	=	SURVEILLANCE (NO RFI)
R	=	REVIEW of QC REPORTS
N/A	=	NOT APPLICABLE
P	=	PREPARATION
A	=	DOCUMENT APPROVAL
IFA	=	ISSUED FOR APPROVAL / AUTHORIZATION
!	=	WARNING (Control of document revision status)
INFO	=	FOR INFORMATION
N.A.	=	NOT ACCEPTED
ACC.	=	ACCEPTED

			 Govindaraj Subramanian- External 2019.10.14 16:45:25 +05'30'	 Shyam Sundar Kanthalarajan 2019.10.18 10:41:42 +05'30'	 Sriram Sankaranarayanan 2019.10.21 16:09:35 +05'30'	 Montchristophe Jesumarian 2019.11.01 13:22:14 +05'30'
0	14-10-2019	ISSUED FOR IMPLEMENTATION	SGR	KRS	SS	JMC
REV.	DATE	STATUS	WRITTEN BY (name & visa)	CHECKED BY (name & visa)	APPROVED BY (name & visa)	AUTHOR. BY (name & visa)

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 	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
	CLIENT		INDIAN OIL CORPORATION LIMITED	
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – TELECOMMUNICATION SYSTEMS INSTALLATION	Project No. 080557C001	Document No. 080557C-000-QCP-1570-001	Rev. No. 0	Page 2 of 4

QUALITY CONTROL PLAN

INSTRUMENTATION AND COMMUNICATION SYSTEM INSTALLATION



TELECOMMUNICATION SYSTEMS INSTALLATION

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
A	PRELIMINARY ACTIVITIES				
A1	CHECK OF CONTRACTOR DRAWINGS REVISION STATUS	N/A	!	!	
A2	CHECK OF CONTRACTOR TECHNICAL SPECIFICATION AND PROCEDURE	N/A	IFA	A	
A3	CONTRACTOR'S METHOD STATEMENT (IF REQUIRED)	N/A	IFA	A	(1)
A4	AVAILABILITY OF VENDOR INSTALLATION MANUAL, DRAWING AND DOCUMENTATION	N/A	WC	INFO	(1)
A5	REVIEW OF SYSTEMS FAT PUNCH LIST (IF ANY)	By Vendor	WC	R	
B	UNPACKING				
B1	MATERIAL IDENTIFICATION AND CONSERVATION STATUS (FOR BOTH LOOSE AND PREASSEMBLED MATERIALS) UNPACKING VISUAL INSPECTION	ICF-001U	WC	W/R	
C	INSTALLATION				
C1	TELECOMMUNICATION SYSTEMS INSTALLATION IN CONTROL ROOM				
C1.1A	CCTV Installation	ICF-017A	WC	W/R	
C1.1B	CCTV Connection & wiring	ICF-017A	WC	W/R	
C1.1C	CCTV Check	ICF-017A	WC	W/R	
C1.2A	Intercom/Public Address Installation	ICF-017A	WC	W/R	

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 		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
		CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – TELECOMMUNICATION SYSTEMS INSTALLATION		Project No. 080557C001	Document No. 080557C-000-QCP-1570-001	Rev. No. 0	Page 3 of 4
Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C1.2B	Intercom/Public Address Connection & wiring	ICF-017A	WC	W/R	
C1.2C	Intercom/Public Address Check	ICF-017A	WC	W/R	
C1.3A	Telephone/Data Network Installation	ICF-017A	WC	W/R	
C1.3B	Telephone/Data Network Connection & wiring	ICF-017A	WC	W/R	
C1.3C	Telephone/Data Network Check	ICF-017A	WC	W/R	
C1.4A	Final inspection	ICF-017A	WC	W/R	
C1.5A	Final Documentation Review	ICF-017A	P	R	
C1.5B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C2	TELECOMMUNICATION SYSTEMS INSTALLATION IN SATELLITE RACK ROOM				
C2.1A	CCTV Installation	ICF-017A	WC	W/R	
C2.1B	CCTV Connection & wiring	ICF-017A	WC	W/R	
C2.1C	CCTV Check	ICF-017A	WC	W/R	
C2.2A	Intercom/Public Address Installation	ICF-017A	WC	W/R	
C2.2B	Intercom/Public Address Connection & wiring	ICF-017A	WC	W/R	
C2.2C	Intercom/Public Address Check	ICF-017A	WC	W/R	
C2.3A	Telephone/Data Network Installation	ICF-017A	WC	W/R	
C2.3B	Telephone/Data Network Connection & wiring	ICF-017A	WC	W/R	
C2.3C	Telephone/Data Network Check	ICF-017A	WC	W/R	
C2.4A	Final inspection	ICF-017A	WC	W/R	
C2.5A	Final Documentation Review	ICF-017A	P	R	

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 		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
		CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – TELECOMMUNICATION SYSTEMS INSTALLATION		Project No. 080557C001	Document No. 080557C-000-QCP-1570-001	Rev. No. 0	Page 4 of 4
Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C2.5B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C3	FIELD INSTALLATION OF COMMUNICATION APPARATUSES				
C3.1A	CCTV Installation	ICF-017A	WC	W/R	
C3.1B	CCTV Connection & wiring	ICF-017A	WC	W/R	
C3.1C	CCTV Check	ICF-017A	WC	W/R	
C3.2A	Intercom/Public Address Installation	ICF-017A	WC	W/R	
C3.2B	Intercom/Public Address Connection & wiring	ICF-017A	WC	W/R	
C3.2C	Intercom/Public Address Check	ICF-017A	WC	W/R	
C3.3A	Telephone / Field Call Stations / Data Network Installation	ICF-017A	WC	W/R	
C3.3B	Telephone / Field Call Stations / Data Network Connection & wiring	ICF-017A	WC	W/R	
C3.3C	Telephone / Field Call Stations / Data Network Check	ICF-017A	WC	W/R	
C3.4A	Final inspection	ICF-017A	WC	W/R	
C3.5A	Final Documentation Review	ICF-017A	P	R	
C3.5B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)



GENERAL NOTES



1 THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THE JOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN- CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.



2 CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.



NOTES: (1) A COPY OF THE DOCUMENT WILL BE DELIVERED TO COMPANY FOR INFORMATION

(2) TO BE FILED AS PART OF LOOP CHECK FOLDERS

 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery			
QUALITY CONTROL FORM ICF 017A		CLIENT		INDIAN OIL CORPORATION LIMITED			
COMMUNICATION SYSTEM CCTV SYSTEM, INTERCOM/PUBLIC ADDRESS SYSTEM AND TELEPHONE & DATA NETWORK INSTALLATION SUMMARY REPORT		PROJ. No. 080557C001		REV. 0	SH. _1_ OF _3_		
		CONTRACTOR:		ICF 017A N° _____			
GENERAL DATA							
Tag / Identification:		Ref. Drawing & rev:		MR / P.O. No.:			
TYPE:		Location:					
INSPECTIONS / CHECK (Ref. to QCP 1570.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE <table border="1"> <tr> <td>CONTR.</td> <td>TECHNIP</td> </tr> </table>	CONTR.	TECHNIP
CONTR.	TECHNIP						
1A- CCTV Installation							
A1.	Internal components identification & labelling	<input type="checkbox"/>	<input type="checkbox"/>				
A2.	Support installation	<input type="checkbox"/>	<input type="checkbox"/>				
A3.	Equipment layout alignment & fixing (in Control Room)	<input type="checkbox"/>	<input type="checkbox"/>				
A4.	Operator console / monitor installation	<input type="checkbox"/>	<input type="checkbox"/>				
A5.	Camera / enclosure / PTZ installation	<input type="checkbox"/>	<input type="checkbox"/>				
A6.	Camera washer and wiper installation	<input type="checkbox"/>	<input type="checkbox"/>				
1B – CCTV Connection & wiring							
B1.	Internal wiring done	<input type="checkbox"/>	<input type="checkbox"/>				
B2.	Cable identification and segregation	<input type="checkbox"/>	<input type="checkbox"/>				
B3.	Cable fastening	<input type="checkbox"/>	<input type="checkbox"/>				
B4.	Each cable in cable gland and shrouds installed on cable glands	<input type="checkbox"/>	<input type="checkbox"/>				
B5.	Unused cable entrance to be plugged with certified (as applicable) blanking plug	<input type="checkbox"/>	<input type="checkbox"/>				
B6.	Terminals execution and connection	<input type="checkbox"/>	<input type="checkbox"/>				
B7.	Screen connection	<input type="checkbox"/>	<input type="checkbox"/>				
B8.	Ground connection	<input type="checkbox"/>	<input type="checkbox"/>				
1C – CCTV Check							
C1.	Conformity to data sheet, specs and classification	<input type="checkbox"/>	<input type="checkbox"/>				
C2.	Tag and labelling	<input type="checkbox"/>	<input type="checkbox"/>				
C3.	Adequate clearance for PTZ unit movements	<input type="checkbox"/>	<input type="checkbox"/>				
C4.	Monitor orientation	<input type="checkbox"/>	<input type="checkbox"/>				
C5.	Ventilation and air flow (inside cabinet)	<input type="checkbox"/>	<input type="checkbox"/>				
C6.	Measure chassis earth value from equipment to main earth point (for cabinet)	<input type="checkbox"/>	<input type="checkbox"/>				
C7.	Measure telecom earth value from equipment to main earth point (for cabinet)	<input type="checkbox"/>	<input type="checkbox"/>				
C8.	Telecom earth insulation from chassis earth (no earth loops) (for cabinet)	<input type="checkbox"/>	<input type="checkbox"/>				
2A- Intercom/Public Address Installation							
A1.	Internal components identification & labeling	<input type="checkbox"/>	<input type="checkbox"/>				
A2.	Support installation	<input type="checkbox"/>	<input type="checkbox"/>				
A3.	Equipment layout alignment & fixing (in Control Room)	<input type="checkbox"/>	<input type="checkbox"/>				
A4.	Installation of operator console / access panel	<input type="checkbox"/>	<input type="checkbox"/>				
A5.	Installation of indoor flashing beacon	<input type="checkbox"/>	<input type="checkbox"/>				
A6.	Installation of outdoor flashing beacon	<input type="checkbox"/>	<input type="checkbox"/>				
A7.	Installation of indoor loudspeaker / intercom set	<input type="checkbox"/>	<input type="checkbox"/>				
A8.	Installation of outdoor loudspeaker / intercom set	<input type="checkbox"/>	<input type="checkbox"/>				

 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM ICF 017A		CLIENT		INDIAN OIL CORPORATION LIMITED	
COMMUNICATION SYSTEM CCTV SYSTEM, INTERCOM/PUBLIC ADDRESS SYSTEM AND TELEPHONE & DATA NETWORK INSTALLATION SUMMARY REPORT		PROJ. No. 080557C001		REV. 0	SH. _2_ OF _3_
		CONTRACTOR:		ICF 017A N° _____	
INSPECTIONS / CHECK (Ref. to QCP 1570.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
					CONTR. TECHNIP
A9.	Installation of outdoor acoustic booth	<input type="checkbox"/>	<input type="checkbox"/>		
A10.	Installation of outdoor local amplifier with enclosure	<input type="checkbox"/>	<input type="checkbox"/>		
2B – Intercom/Public Address Connection & wiring					
B1.	Internal wiring done	<input type="checkbox"/>	<input type="checkbox"/>		
B2.	Cable identification and segregation	<input type="checkbox"/>	<input type="checkbox"/>		
B3.	Cable fastening	<input type="checkbox"/>	<input type="checkbox"/>		
B4.	Each cable in cable gland and shrouds installed on cable glands	<input type="checkbox"/>	<input type="checkbox"/>		
B5.	Unused cable entrance to be plugged with certified (as applicable) blanking plug	<input type="checkbox"/>	<input type="checkbox"/>		
B6.	Terminals execution and connection	<input type="checkbox"/>	<input type="checkbox"/>		
B7.	Screen connection	<input type="checkbox"/>	<input type="checkbox"/>		
B8.	Ground connection	<input type="checkbox"/>	<input type="checkbox"/>		
2C – Intercom/Public Address Check					
C1.	Conformity to data sheet, specs and classification	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	Tag and labelling	<input type="checkbox"/>	<input type="checkbox"/>		
C3.	Direction of loudspeaker	<input type="checkbox"/>	<input type="checkbox"/>		
C4.	Audio power tapping of loudspeaker against Coverage Study (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>		
C5.	Installation height of loudspeaker	<input type="checkbox"/>	<input type="checkbox"/>		
C6.	Installation height of intercom set	<input type="checkbox"/>	<input type="checkbox"/>		
C7.	Color of flashing beacon	<input type="checkbox"/>	<input type="checkbox"/>		
C8.	Flashing beacon view unobstructed	<input type="checkbox"/>	<input type="checkbox"/>		
C9.	Ventilation and air flow (inside cabinet)	<input type="checkbox"/>	<input type="checkbox"/>		
C10.	Measure chassis earth value from equipment to main earth point (for cabinet)	<input type="checkbox"/>	<input type="checkbox"/>		
C11.	Measure telecom earth value from equipment to main earth point (for cabinet)	<input type="checkbox"/>	<input type="checkbox"/>		
C12.	Telecom earth insulation from chassis earth (no earth loops) (for cabinet)	<input type="checkbox"/>	<input type="checkbox"/>		
3A- Telephone / Field Call Station / Data Network Installation					
A1.	Internal components identification & labeling	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Support installation	<input type="checkbox"/>	<input type="checkbox"/>		
A3.	Equipment layout alignment & fixing (in Control Room)	<input type="checkbox"/>	<input type="checkbox"/>		
A4.	Outlet installation	<input type="checkbox"/>	<input type="checkbox"/>		
A5.	Installation of indoor telephone set	<input type="checkbox"/>	<input type="checkbox"/>		
A6.	Installation of outdoor telephone set	<input type="checkbox"/>	<input type="checkbox"/>		
A7.	Installation of outdoor acoustic booth	<input type="checkbox"/>	<input type="checkbox"/>		
A8.	Installation of Field Call Station	<input type="checkbox"/>	<input type="checkbox"/>		
A9.	Installation of outdoor additional telephone beacon / sounder (as applicable)	<input type="checkbox"/>	<input type="checkbox"/>		
A10.	Installation of indoor PC / operator console / management console / server (as applicable)	<input type="checkbox"/>	<input type="checkbox"/>		
A11.	Installation of printer / plotter	<input type="checkbox"/>	<input type="checkbox"/>		

 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM		ICF 017A		CLIENT	
INDIAN OIL CORPORATION LIMITED		PROJ. No. 080557C001		REV. 0	SH. _3_ OF _3_
COMMUNICATION SYSTEM CCTV SYSTEM, INTERCOM/PUBLIC ADDRESS SYSTEM AND TELEPHONE & DATA NETWORK INSTALLATION SUMMARY REPORT		CONTRACTOR:			ICF 017A N° _____
INSPECTIONS / CHECK (Ref. to QCP 1570.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE CONTR. TECHNIP
3B – Telephone / Field Call Station / Data Network Connection & wiring					
B1.	Internal wiring done	<input type="checkbox"/>	<input type="checkbox"/>		
B2.	Cable identification and segregation	<input type="checkbox"/>	<input type="checkbox"/>		
B3.	Cable fastening	<input type="checkbox"/>	<input type="checkbox"/>		
B4.	Each cable in cable gland and shrouds installed on cable glands	<input type="checkbox"/>	<input type="checkbox"/>		
B5.	Unused cable entrance to be plugged with certified (as applicable) blanking plug	<input type="checkbox"/>	<input type="checkbox"/>		
B6.	Terminals execution and connection	<input type="checkbox"/>	<input type="checkbox"/>		
B7.	Screen connection	<input type="checkbox"/>	<input type="checkbox"/>		
B8.	Ground connection	<input type="checkbox"/>	<input type="checkbox"/>		
3C – Telephone / Field Call Station / Data Network Check					
C1.	Conformity to data sheet, specs and classification	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	Tag and labelling	<input type="checkbox"/>	<input type="checkbox"/>		
C3.	FO cable correctly terminated and secured	<input type="checkbox"/>	<input type="checkbox"/>		
C4.	Minimum bending radius of FO cable met inside cabinet	<input type="checkbox"/>	<input type="checkbox"/>		
C5.	Additional telephone beacon is visible and additional telephone sounder is audible	<input type="checkbox"/>	<input type="checkbox"/>		
C6.	Bending radius of FO patch cord	<input type="checkbox"/>	<input type="checkbox"/>		
C7.	Ventilation and air flow (inside cabinet)	<input type="checkbox"/>	<input type="checkbox"/>		
C8.	Measure chassis earth value from equipment to main earth point (for cabinet)	<input type="checkbox"/>	<input type="checkbox"/>		
C9.	Measure telecom earth value from equipment to main earth point (for cabinet)	<input type="checkbox"/>	<input type="checkbox"/>		
C10.	Telecom earth insulation from chassis earth (no earth loops) (for cabinet)	<input type="checkbox"/>	<input type="checkbox"/>		
4A - Final inspection					
A1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS :					
5A - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR	TECHNIP	OWNER	
	NAME				
	SIGNATURE				
	DATE				

 		PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery		
QUALITY CONTROL FORM ICF 038A		CLIENT INDIAN OIL CORPORATION LIMITED		
INSTRUMENT AIR SUBHEADERS PRESSURE TEST INSPECTION REPORT		PROJ. No. 080557C001	REV. 0	
		SH. __1_ OF __1__		
		CONTRACTOR: ICF 038A N° _____		
GENERAL DATA				
INSTRUMENT SUBHEADER ID. OR AIR TAP N.				
Instruments supplied:				
Test pressure (Kg/Cm2g)		7 Kg/Cm2g (Unless otherwise specified)		
Test medium used		Air (Unless otherwise specified)		
INSTALLATION INSPECTION			Accepted	
			N.A.	ACC.
A- Installation				
A1.	Support		<input type="checkbox"/>	<input type="checkbox"/>
A2.	Installation		<input type="checkbox"/>	<input type="checkbox"/>
B - Connection / wiring				
B1.	Main air header commissioned		<input type="checkbox"/>	<input type="checkbox"/>
B2.	Secondary air header connected		<input type="checkbox"/>	<input type="checkbox"/>
B3.	Air distribution to instrument connected		<input type="checkbox"/>	<input type="checkbox"/>
C - Check				
C1.	Pressure service test with air at 7Kg/Cm2g		<input type="checkbox"/>	<input type="checkbox"/>
C2.	Blowing/Tightness		<input type="checkbox"/>	<input type="checkbox"/>
C3.	Labelling		<input type="checkbox"/>	<input type="checkbox"/>
D - Final inspection				
D1.	Final visual inspection		<input type="checkbox"/>	<input type="checkbox"/>
D2.	As-built marked up copy updated and available		<input type="checkbox"/>	<input type="checkbox"/>
REMARKS:				
INSPECTORS		CONTRACTOR		TECHNIP
NAME				
SIGNATURE				
DATE				
				OWNER

TechnipFMC IndianOil		PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM ICF 039A		CLIENT INDIAN OIL CORPORATION LIMITED	
FIELD INSTRUMENT INSTALLATION FINAL INSPECTION REPORT		PROJ. No. 080557C001 REV. 0 SH. ___1 OF ___1	
		CONTRACTOR: _____ ICF 039A N° _____	
GENERAL DATA			
Instrument TAG:			
Serial: _____			
Model: _____			
MR: _____			
P.O.: _____			
P&ID: _____			
Rev: _____			
INSPECTIONS / CHECK (Ref. to QCP 1570.001)		N.A.	ACC.
		Report / Reference	INSPECTOR SIGNATURE & DATE
			CONTR. TECHNIP
1A- Inspection / Check Point			
A1.	Instrument calibration	<input type="checkbox"/>	<input type="checkbox"/>
A2.	Instrument installation	<input type="checkbox"/>	<input type="checkbox"/>
A3.	Impulse line pressure test	<input type="checkbox"/>	<input type="checkbox"/>
A4.	Instrument signal cable to JB/LP and wiring check	<input type="checkbox"/>	<input type="checkbox"/>
A5.	Instrument power cable and wiring check if any	<input type="checkbox"/>	<input type="checkbox"/>
A6.	Cable way in trays; in conduits or underground-layout and installation checks	<input type="checkbox"/>	<input type="checkbox"/>
A7.	Instrument cable - terminals execution and connection to Instruments and J.Box/L.Panel sides	<input type="checkbox"/>	<input type="checkbox"/>
A8.	Instrument air sub headers pressure test	<input type="checkbox"/>	<input type="checkbox"/>
A9.	Pneumatic connection and air-supply leak test	<input type="checkbox"/>	<input type="checkbox"/>
A10.	Instrument ready for Loop check (relevant JB/LP checked, relevant cable from JB/LP to system checked, relevant system powered up)	<input type="checkbox"/>	<input type="checkbox"/>
REMARKS : (*) THE QC REPORTS SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : A1. ICF _____ N° _____ A2. ICF _____ N° _____ A3. ICF _____ N° _____ A4. ICF _____ N° _____ A5. ICF _____ N° _____ A6. ICF _____ N° _____ A7. ICF _____ N° _____ A8. ICF 038A N° _____ A9. ICF _____ N° _____			
INSPECTORS		CONTRACTOR	
NAME		TECHNIP	
SIGNATURE		OWNER	
DATE			

 	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
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QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – PACKAGE INSTRUMENTATION TEST	Project No. 080557C001	Document No. 080557C-000-QCP-1590-001	Rev. No. 0	Page 1 of 3

QUALITY CONTROL PLAN – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION

PACKAGE INSTRUMENTATION TEST





TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
ICF-016A; ICF-038A	"A" Installation
ICF-039A	Final Inspection Report

REFERENCE DOCUMENTS:

- 080557C-000-STC-1590-001 Installation Standards
- 080557C-000-JSS-1590-001 Job Specification for Instrumentation Installation Works
- 080557C-000-PP-850 Site Co-ordination

LEGENDS

H	=	HOLD (Work Stop for Inspection- RFI required)
W	=	WITNESS (RFI required)
WC	=	100% SUPERVISION AND EXAMINATION BY CONTRACTOR
S	=	SURVEILLANCE (NO RFI)
R	=	REVIEW of QC REPORTS
N/A	=	NOT APPLICABLE
P	=	PREPARATION
A	=	DOCUMENT APPROVAL
IFA	=	ISSUED FOR APPROVAL / AUTHORIZATION
!	=	WARNING (Control of document revision status)
INFO	=	FOR INFORMATION
N.A.	=	NOT ACCEPTED
ACC.	=	ACCEPTED

			 Gokuldas Subramanian-External 2019.10.14 16:46:08 +05'30'	 Shyam Sunder Kanthakurugan 2019.10.18 10:42:34 +05'30'	 Sitan Sarikararayan 2019.10.20 16:11:02 +05'30'	 Morischristopher Jesumarian 2019.11.01 13:22:43 +05'30'
0	14-10-2019	ISSUED FOR IMPLEMENTATION	SGR	KRS	SS	JMC
REV.	DATE	STATUS	WRITTEN BY (name & visa)	CHECKED BY (name & visa)	APPROVED BY (name & visa)	AUTHOR. BY (name & visa)

DOCUMENT REVISIONS

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	CLIENT		INDIAN OIL CORPORATION LIMITED		
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – PACKAGE INSTRUMENTATION TEST	Project No. 080557C001	Document No. 080557C-000-QCP-1590-001		Rev. No. 0	Page 2 of 3

QUALITY CONTROL PLAN
INSTRUMENTATION AND COMMUNICATION SYSTEM INSTALLATION
PACKAGE INSTRUMENTATION TEST (1590.00)

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
A	PRELIMINARY ACTIVITIES				
A1	CHECK OF CONTRACTOR DRAWINGS REVISION STATUS	N/A	!	!	
A2	CHECK OF CONTRACTOR TECHNICAL SPECIFICATION AND PROCEDURE	N/A	IFA	A	
A3	CONTRACTOR'S METHOD STATEMENT (IF REQUIRED)	N/A	IFA	A	(1)
A4	AVAILABILITY OF VENDOR INSTALLATION MANUAL, DRAWING AND DOCUMENTATION	N/A	WC	W/R	(1)
C	INSTALLATION				
C1	DISMOUNTING, CALIBRATION, TESTS AND RE-INSTALLATION OF SKID MOUNTED INSTRUMENTS				
C1.1	Package Equipment Instrumentation				
C1.1A	Instrument Hook-up installation	ICF-016A	WC	W/R	
C1.1B	Cable and wiring	ICF-016A	WC	W/R	
C1.1C	Junction box/Local panel	ICF-016A	WC	W/R	
C1.1D	Range and Calibration Check	ICF-016A	WC	W/R	
C1.1E	Final Inspection	ICF-016A	WC	W/R	
C1.1F	Final Documentation Review	ICF-016A	P	R	
C1.1G	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)

 	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
	CLIENT		INDIAN OIL CORPORATION LIMITED	
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – PACKAGE INSTRUMENTATION TEST	Project No. 080557C001	Document No. 080557C-000-QCP-1590-001	Rev. No. 0	Page 3 of 3



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		PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery				
QUALITY CONTROL FORM ICF 016A		CLIENT INDIAN OIL CORPORATION LIMITED				
PACKAGE EQUIPMENT INSTRUMENTATION SUMMARY REPORT		PROJ. No. 080557C001 REV. 0 SH. _1_ OF _1_				
		CONTRACTOR: ICF 016A N° _____				
GENERAL DATA						
TAG:		MR:				
Reference Drawing:		Rev.:				
Prefabrication status:		<input type="checkbox"/> Loose item <input type="checkbox"/> Skid mounted				
Serial:		Model:				
INSPECTIONS / CHECK (Ref. to QCP 1590.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE	
					CONTR.	TECHNIP
1A - Instrument Hook-up Installation						
A1.	Installation	<input type="checkbox"/>	<input type="checkbox"/>			
A2.	Material and Rating	<input type="checkbox"/>	<input type="checkbox"/>			
A3.	Labelling	<input type="checkbox"/>	<input type="checkbox"/>			
A4.	Support	<input type="checkbox"/>	<input type="checkbox"/>			
A5.	Air supply	<input type="checkbox"/>	<input type="checkbox"/>			
A6.	Signal tubing	<input type="checkbox"/>	<input type="checkbox"/>			
A7.	Power supply	<input type="checkbox"/>	<input type="checkbox"/>			
1B - Cables and wiring						
B1.	Conduits / trays installation	<input type="checkbox"/>	<input type="checkbox"/>			
B2.	Fastening	<input type="checkbox"/>	<input type="checkbox"/>			
B3.	Trays painted	<input type="checkbox"/>	<input type="checkbox"/>			
B4.	Cables installation and connection	<input type="checkbox"/>	<input type="checkbox"/>			
B5.	Wiring identification and labelling	<input type="checkbox"/>	<input type="checkbox"/>			
B6.	Shield / armouring grounding check	<input type="checkbox"/>	<input type="checkbox"/>			
B7.	Spares and spacing	<input type="checkbox"/>	<input type="checkbox"/>			
B8.	Electrical execution	<input type="checkbox"/>	<input type="checkbox"/>			
1C - Junction box / Local Panel						
C1.	Junction box / Local panel installation	<input type="checkbox"/>	<input type="checkbox"/>			
C2.	Cables entry	<input type="checkbox"/>	<input type="checkbox"/>			
C3.	Accessories installed	<input type="checkbox"/>	<input type="checkbox"/>			
C4.	Sealing	<input type="checkbox"/>	<input type="checkbox"/>			
1D – Range and Calibration Check						
D1.	Ranges and calibration of skid instrumentation (1)	<input type="checkbox"/>	<input type="checkbox"/>			
1E - Final inspection						
E1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>			
E2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>			
Notes: 1) Unless otherwise required, the field calibrations shall be performed and recorded on the forms relevant to bench test calibration report						
REMARKS :						
1F- FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR		TECHNIP		OWNER
	NAME					
	SIGNATURE					
	DATE					

 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM		ICF 038A		CLIENT	
INDIAN OIL CORPORATION LIMITED		INDIAN OIL CORPORATION LIMITED			
INSTRUMENT AIR SUBHEADERS PRESSURE TEST INSPECTION REPORT		PROJ. No. 080557C001		REV. 0	SH. _1_ OF _1_
		CONTRACTOR:		ICF 038A N° _____	
GENERAL DATA					
INSTRUMENT SUBHEADER ID. OR AIR TAP N.					
Instruments supplied:					
Test pressure (Kg/Cm2g)		7 Kg/Cm2g (Unless otherwise specified)			
Test medium used		Air (Unless otherwise specified)			
INSTALLATION INSPECTION				Accepted	
				N.A.	ACC.
A- Installation					
A1.	Support			<input type="checkbox"/>	<input type="checkbox"/>
A2.	Installation			<input type="checkbox"/>	<input type="checkbox"/>
B - Connection / wiring					
B1.	Main air header commissioned			<input type="checkbox"/>	<input type="checkbox"/>
B2.	Secondary air header connected			<input type="checkbox"/>	<input type="checkbox"/>
B3.	Air distribution to instrument connected			<input type="checkbox"/>	<input type="checkbox"/>
C - Check					
C1.	Pressure service test with air at 7Kg/Cm2g			<input type="checkbox"/>	<input type="checkbox"/>
C2.	Blowing/Tightness			<input type="checkbox"/>	<input type="checkbox"/>
C3.	Labelling			<input type="checkbox"/>	<input type="checkbox"/>
D - Final inspection					
D1.	Final visual inspection			<input type="checkbox"/>	<input type="checkbox"/>
D2.	As-built marked up copy updated and available			<input type="checkbox"/>	<input type="checkbox"/>
REMARKS :					
INSPECTORS		CONTRACTOR		TECHNIP	
NAME					
SIGNATURE					
DATE					

TechnipFMC IndianOil		PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM ICF 039A		CLIENT INDIAN OIL CORPORATION LIMITED	
FIELD INSTRUMENT INSTALLATION FINAL INSPECTION REPORT		PROJ. No. 080557C001	REV. 0
		SH. _1_ OF _1_	
		CONTRACTOR: ICF 039A N° _____	
GENERAL DATA			
Instrument TAG:			
Serial:			
Model:			
MR:			
P.O.:			
P&ID:			
Rev:			
INSPECTIONS / CHECK (Ref. to QCP 1590.001)		N.A.	ACC.
		Report / Reference	INSPECTOR SIGNATURE & DATE
			CONTR. TECHNIP
1A- Inspection / Check Point			
A1.	Instrument calibration	<input type="checkbox"/>	<input type="checkbox"/>
A2.	Instrument installation	<input type="checkbox"/>	<input type="checkbox"/>
A3.	Impulse line pressure test	<input type="checkbox"/>	<input type="checkbox"/>
A4.	Instrument signal cable to JB/LP and wiring check	<input type="checkbox"/>	<input type="checkbox"/>
A5.	Instrument power cable and wiring check if any	<input type="checkbox"/>	<input type="checkbox"/>
A6.	Cable way in trays; in conduits or underground- layout and installation checks	<input type="checkbox"/>	<input type="checkbox"/>
A7.	Instrument cable - terminals execution and connection to Instruments and J.Box/L.Panel sides	<input type="checkbox"/>	<input type="checkbox"/>
A8.	Instrument air sub headers pressure test	<input type="checkbox"/>	<input type="checkbox"/>
A9.	Pneumatic connection and air-supply leak test	<input type="checkbox"/>	<input type="checkbox"/>
A10.	Instrument ready for Loop check (relevant JB/LP checked, relevant cable from JB/LP to system checked, relevant system powered up)	<input type="checkbox"/>	<input type="checkbox"/>
REMARKS : (*) THE QC REPORTS SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : <div style="margin-left: 40px;"> A1. ICF _____ N° _____ A2. ICF _____ N° _____ A3. ICF _____ N° _____ A4. ICF _____ N° _____ A5. ICF _____ N° _____ A6. ICF _____ N° _____ A7. ICF _____ N° _____ A8. ICF 038A N° _____ A9. ICF _____ N° _____ </div>			
INSPECTORS		CONTRACTOR	
NAME		TECHNIP	
SIGNATURE		OWNER	
DATE			

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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP – PRECOMMISSIONING / COMMISSIONING – INSTRUMENTATION & AUTOMATION	Project No. 080557C001	Document No. 080557C-000-QCP-1500-051	Rev. No. 0	Page 1 of 2

QUALITY CONTROL PLAN - PRECOMMISSIONING / COMMISSIONING INSTRUMENTATION & AUTOMATION

QC REPORT CODE	DESCRIPTION	NOTES
QCR 1500.P51	FIELD INSTRUMENTS VISUAL INSPECTION	
QCR 1500.P52	FIELD INSTRUMENTS TIGHTNESS TEST OF IMPULSE LINES CONNECTIONS	
QCR 1500.P53	FIELD INSTRUMENTS PRESSURE SAFETY VALVES CALIBRATION TEST	(1)
QCR 1500.P54	FIELD INSTRUMENTS FLOW ELEMENT INSPECTION	
QCR 1500.P55	LOOP CHECK REPORT	(1)
W12	MISCELLANEA - INSPECTION	





(1) Single certificate for each item

REFERENCE DOCUMENTS:

- 080557C-000-STC-1590-001 Installation Standards
- 080557C-000-JSS-1590-001 Job Specification for Instrumentation Installation Works
- 080557C-000-PP-850 Site Co-ordination


LEGENDS

H	=	HOLD (Work Stop for Inspection- RFI required)
W	=	WITNESS (RFI required)
WC	=	100% SUPERVISION AND EXAMINATION BY CONTRACTOR
S	=	SURVEILLANCE (NO RFI)
R	=	REVIEW of QC REPORTS
N/A	=	NOT APPLICABLE
P	=	PREPARATION
A	=	DOCUMENT APPROVAL
IFA	=	ISSUED FOR APPROVAL
INFO	=	FOR INFORMATION
!	=	WARNING (Control of document revision status)
N.A.	=	NOT ACCEPTED
ACC.	=	ACCEPTED

			 Govindaraj Subramanian- External 2019.10.18 10:55:26 +05'30'	 Karthikeyan 2019.10.18 10:56:59 +05'30'	 Suresh Sekaranarayanan 2019.10.21 16:02:18 +05'30'	 Morischristopher Jesumarian 2019.11.01 13:18:02 +05'30'
0	14-10-2019	ISSUED FOR IMPLEMENTATION	SGR	KRS	SS	JMC
REV.	DATE	STATUS	WRITTEN BY (name & visa)	CHECKED BY (name & visa)	APPROVED BY (name & visa)	AUTHOR. BY (name & visa)

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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP – PRECOMMISSIONING / COMMISSIONING – INSTRUMENTATION & AUTOMATION	Project No. 080557C001	Document No. 080557C-000-QCP-1500-051	Rev. No. 0	Page 2 of 2

QUALITY CONTROL PLAN - PRECOMMISSIONING / COMMISSIONING

INSTRUMENTATION & AUTOMATION

QUALITY CONTROL ACTIVITIES



Nr.	CHECK AND TEST DESCRIPTION	QCR CODE	ACTION		NOTES
			CONTR.	TECHNIP	
A	FIELD INSTRUMENT				
1	VISUAL INSPECTION	1500.P51	WC	W / R	
2	TIGHTNESS TEST OF IMPULSE LINES CONNECTIONS	1500.P52	WC	W / R	
3	PRESSURE SAFETY VALVE CALIBRATION TEST	1500.P53	WC	W / R	
4	FLOW ELEMENT INSPECTION	1500.P54	WC	W / R	
B	LOOP CHECK				
1	LOOPS CHECK REPORT	1500.P55	WC	W / R	
C	MISCELLANEA INSPECTION REPORT	W12	WC	W / R	(1)

(1): Split of site inspection responsibilities depends from the type of the inspection performed and the Contract requirements

GENERAL NOTES

1 THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THE JOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN- CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.

2 CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.

 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery
	CLIENT	INDIAN OIL CORPORATION LIMITED
QUALITY CONTROL REPORT	1500.P51	PROJ. No. 080557C001 REV. 0 SH. _1_ OF _1_ CONTRACTOR:

PRECOMMISSIONING - QUALITY CONTROL REPORT

INSTRUMENTATION & AUTOMATION
FIELD INSTRUMENTS
VISUAL INSPECTION

MC PACKAGE:			UNIT:					SYSTEM:		
POS	TAG	EARTHING CONNECTION	SITE CALIBRATION STAMP	VENT / DRAIN SLOPE	FLOW DIRECTION	CONNECTING LINE (Air Supply/HP-LP)	LABELING & TAGGING	WITNESSING		NOTES
								CONTR.	TECHNIP	

NOTE

QCR ACCEPTANCE			
INSPECTORS	CONTRACTOR	TECHNIP	OWNER
NAME			
SIGNATURE			
DATE			

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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery
	CLIENT	INDIAN OIL CORPORATION LIMITED
QUALITY CONTROL REPORT 1500.P52		PROJ. No. 080557C001 REV. 0 SH. _1_ OF _1_ CONTRACTOR:

PRECOMMISSIONING – QUALITY CONTROL REPORT



INSTRUMENTATION & AUTOMATION
FIELD INSTRUMENTS
TIGHTNESS TEST OF IMPULSE LINES CONNECTIONS

MC PACKAGE:			UNIT:			SYSTEM:		
POS	INSTRUMENT TAG N°	OPERATING PRESSURE (Kg/Cm2g)	TESTED WITH	TEST PRESSURE (Kg/Cm2g)	RESULT	WITNESSING		NOTES
						CONTR.	TECHNIP	

NOTE

QCR ACCEPTANCE			
INSPECTORS	CONTRACTOR	TECHNIP	OWNER
NAME			
SIGNATURE			
DATE			

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 TechnipFMC 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery
	CLIENT	INDIAN OIL CORPORATION LIMITED
QUALITY CONTROL REPORT	1500.P53	PROJ. No. 080557C001 REV. 0 SH. _1_ OF _1_ CONTRACTOR:

PRECOMMISSIONING – QUALITY CONTROL REPORT

INTRUMENTATION & AUTOMATION

PRESSURE SAFETY VALVE CALIBRATION TEST



MC PACKAGE:	UNIT:	SYSTEM:		
ITEM: _____ MR/PO: _____ SIZE: _____ MODEL N°: _____ SERIAL N°: _____				
OPERATING CONDITION				
SET PRESSURE: _____ Kg/Cm2 BELOW: _____ COLD PRESSURE: _____ Kg/Cm2 BACK PRESSURE: _____ Kg/Cm2				
REQUIRED CHECKS	REMARKS	DATE	WITNESSING	
			CONTR.	TECHNIP
TAG PLATE AND DATE				
OPERATING PRESSURE				
RESET PRESSURE				
BUBBLE TEST				

NOTE:

QCR ACCEPTANCE			
INSPECTORS	CONTRACTOR	TECHNIP	OWNER
NAME			
SIGNATURE			
DATE			

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 	PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery
QUALITY CONTROL REPORT	1500.P54
PROJ. No. 080557C001 REV. 0 SH. _1_ OF _1_	
CONTRACTOR:	

PRECOMMISSIONING – QUALITY CONTROL REPORT

INSTRUMENTATION & AUTOMATION

FIELD INSTRUMENTS

FLOW ELEMENT INSPECTION

[illegible]

NOTE

- (1) Verify as minimum:
 - a) Tag
 - b) Stamp for flow direction
 - c) Material
 - d) Geometrical dimensions (Internal & external diameter; thickness;)
 - e) Face-to-Face dimensions (as applicable, e.g., Integral Orifice)
 - f) Vent / Drain hole (as applicable)

QCR ACCEPTANCE			
INSPECTORS	CONTRACTOR	TECHNIP	OWNER
NAME			
SIGNATURE			
DATE			

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		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery				
		CLIENT	INDIAN OIL CORPORATION LIMITED				
QUALITY CONTROL FORM 1500.P55		PROJ. No. 080557C001	REV. 0	SH. _1_ OF _1_			
PRECOMMISSIONING ACTIVITIES: FIELD INSTRUMENTS – LOOP CHECK REPORT		CONTRACTOR:		1500.P55 N° _____			
GENERAL DATA							
Unit:		System:		LOOP No:			
Instrument TAG No	Instrument Range			REMARK			
	N.A <input type="checkbox"/>						
	N.A <input type="checkbox"/>						
Instrument Range / Eng. Units Check	N.A <input type="checkbox"/>						
Hart Items Check	N.A <input type="checkbox"/>						
Hart Tag	N.A <input type="checkbox"/>						
CHECKS PERFORMED ON THE RELEVANT LOOP							
A-Type of check		Confirm the Correct Reading/ Deviation or Action as Required				Accepted	
Step	Activity					YES	NA
A1	Input signal (AI-1) 0- 50 -100%	0% <input type="checkbox"/>		50% <input type="checkbox"/>		100% <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
	Input signal (AI-2) 0- 50 -100%	0% <input type="checkbox"/>		50% <input type="checkbox"/>		100% <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
	Input signal (AI-3) 0- 50 -100%	0% <input type="checkbox"/>		50% <input type="checkbox"/>		100% <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
A2	Output signal(AO)	0% <input type="checkbox"/>	5% <input type="checkbox"/>	100% <input type="checkbox"/>	95% <input type="checkbox"/>	50% <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
	Output signal SOV (DO)	Energise to Open <input type="checkbox"/>		Energise to Close <input type="checkbox"/>			<input type="checkbox"/> <input type="checkbox"/>
	Failure position	Open <input type="checkbox"/>	Close <input type="checkbox"/>	Stay put <input type="checkbox"/>			<input type="checkbox"/> <input type="checkbox"/>
	Valve (DI) limit switches	Open <input type="checkbox"/>	Close <input type="checkbox"/>	Open in Sec:	Close in Sec:		<input type="checkbox"/> <input type="checkbox"/>
	Valve position TX (AI)	0% <input type="checkbox"/>		50% <input type="checkbox"/>		100% <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
A3	Press, Flow, Level, Temp Switch (DI)	H: NC <input type="checkbox"/> NO <input type="checkbox"/>	HH: NC <input type="checkbox"/> NO <input type="checkbox"/>	L: NC <input type="checkbox"/> NO <input type="checkbox"/>	LL: NC <input type="checkbox"/> NO <input type="checkbox"/>		<input type="checkbox"/> <input type="checkbox"/>
A4.	Aux (DO)	ON <input type="checkbox"/>	OFF <input type="checkbox"/>				<input type="checkbox"/> <input type="checkbox"/>
A5	Aux (DI)	NC <input type="checkbox"/>	NO <input type="checkbox"/>				<input type="checkbox"/> <input type="checkbox"/>
Notes:							
REMARKS : CHECK THE TAG HART IN ACCORDANCE WITH THE PROJECT DOCUMENTS AND POSITION OF INSTRUMENT							
QCR ACCEPTANCE							
INSPECTORS		CONTRACTOR		TECHNIP		OWNER	
NAME							
SIGNATURE							
DATE							

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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery	
	CLIENT	INDIAN OIL CORPORATION LIMITED	
QUALITY CONTROL REPORT W12	PROJ. No. 080557C001 REV. 0 SH. _1_ OF _1_		
	CONTRACTOR:		

INSPECTION REPORT			
1.	PURPOSE OF INSPECTION _____		
	QCP _____	CHECK STEP _____	AREA _____
2.	ITEM IDENTIFICATION	_____	_____
		_____	_____
		_____	_____
		_____	_____
3.	TYPE OF INSPECTION _____	TEST	<input type="checkbox"/>
		EXAMINATION	<input type="checkbox"/>
		CHECK	<input type="checkbox"/>
4.	INSPECTION RESULT:	CONFORMING	<input type="checkbox"/>
		NOT CONFORMING	<input type="checkbox"/>
		WITH REMARKS	<input type="checkbox"/>
5.	REMARKS _____		

INSPECTORS	CONTRACTOR	TECHNIP	OWNER
NAME			
SIGNATURE			
DATE			

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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – WORKS IN CONTROL ROOM	Project No. 080557C001	Document No. 080557C-000-QCP-1510-001	Rev. No. 0	Page 1 of 6

QUALITY CONTROL PLAN – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION

WORKS IN CONTROL ROOM





TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
ICF-001U	“U” Unpacking
ICF-006B	“B” Before Installation
ICF-001A; ICF-002A; ICF-006A; ICF-007A; ICF-010A; ICF-013A	“A” Installation
	Final Inspection Report

REFERENCE DOCUMENTS:

- 080557C-000-STC-1590-001 Installation Standards
- 080557C-000-JSS-1590-001 Job Specification for Instrumentation Installation Works
- 080557C-000-PP-805 Site Co-ordination

LEGENDS

H	=	HOLD (Work Stop for Inspection- RFI required)
W	=	WITNESS (RFI required)
WC	=	100% SUPERVISION AND EXAMINATION BY CONTRACTOR
S	=	SURVEILLANCE (NO RFI)
R	=	REVIEW of QC REPORTS
N/A	=	NOT APPLICABLE
P	=	PREPARATION
A	=	DOCUMENT APPROVAL
IFA	=	ISSUED FOR APPROVAL / AUTHORIZATION
I	=	WARNING (Control of document revision status)
INFO	=	FOR INFORMATION
N.A.	=	NOT ACCEPTED
ACC.	=	ACCEPTED

			 Written By Govindaraj Subramanian- External 2019.10.14 16:41:41 +05'30'	 Checked By Shyam Sunder Karthikalingam 2019.10.18 10:38:10 +05'30'	 Approved By Srinam Sankaranarayanan 2019.10.21 16:04:50 +05'30'	 Authorized By Morischristopher Jesumarian 2019.11.01 13:18:31 +05'30'
0	14-10-2019	ISSUED FOR IMPLEMENTATION	SGR	KRS	SS	JMC
REV.	DATE	STATUS	WRITTEN BY (name & visa)	CHECKED BY (name & visa)	APPROVED BY (name & visa)	AUTHOR. BY (name & visa)

DOCUMENT REVISIONS

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 	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT		INDIAN OIL CORPORATION LIMITED		
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – WORKS IN CONTROL ROOM	Project No. 080557C001	Document No. 080557C-000-QCP-1510-001		Rev. No. 0	Page 2 of 6

QUALITY CONTROL PLAN

INSTRUMENTATION AND COMMUNICATION SYSTEM INSTALLATION

WORKS IN CONTROL ROOM (1510.00)

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP.	
A	PRELIMINARY ACTIVITIES				
A1	CHECK OF CONTRACTOR DRAWINGS REVISION STATUS	N/A	!	!	
A2	CHECK OF CONTRACTOR TECHNICAL SPECIFICATION AND PROCEDURE	N/A	IFA	A	
A3	CONTRACTOR'S METHOD STATEMENT (IF REQUIRED)	N/A	IFA	A	(1)
A4	AVAILABILITY OF VENDOR INSTALLATION MANUAL, DRAWING AND DOCUMENTATION	N/A	WC	INFO	(1)
A5	REVIEW OF SYSTEMS FAT PUNCH LIST (IF ANY)	By Vendor	WC	R	
B	BEFORE INSTALLATION				
B1	MATERIAL IDENTIFICATION AND CONSERVATION STATUS (FOR BOTH LOOSE AND PREASSEMBLED MATERIALS) UNPACKING VISUAL INSPECTION	ICF-001U	WC	W/R	
B2	INSTRUMENT CABLES DRUM CHECK				
B2.1A	Cables Drum Test	ICF-006B	WC	W/R	
B2.1B	Cables Drum Check	ICF-006B	WC	W/R	
B2.1C	Final inspection	ICF-006B	WC	W/R	
B2.1D	Final Documentation Review	ICF-006B	P	R	

 		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
		CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – WORKS IN CONTROL ROOM	Project No. 080557C001	Document No. 080557C-000-QCP-1510-001		Rev. No. 0	Page 3 of 6

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP.	
C	INSTALLATION				
C1	INSTALLATION OF CABINETS, BOARD EQUIPMENT AND RACKS				
C1.1	Instrument Equipment Installation				
C1.1A	Support installation	ICF-001A	WC	W/R	
C1.1B	Internal connection	ICF-001A	WC	W/R	
C1.1C	Labelling & internal components check	ICF-001A	WC	W/R	
C1.1D	Final inspection	ICF-001A	WC	W/R	
C1.2	Instrument Equipment Ready for Power On				
C1.2A	IP Installation	ICF-001A	WC	W/R	
C1.2B	Power & Grounding Connection	ICF-001A	WC	W/R	
C1.2C	Battery Check	ICF-001A	WC	W/R	
C1.2D	Final inspection	ICF-001A	WC	W/R	
C1.3A	Final Documentation Review	ICF-001A	P	R	
C2	INSTALLATION OF CABLE TRAYS				
C2.1A	Prefabrication & installation of supports	ICF-007A	WC	W/R	
C2.1B	Installation of conduit	ICF-007A	WC	W/R	
C2.1C	Installation of trays (False Floor and inside Control Room)	ICF-007A	WC	W/R	
C2.1D	Grounding	ICF-007A	WC	W/R	
C2.1E	Installation of covers	ICF-007A	WC	W/R	
C2.1F	Final inspection	ICF-007A	WC	W/R	
C2.1G	Final Documentation Review	ICF-007A	P	R	

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 	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
	CLIENT		INDIAN OIL CORPORATION LIMITED	
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – WORKS IN CONTROL ROOM	Project No. 080557C001	Document No. 080557C-000-QCP-1510-001	Rev. No. 0	Page 4 of 6

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP.	
C3	INSTALLATION OF CABLES AND MULTICABLES				
C3.1A	Instrument Cables Drum Check	ICF-006B / ICF-006A	WC	W/R	
C3.1B	Cables Installation (False Floor and inside Control Room)	ICF-006A	WC	W/R	
C3.1C	Cables Test	ICF-006A	WC	W/R	
C3.1D	Cables Check	ICF-006A	WC	W/R	
C3.1E	Final inspection	ICF-006A	WC	W/R	
C3.1F	Final Documentation Review	ICF 006A	P	R	
C4	CONNECTION OF CABLES AND MULTICABLES AT BOTH ENDS				
C4.1A	Source point check	ICF-010A	WC	W/R	
C4.1B	Destination point check	ICF-010A	WC	W/R	
C4.1C	Final inspection	ICF-010A	WC	W/R	
C4.1D	Final Documentation Review	ICF-010A	P	R	
C5	INSTALLATION OF CONTROL SYSTEMS				
C5.1	Instrument Equipment Installation				
C5.1A	Support installation (False Floor and inside Control Room)	ICF-001A	WC	W/R	
C5.1B	Internal connection	ICF-001A	WC	W/R	
C5.1C	Labelling & internal components check	ICF-001A	WC	W/R	
C5.1D	Final inspection	ICF-001A	WC	W/R	
C5.2	Instrument Equipment Ready for Power On				
C5.2A	IP Installation	ICF-001A	WC	W/R	
C5.2B	Power & Grounding Connection	ICF-001A	WC	W/R	

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 		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
		CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – WORKS IN CONTROL ROOM	Project No. 080557C001	Document No. 080557C-000-QCP-1510-001		Rev. No. 0	Page 5 of 6

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP.	
C5.2C	Battery Check	ICF-001A	WC	W/R	
C5.2D	Final inspection	ICF-001A	WC	W/R	
C5.3A	Final Documentation Review	ICF-001A	P	R	
C5F	INSTALLATION OF CONTROL SYSTEMS (FOUNDATION FIELDBUS ONLY)				
C5F.1	Instrument Equipment Installation				
C5F.1A	Support installation	ICF-002A	WC	W/R	
C5F.1B	Internal connection	ICF-002A	WC	W/R	
C5F.1C	Labelling & internal components check	ICF-002A	WC	W/R	
C5F.1D	Final inspection	ICF-002A	WC	W/R	
C5F.2	Instrument Equipment Ready for Power On				
C5F.2A	IP Installation	ICF-002A	WC	W/R	
C5F.2B	Power & Grounding Connection	ICF-002A	WC	W/R	
C5F.2C	Battery Check	ICF-002A	WC	W/R	
C5F.2D	Final inspection	ICF-002A	WC	W/R	
C5F.3	Fieldbus Segment Standard Checkout				
C5F.3A	DC voltage measurement at marshalling cabinet (power supply connected)	ICF-002A	WC	W/R	
C5F.3B	Marshalling cabinet signal level	ICF-002A	WC	W/R	
C5F.3C	Marshalling cabinet noise level	ICF-002A	WC	W/R	
C5F.3D	Check	ICF-002A	WC	W/R	
C5F.3E	Final inspection	ICF-002A	WC	W/R	
C5F.4	Fieldbus Segment Extended Checkout				
C5F.4A	Resistance measurement at Marshalling Cabinet (trunk and spur connected, devices and power supply disconnected)	ICF-002A	WC	W/R	

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 	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
	CLIENT		INDIAN OIL CORPORATION LIMITED	
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – WORKS IN CONTROL ROOM	Project No. 080557C001	Document No. 080557C-000-QCP-1510-001	Rev. No. 0	Page 6 of 6

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP.	
C5F.4B	Capacitance measurement at Marshalling Cabinet	ICF-002A	WC	W/R	
C5F.4C	DC voltage measurement at Marshalling Cabinet (power supply connected)	ICF-002A	WC	W/R	
C5F.4D	Signal and noise level measurement at Marshalling Cabinet	ICF-002A	WC	W/R	
C5F.4E	Field end measurement for each device (after download)	ICF-002A	WC	W/R	
C5F.4F	Final check at Marshalling Cabinet	ICF-002A	WC	W/R	
C5F.4G	Final inspection	ICF-002A	WC	W/R	
C5F.5A	Final Documentation Review	ICF-002A	P	R	
C6	INSTALLATION OF F&G / TELECOM EQUIPMENT				
C6.1A	Installation of support (False Floor and inside Control Room including False Ceiling)	ICF-013A	WC	W/R	
C6.1D	Installation of instrument	ICF-013A	WC	W/R	
C6.1E	Check	ICF-013A	WC	W/R	
C6.1F	Final inspection	ICF-013A	WC	W/R	
C6.1G	Final Documentation Review	ICF-013A	P	R	



GENERAL NOTES

1 THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THE JOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN- CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.



2 CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.

NOTES: (1) A COPY OF THE DOCUMENT WILL BE DELIVERED TO COMPANY FOR INFORMATION

		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
QUALITY CONTROL FORM ICF 001A		CLIENT	INDIAN OIL CORPORATION LIMITED		
INSTRUMENT EQUIPMENT INSTALLATION SUMMARY REPORT (ready for Power-On)		PROJ. No. 080557C001	REV. 0	SH. _1_OF _1_	
		CONTRACTOR:		ICF 001A N° _____	
GENERAL DATA					
TAG / identification					
Type (see bottom):					
Ref. Drawing & rev:					
Control Room / Location:					
MR / P.O. No.:					
INSTALLATION INSPECTION					
INSPECTIONS / CHECK (Ref. to QCP 1510.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
					CONTR. TECHNIP
1A - Support Installation					
A1.	Support installation	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Equipment layout alignment and fixing	<input type="checkbox"/>	<input type="checkbox"/>		
1B – Internal Connection					
B1.	Internal wiring done	<input type="checkbox"/>	<input type="checkbox"/>		
B2.	Internal grounding done	<input type="checkbox"/>	<input type="checkbox"/>		
1C – Labelling & internal components Check					
C1.	Labelling	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	Internal components identification	<input type="checkbox"/>	<input type="checkbox"/>		
1D - Final inspection					
D1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>		
D2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
2A - IP Installation					
A1.	Check Ingress Protection (IP) means	<input type="checkbox"/>	<input type="checkbox"/>		
2B - Power & Grounding Connection					
B1.	System cable connected (if any)	<input type="checkbox"/>	<input type="checkbox"/>		
B2.	Power supply cable connected.	<input type="checkbox"/>	<input type="checkbox"/>		
B3.	Common grounding connected	<input type="checkbox"/>	<input type="checkbox"/>		
B4.	Safety grounding connected	<input type="checkbox"/>	<input type="checkbox"/>		
2C - Battery Check					
C1.	Back-up battery check	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	Readiness for power-on witnessed by vendor specialist	<input type="checkbox"/>	<input type="checkbox"/>		
2D - Final inspection					
D1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>		
D2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
Equipment Types: Traditional Panels and Racks; DCS, PLC, AC (auxiliary cabinets), MC (marshalling cabinets), SIC (special instrument cabinets), EIC (Electrical/instrument interface cabinets), PS (power supply cabinets), PMC (package manufactured cabinets), Etc.....					
REMARKS :					
5A - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR		TECHNIP	OWNER
	NAME				
	SIGNATURE				
	DATE				



 		PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery				
QUALITY CONTROL FORM ICF 002A		CLIENT INDIAN OIL CORPORATION LIMITED				
INSTALLATION OF CONTROL SYSTEMS (FOUNDATION FIELD BUS ONLY) SUMMARY REPORT		PROJ. No. 080557C001	REV. 0			
		SH. _1_OF _6_ CONTRACTOR: ICF 002A N° _____				
GENERAL DATA						
TAG / identification						
Type (see bottom):						
Ref. Drawing & rev:						
Control Room / Location:						
MR / P.O. No.:						
Field bus segment name:						
INSTALLATION INSPECTION						
INSPECTIONS / CHECK (Ref. to QCP 1510.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE	
					CONTR.	TECHNIP
1A - Support Installation						
A1.	Support installation	<input type="checkbox"/>	<input type="checkbox"/>			
A2.	Equipment layout alignment and fixing	<input type="checkbox"/>	<input type="checkbox"/>			
1B – Internal Connection						
B1.	Internal wiring done	<input type="checkbox"/>	<input type="checkbox"/>			
B2.	Internal grounding done	<input type="checkbox"/>	<input type="checkbox"/>			
1C – Labelling & internal components Check						
C1.	Labelling	<input type="checkbox"/>	<input type="checkbox"/>			
C2.	Internal components identification	<input type="checkbox"/>	<input type="checkbox"/>			
1D - Final inspection						
D1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>			
D2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>			
2A - IP Installation						
A1.	Check Ingress Protection (IP) means	<input type="checkbox"/>	<input type="checkbox"/>			
2B - Power & Grounding Connection						
B1.	System cable connected (if any)	<input type="checkbox"/>	<input type="checkbox"/>			
B2.	Power supply cable connected.	<input type="checkbox"/>	<input type="checkbox"/>			
B3.	Common grounding connected	<input type="checkbox"/>	<input type="checkbox"/>			
B4.	Safety grounding connected	<input type="checkbox"/>	<input type="checkbox"/>			
2C - Battery Check						
C1.	Back-up battery check	<input type="checkbox"/>	<input type="checkbox"/>			
C2.	Readiness for power-on witnessed by vendor specialist	<input type="checkbox"/>	<input type="checkbox"/>			
2D - Final inspection						
D1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>			
D2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>			
Equipment Types: Traditional Panels and Racks; DCS, PLC, AC (auxiliary cabinets), MC (marshalling cabinets), SIC (special instrument cabinets), EIC (Electrical/instrument interface cabinets), PS (power supply cabinets), PMC (package manufactured cabinets), Etc.....						
REMARKS :						

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 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM ICF 002A		CLIENT		INDIAN OIL CORPORATION LIMITED	
INSTALLATION OF CONTROL SYSTEMS (FOUNDATION FIELD BUS ONLY) SUMMARY REPORT		PROJ. No. 080557C001		REV. 0	SH. _2_OF _6_
		CONTRACTOR:		ICF 002A N° _____	
INSPECTIONS / CHECK (Ref. to QCP 1510.001)			N.A.	ACC.	Report / Reference
					INSPECTOR SIGNATURE & DATE
					CONTR.
					TECHNIP
3A - DC voltage measurement at marshalling cabinet (power supply connected)					
A1.	(+) to (-) signal	Actual =	<input type="checkbox"/>	<input type="checkbox"/>	
3B - Marshalling cabinet signal level					
B1.	(+) to (-) signal Expected = 300 ÷ 700 mV	Device HEX = Actual =	<input type="checkbox"/>	<input type="checkbox"/>	
B2.	(+) to (-) signal Expected = 300 ÷ 700 mV	Device HEX = Actual =	<input type="checkbox"/>	<input type="checkbox"/>	
B3.	(+) to (-) signal Expected = 300 ÷ 700 mV	Device HEX = Actual =	<input type="checkbox"/>	<input type="checkbox"/>	
B4.	(+) to (-) signal Expected = 300 ÷ 700 mV	Device HEX = Actual =	<input type="checkbox"/>	<input type="checkbox"/>	
B5.	(+) to (-) signal Expected = 300 ÷ 700 mV	Device HEX = Actual =	<input type="checkbox"/>	<input type="checkbox"/>	
B6.	(+) to (-) signal Expected = 300 ÷ 700 mV	Device HEX = Actual =	<input type="checkbox"/>	<input type="checkbox"/>	
B7.	(+) to (-) signal Expected = 300 ÷ 700 mV	Device HEX = Actual =	<input type="checkbox"/>	<input type="checkbox"/>	
B8.	(+) to (-) signal Expected = 300 ÷ 700 mV	Device HEX = Actual =	<input type="checkbox"/>	<input type="checkbox"/>	
B9.	(+) to (-) signal Expected = 300 ÷ 700 mV	Device HEX = Actual =	<input type="checkbox"/>	<input type="checkbox"/>	
B10.	(+) to (-) signal Expected = 300 ÷ 700 mV	Device HEX = Actual =	<input type="checkbox"/>	<input type="checkbox"/>	
B11.	(+) to (-) signal Expected = 300 ÷ 700 mV	Device HEX = Actual =	<input type="checkbox"/>	<input type="checkbox"/>	
B12.	(+) to (-) signal Expected = 300 ÷ 700 mV	Device HEX = Actual =	<input type="checkbox"/>	<input type="checkbox"/>	
3C - Marshalling cabinet noise level					
C1.	(+) to (-) signal Expected <= 75 ÷ mV	Actual Peak Noise FF Frequencies =	<input type="checkbox"/>	<input type="checkbox"/>	
C2.	(+) to (-) signal Expected <= 150 ÷ mV	Actual Peak Noise FF HF =	<input type="checkbox"/>	<input type="checkbox"/>	
C3.	(+) to (-) signal Expected <= 150 ÷ mV	Actual Peak Noise FF LF =	<input type="checkbox"/>	<input type="checkbox"/>	
C4.	(+) to (-) signal Expected <= 75 ÷ mV	Actual Peak Noise FF Frequencies =	<input type="checkbox"/>	<input type="checkbox"/>	
C5.	(+) to (-) signal Expected <= 150 ÷ mV	Actual Peak Noise FF HF =	<input type="checkbox"/>	<input type="checkbox"/>	
C6.	(+) to (-) signal Expected <= 150 ÷ mV	Actual Peak Noise FF LF =	<input type="checkbox"/>	<input type="checkbox"/>	
3D - Check					
D1.	Wiring status	<input type="checkbox"/> OK <input type="checkbox"/> BAD	<input type="checkbox"/>	<input type="checkbox"/>	
D2.	Retransmit	<input type="checkbox"/> None <input type="checkbox"/> Yes Device HEX =	<input type="checkbox"/>	<input type="checkbox"/>	
3E- Final inspection					
E1.	Final visual inspection		<input type="checkbox"/>	<input type="checkbox"/>	
E2.	As-built marked up copy updated and available		<input type="checkbox"/>	<input type="checkbox"/>	
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 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM		ICF 002A		CLIENT	
INSTALLATION OF CONTROL SYSTEMS (FOUNDATION FIELD BUS ONLY) SUMMARY REPORT		PROJ. No. 080557C001		REV. 0	SH. _3_ OF _6_
		CONTRACTOR:		ICF 002A N° _____	
INSPECTIONS / CHECK (Ref. to QCP 1510.001)			N.A.	AC C.	Report / Reference
			INSPECTOR SIGNATURE & DATE		
			CONTR.		
			TECHNIP		
4A - Resistance measurement at Marshalling Cabinet (trunk and spur connected, devices and power supply disconnected)					
A1.	(+)to(-) signal Expected => 50KΩ (increasing)	Actual=	<input type="checkbox"/>	<input type="checkbox"/>	
A2.	(+)to shield Expected = open circuit (>20MΩ)	Actual=	<input type="checkbox"/>	<input type="checkbox"/>	
A3.	(-)to shield Expected = open circuit (>20MΩ)	Actual=	<input type="checkbox"/>	<input type="checkbox"/>	
A4.	(+)to ground bar Expected = open circuit (>20MΩ)	Actual=	<input type="checkbox"/>	<input type="checkbox"/>	
A5.	(-)to ground bar Expected = open circuit (>20MΩ)	Actual=	<input type="checkbox"/>	<input type="checkbox"/>	
A6.	Shield to ground bar Expected = open circuit (>20MΩ)	Actual=	<input type="checkbox"/>	<input type="checkbox"/>	
4B - Capacitance measurement at Marshalling Cabinet					
B1.	(+)to(-) signal Expected => 1μF (+/-20%)	Actual=	<input type="checkbox"/>	<input type="checkbox"/>	
B2.	(+)to shield Expected <= 300 nF	Actual=	<input type="checkbox"/>	<input type="checkbox"/>	
B3.	(-)to shield Expected <=300 nF	Actual=	<input type="checkbox"/>	<input type="checkbox"/>	
B4.	(+)to ground bar Expected <= 300 nF	Actual=	<input type="checkbox"/>	<input type="checkbox"/>	
B5.	(-)to ground bar Expected <= 300 nF	Actual=	<input type="checkbox"/>	<input type="checkbox"/>	
B6.	Shield to ground bar Expected <= 300 nF	Actual=	<input type="checkbox"/>	<input type="checkbox"/>	
4C- DC voltage measurement at Marshalling Cabinet (power supply connected)					
C1.	(+)to(-) signal	Actual=	<input type="checkbox"/>	<input type="checkbox"/>	
4D- Signal and noise level measurement at Marshalling Cabinet					
D1.	(+)to(-) signal Expected = 300÷700 mV	Actual las=	<input type="checkbox"/>	<input type="checkbox"/>	
D2.	(+)to(-) signal Expected <= 75 mV	Actual peak noise FF frequencies =	<input type="checkbox"/>	<input type="checkbox"/>	
D3.	(+)to(-) signal Expected <= 150 mV	Actual peak noise HF =	<input type="checkbox"/>	<input type="checkbox"/>	
D4.	(+)to(-) signal Expected <= 150 mV	Actual peak noise LF =	<input type="checkbox"/>	<input type="checkbox"/>	
D5.	(+)to(-) signal Expected <= 75 mV	Actual noise average FF frequencies =	<input type="checkbox"/>	<input type="checkbox"/>	
D6.	(+)to(-) signal Expected <= 150 mV	Actual noise average HF =	<input type="checkbox"/>	<input type="checkbox"/>	
D7.	(+)to(-) signal Expected <= 150 mV	Actual noise average LF =	<input type="checkbox"/>	<input type="checkbox"/>	
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		PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery				
QUALITY CONTROL FORM ICF 002A		CLIENT INDIAN OIL CORPORATION LIMITED				
INSTALLATION OF CONTROL SYSTEMS (FOUNDATION FIELD BUS ONLY) SUMMARY REPORT		PROJ. No. 080557C001 REV. 0 SH. _4_OF _6_				
		CONTRACTOR: _____ ICF 002A N° _____				
SINSPCTIONS / CHECK (Ref. to QCP 1510.001)		N.A.	AC C.	Report / Reference	INSPECTOR SIGNATURE & DATE	
					CONTR.	TECHNIP
4E - Field End Measurement for each device (after download)						
E1	Node Address	HEX	<input type="checkbox"/>	<input type="checkbox"/>		
E1.1	(+)to(-) signal Expected = 300÷700 mV	Actual las=	<input type="checkbox"/>	<input type="checkbox"/>		
E1.2	(+)to(-) signal Expected <= 75 mV	Actual peak noise FF Frequencies =	<input type="checkbox"/>	<input type="checkbox"/>		
E1.3	(+)to(-) signal Expected <= 75 mV	Actual AUG noise FF frequencies =	<input type="checkbox"/>	<input type="checkbox"/>		
E2	Node Address	HEX	<input type="checkbox"/>	<input type="checkbox"/>		
E2.1	(+)to(-) signal Expected = 300÷700 mV	Actual las=	<input type="checkbox"/>	<input type="checkbox"/>		
E2.2	(+)to(-) signal Expected <= 75 mV	Actual peak noise FF frequencies =	<input type="checkbox"/>	<input type="checkbox"/>		
E2.3	(+)to(-) signal Expected <= 75 mV	Actual AUG noise FF frequencies =	<input type="checkbox"/>	<input type="checkbox"/>		
E3	Node Address	HEX	<input type="checkbox"/>	<input type="checkbox"/>		
E3.1	(+)to(-) signal Expected = 300÷700 mV	Actual las=	<input type="checkbox"/>	<input type="checkbox"/>		
E3.2	(+)to(-) signal Expected <= 75 mV	Actual peak noise FF frequencies =	<input type="checkbox"/>	<input type="checkbox"/>		
E3.3	(+)to(-) signal Expected <= 75 mV	Actual AUG noise FF frequencies =	<input type="checkbox"/>	<input type="checkbox"/>		
E4	Node Address	HEX	<input type="checkbox"/>	<input type="checkbox"/>		
E4.1	(+)to(-) signal Expected = 300÷700 mV	Actual las=	<input type="checkbox"/>	<input type="checkbox"/>		
E4.2	(+)to(-) signal Expected <= 75 mV	Actual peak noise FF frequencies =	<input type="checkbox"/>	<input type="checkbox"/>		
E4.3	(+)to(-) signal Expected <= 75 mV	Actual AUG noise FF frequencies =	<input type="checkbox"/>	<input type="checkbox"/>		
E5	Node Address	HEX	<input type="checkbox"/>	<input type="checkbox"/>		
E5.1	(+)to(-) signal Expected = 300÷700 mV	Actual las=	<input type="checkbox"/>	<input type="checkbox"/>		
E5.2	(+)to(-) signal Expected <= 75 mV	Actual peak noise FF frequencies =	<input type="checkbox"/>	<input type="checkbox"/>		
E5.3	(+)to(-) signal Expected <= 75 mV	Actual AUG noise FF frequencies =	<input type="checkbox"/>	<input type="checkbox"/>		
E6	Node Address	HEX	<input type="checkbox"/>	<input type="checkbox"/>		
E6.1	(+)to(-) signal Expected = 300÷700 mV	Actual las=	<input type="checkbox"/>	<input type="checkbox"/>		
E6.2	(+)to(-) signal Expected <= 75 mV	Actual peak noise FF frequencies =	<input type="checkbox"/>	<input type="checkbox"/>		
E6.3	(+)to(-) signal Expected <= 75 mV	Actual AUG noise FF frequencies =	<input type="checkbox"/>	<input type="checkbox"/>		
E7	Node Address	HEX	<input type="checkbox"/>	<input type="checkbox"/>		
E7.1	(+)to(-) signal Expected = 300÷700 mV	Actual las=	<input type="checkbox"/>	<input type="checkbox"/>		
E7.2	(+)to(-) signal Expected <= 75 mV	Actual peak noise FF frequencies =	<input type="checkbox"/>	<input type="checkbox"/>		
E7.3	(+)to(-) signal Expected <= 75 mV	Actual AUG noise FF frequencies =	<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS:						

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 				PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery			
QUALITY CONTROL FORM ICF 002A				CLIENT		INDIAN OIL CORPORATION LIMITED			
INSTALLATION OF CONTROL SYSTEMS (FOUNDATION FIELD BUS ONLY) SUMMARY REPORT				PROJ. No. 080557C001		REV. 0		SH. _6_OF _6_	
				CONTRACTOR:				ICF 002A N° _____	
INSPECTIONS / CHECK (Ref. to QCP 1510.001)				N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE		
							CONTR.	TECHNIP	
4F - Final check at Marshalling Cabinet									
F1.		Device HEX =	Signal Level =	<input type="checkbox"/>	<input type="checkbox"/>				
F2.		Device HEX =	Signal Level =	<input type="checkbox"/>	<input type="checkbox"/>				
F3.		Device HEX =	Signal Level =	<input type="checkbox"/>	<input type="checkbox"/>				
F4.		Device HEX =	Signal Level =	<input type="checkbox"/>	<input type="checkbox"/>				
F5.		Device HEX =	Signal Level =	<input type="checkbox"/>	<input type="checkbox"/>				
F6.		Device HEX =	Signal Level =	<input type="checkbox"/>	<input type="checkbox"/>				
F7.		Device HEX =	Signal Level =	<input type="checkbox"/>	<input type="checkbox"/>				
F8.		Device HEX =	Signal Level =	<input type="checkbox"/>	<input type="checkbox"/>				
F9.		Device HEX =	Signal Level =	<input type="checkbox"/>	<input type="checkbox"/>				
F10.		Device HEX =	Signal Level =	<input type="checkbox"/>	<input type="checkbox"/>				
F11.		Device HEX =	Signal Level =	<input type="checkbox"/>	<input type="checkbox"/>				
F12.		Device HEX =	Signal Level =	<input type="checkbox"/>	<input type="checkbox"/>				
F13.	Retransmit	Device HEX =	Signal Level =	<input type="checkbox"/>	<input type="checkbox"/>				
4G - Final inspection									
G1.	Final visual inspection			<input type="checkbox"/>	<input type="checkbox"/>				
G2.	As-built marked up copy updated and available			<input type="checkbox"/>	<input type="checkbox"/>				
REMARKS:									
5A - FINAL DOC. REVIEW	INSPECTORS		CONTRACTOR		TECHNIP		OWNER		
	NAME								
	SIGNATURE								
	DATE								

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				PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM ICF 006A				CLIENT		INDIAN OIL CORPORATION LIMITED	
INSTRUMENT CABLES INSTALLATION SUMMARY REPORT				PROJ. No. 080557C001		REV. 0	SH. _1_OF _1_
				CONTRACTOR:		ICF 006A N° _____	
GENERAL DATA							
Cable tag / ID:				Connected from:			
Cable type:				Connected to:			
INSPECTIONS / CHECK (Ref. to QCP 1510.001)			N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE	
						CONTR.	TECHNIP
1A – Instrument Cable Drum Check			<input type="checkbox"/>	<input type="checkbox"/>	ICF 006B (*)		
1B - Cables Installation		Results					
B1.	Minimum separation from Electrical cables		<input type="checkbox"/>	<input type="checkbox"/>			
B2.	Cable fastening		<input type="checkbox"/>	<input type="checkbox"/>			
B3.	Cable laying and segregation		<input type="checkbox"/>	<input type="checkbox"/>			
1C - Cables Test		Results					
C1.	Insulation (Megger) 500 VDC values see notes: (1) (2)	C/C	<input type="checkbox"/>	<input type="checkbox"/>			
C2.		C/G	<input type="checkbox"/>	<input type="checkbox"/>			
C3.		C/S	<input type="checkbox"/>	<input type="checkbox"/>			
C4.		C/A	<input type="checkbox"/>	<input type="checkbox"/>			
C5.		S/A	<input type="checkbox"/>	<input type="checkbox"/>			
C6.	Continuity test	S	<input type="checkbox"/>	<input type="checkbox"/>			
C7.		C	<input type="checkbox"/>	<input type="checkbox"/>			
C8.		A	<input type="checkbox"/>	<input type="checkbox"/>			
C9.	S/A grounding test (3)		<input type="checkbox"/>	<input type="checkbox"/>			
1D - Cables Check		Results					
D1.	Cable type and size		<input type="checkbox"/>	<input type="checkbox"/>			
D2.	Cable labelling and identification (each.....m)		<input type="checkbox"/>	<input type="checkbox"/>			
D3.	Length (m)	From	<input type="checkbox"/>	<input type="checkbox"/>			
D4.		To	<input type="checkbox"/>	<input type="checkbox"/>			
D5.		Total	<input type="checkbox"/>	<input type="checkbox"/>			
1E- Final Inspection							
E1.	Final visual inspection		<input type="checkbox"/>	<input type="checkbox"/>			
E2.	As-built marked up copy updated and available		<input type="checkbox"/>	<input type="checkbox"/>			
Notes: (1) Record only the lowest reading. (2) C/C, C/G, C/S, C/A in MegaOhm; S/A in Ohm. A minimum of 2 MegaOhm insulation resistance is to be guaranteed between conductors and ground. (3) Shield to be grounded in control room only. (*) THE QC REPORT N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : ICF 006B N° _____							
Legend: S= Shield A= Armouring C= Core G= Ground							
REMARKS:							
1F – FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR		TECHNIP		OWNER	
	NAME						
	SIGNATURE						
	DATE						



 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery			
QUALITY CONTROL FORM ICF 006B		CLIENT		INDIAN OIL CORPORATION LIMITED			
INSTRUMENT CABLES DRUM CHECK SUMMARY REPORT		PROJ. No. 080557C001		REV. 0	SH. _1_ OF _2_		
		CONTRACTOR:		ICF 006B N° _____			
GENERAL DATA							
DRUM / Identification:							
Cable type:							
Fiber Optic Cable type:		<input type="checkbox"/> Single Mode <input type="checkbox"/> Multi Mode 62,5/125 <input type="checkbox"/> Multi Mode 50/125					
Wire section See note (8) :							
THIS TEST SHALL BE CARRIED OUT BEFORE CABLE LAYING							
INSPECTIONS / CHECK (Ref. to QCP 1510.001)			N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE	
						CONTR. TECHNIP	
1A- Cables Drum Test			Results				
A1.	Insulation (Megger) 500 VDC values see notes (1) (2)	C/C		<input type="checkbox"/>	<input type="checkbox"/>		
A2.		C/G		<input type="checkbox"/>	<input type="checkbox"/>		
A3.		C/S		<input type="checkbox"/>	<input type="checkbox"/>		
A4.		C/A		<input type="checkbox"/>	<input type="checkbox"/>		
A5.		S/A		<input type="checkbox"/>	<input type="checkbox"/>		
A6.		A/G		<input type="checkbox"/>	<input type="checkbox"/>		
A7.	Continuity test See note (3)	S		<input type="checkbox"/>	<input type="checkbox"/>		
A8.		C		<input type="checkbox"/>	<input type="checkbox"/>		
A9.		A		<input type="checkbox"/>	<input type="checkbox"/>		
A10.	Fiber optic cables attenuation value in dB/km See notes (4) (5) (6) (7)	MM	@850nm		<input type="checkbox"/>		<input type="checkbox"/>
A11.			@1300nm		<input type="checkbox"/>		<input type="checkbox"/>
A12.		SM	@1310nm		<input type="checkbox"/>		<input type="checkbox"/>
A13.			@1550nm		<input type="checkbox"/>		<input type="checkbox"/>
A14.	Verify optical length See notes (4) (5) (7)			<input type="checkbox"/>	<input type="checkbox"/>		
A15.	Verify attenuation point discontinuity see notes (4) (5) (7) (8)			<input type="checkbox"/>	<input type="checkbox"/>		
1B- Cables Drum Check			Results				
B1.	Cable marking			<input type="checkbox"/>	<input type="checkbox"/>		
B2.	Drum not damaged			<input type="checkbox"/>	<input type="checkbox"/>		
B3.	Cable per specification			<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS:							

[illegible]



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		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM ICF 007A		CLIENT	INDIAN OIL CORPORATION LIMITED	
ABOVEGROUND (C. ROOM INCL.) INSTR. CABLE WAYS SUMMARY REPORT		PROJ. No. 080557C001	REV. 0	SH. _1_ OF _1_
		CONTRACTOR:		ICF 007A N° _____
GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
<input type="checkbox"/> Cable tray <input type="checkbox"/> Conduit		Type:		Material:
Conduit size or Tray width :		Cable tray length:		Covers length:
Section:	Identification no.	Ref. drawing:		Rev.
INSPECTIONS / CHECK (Ref. to QCP 1510.001)		N.A.	ACC.	Report / Reference
				INSPECTOR SIGNATURE & DATE
				CONTR.
				TECHNIP
1A - Prefabrication and Installation of supports				
A1.	Cable trays or conduits supports	<input type="checkbox"/>	<input type="checkbox"/>	
A2.	Supports painting (and retouch, if any)	<input type="checkbox"/>	<input type="checkbox"/>	
1B - Installation of conduit				
B1.	Conduits bodies and fittings installation & cleaning	<input type="checkbox"/>	<input type="checkbox"/>	
B2.	Conduit sealing	<input type="checkbox"/>	<input type="checkbox"/>	
B3.	Conduit alignment and plumbness	<input type="checkbox"/>	<input type="checkbox"/>	
1C - Installation of trays				
C1.	Cable trays installation (as per approved layout)	<input type="checkbox"/>	<input type="checkbox"/>	
C2.	Cable tray painting retouch.	<input type="checkbox"/>	<input type="checkbox"/>	
C3.	Cable separators installed properly.	<input type="checkbox"/>	<input type="checkbox"/>	
1D - Grounding				
D1.	Grounding installed properly	<input type="checkbox"/>	<input type="checkbox"/>	
1E - Installation of covers				
E1.	Cable tray covers installation.	<input type="checkbox"/>	<input type="checkbox"/>	
1F - Final inspection				
F1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	
F2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>	
Note: A key plan showing the location of the cable tray route shall be attached to this form.				
REMARKS :				
1G - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR		TECHNIP
	NAME			
	SIGNATURE			
	DATE			
				OWNER

 		PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM ICF 010A		CLIENT INDIAN OIL CORPORATION LIMITED	
INSTRUMENT CABLES CONNECTION SUMMARY REPORT		PROJ. No: 080557C001	REV. 0
		SH. _1_ OF _1_	
		CONTRACTOR: ICF 010A N° _____	
GENERAL DATA			
Cable tag:			
Source equipment:			
Destination equipment:			
INSPECTIONS / CHECK (Ref. to QCP 1510.001)		N.A.	ACC.
		Report / Reference	INSPECTOR SIGNATURE & DATE
		CONTR.	TECHNIP
1A - Source point check			
A1.	Cables identification and segregation	<input type="checkbox"/>	<input type="checkbox"/>
A2.	Terminal strips and wiring identification (core ferrule)	<input type="checkbox"/>	<input type="checkbox"/>
A3.	Cable terminals execution and connection	<input type="checkbox"/>	<input type="checkbox"/>
A4.	Screen connection	<input type="checkbox"/>	<input type="checkbox"/>
A5.	Ground connection	<input type="checkbox"/>	<input type="checkbox"/>
A6.	Cable fastening	<input type="checkbox"/>	<input type="checkbox"/>
1B - Destination point check			
B1.	Cables identification and segregation	<input type="checkbox"/>	<input type="checkbox"/>
B2.	Terminal strips and wiring identification (core ferrule)	<input type="checkbox"/>	<input type="checkbox"/>
B3.	Cable terminals execution and connection	<input type="checkbox"/>	<input type="checkbox"/>
B4.	Screen connection	<input type="checkbox"/>	<input type="checkbox"/>
B5.	Ground connection	<input type="checkbox"/>	<input type="checkbox"/>
B6.	Cable fastening	<input type="checkbox"/>	<input type="checkbox"/>
1C - Final inspection			
C1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>
C2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>
REMARKS :			
1D - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR	TECHNIP
	NAME		
	SIGNATURE		
	DATE		

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 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM		ICF 013A		CLIENT	
FIELD INSTRUMENT INSTALLATION SUMMARY REPORT		PROJ. No: 080557C001		REV. 0	SH. _1_ OF _1_
		CONTRACTOR:		ICF 013A N° _____	
GENERAL DATA					
Tag / Identification:					
MR/P.O.:					
Manufacturer & Model:					
Serial number:					
Hook Up Standard:					
Ref. drawing:					
INSPECTIONS / CHECK (Ref. to QCP 1510.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
					CONTR. TECHNIP
1A- Installation of support					
A1.	Support prefabrication	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Support installation	<input type="checkbox"/>	<input type="checkbox"/>		
1B - Secondary cable tray Installation		<input type="checkbox"/>	<input type="checkbox"/>		
1C - Signal cable Installation, Wiring and Instrument Grounding, cable gland Installation		<input type="checkbox"/>	<input type="checkbox"/>		
1D - Installation of Instrument					
D1.	Hook up installation complete and sealed	<input type="checkbox"/>	<input type="checkbox"/>		
D2.	Drains / vents	<input type="checkbox"/>	<input type="checkbox"/>		
D3.	Cable glands installed and tight	<input type="checkbox"/>	<input type="checkbox"/>		
D4.	TC / RTD fully inserted with gasket bolts and nuts tight	<input type="checkbox"/>	<input type="checkbox"/>		
D5.	Signal cable and cable tray install.	<input type="checkbox"/>	<input type="checkbox"/>		
D6.	Wiring and Grounding connection	<input type="checkbox"/>	<input type="checkbox"/>		
1E - Check					
E1.	Instrument installation and maintenance space check	<input type="checkbox"/>	<input type="checkbox"/>		
E2.	HP & LP connections check (including Impulse line and slope)	<input type="checkbox"/>	<input type="checkbox"/>		
E3.	Flow direction check	<input type="checkbox"/>	<input type="checkbox"/>		
E4.	Cable identification	<input type="checkbox"/>	<input type="checkbox"/>		
E5.	Wiring identification & connection	<input type="checkbox"/>	<input type="checkbox"/>		
E6.	Labeling	<input type="checkbox"/>	<input type="checkbox"/>		
1F - Final inspection					
F1.	Final visual inspection (including material & rating)	<input type="checkbox"/>	<input type="checkbox"/>		
F2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS:					
1G - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR		TECHNIP	OWNER
	NAME				
	SIGNATURE				
	DATE				

 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – INSTRUMENT CABLES, JUNCTION BOXES, LOCAL PANELS INSTALLATION	Project No. 080557C001	Document No. 080557C-000-QCP-1520-001	Rev. No. 0	Page 1 of 7

QUALITY CONTROL PLAN – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION

INSTRUMENT CABLES, JUNCTION BOXES & LOCAL PANELS INSTALLATION





TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
ICF-001U	“U” Unpacking
ICF-006B	“B” Before Installation
ICF-003A; ICF-004A; ICF-006A; ICF-007A; ICF-008A; ICF-010A; ICF-014A; ICF-026A; ICF-027A	“A” Installation
	Final Inspection Report

REFERENCE DOCUMENTS:

- 080557C-000-STC-1590-001 Installation Standards
- 080557C-000-JSS-1590-001 Job Specification for Instrumentation Installation Works
- 080557C-000-PP-805 Site Co-ordination


LEGENDS

H	=	HOLD (Work Stop for Inspection- RFI required)
W	=	WITNESS (RFI required)
WC	=	100% SUPERVISION AND EXAMINATION BY CONTRACTOR
S	=	SURVEILLANCE (NO RFI)
R	=	REVIEW of QC REPORTS
N/A	=	NOT APPLICABLE
P	=	PREPARATION
A	=	DOCUMENT APPROVAL
IFA	=	ISSUED FOR APPROVAL / AUTHORIZATION
!	=	WARNING (Control of document revision status)
INFO	=	FOR INFORMATION
N.A.	=	NOT ACCEPTED
ACC.	=	ACCETPED

			 Govindaraj Subramanian- External 2019.10.14 16:42:56 +05'30'	 Shyamundar Kandhulungan 2019.10.18 10:39:17 +05'30'	 Satish Sankaranarayanan 2019.10.21 16:05:52 +05'30'	 Morischristopher Jesumarian 2019.11.01 13:20:20 +05'30'
0	14.10.2019	ISSUED FOR IMPLEMENTATION	SGR	KRS	SS	JMC
REV.	DATE	STATUS	WRITTEN BY (name & visa)	CHECKED BY (name & visa)	APPROVED BY (name & visa)	AUTHOR. BY (name & visa)

DOCUMENT REVISIONS

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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – INSTRUMENT CABLES, JUNCTION BOXES, LOCAL PANELS INSTALLATION	Project No. 080557C001	Document No. 080557C-000-QCP-1520-001	Rev. No. 0	Page 2 of 7

QUALITY CONTROL PLAN

INSTRUMENTATION AND COMMUNICATION SYSTEM INSTALLATION

INSTRUMENT CABLES, JUNCTION BOXES & LOCAL PANELS INSTALLATION (1520.00)

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
A	PRELIMINARY ACTIVITIES				
A1	CHECK OF CONTRACTOR DRAWINGS REVISION STATUS	N/A	!	!	
A2	CHECK OF CONTRACTOR TECHNICAL SPECIFICATION AND PROCEDURE	N/A	P	A	
A3	CONTRACTOR'S METHOD STATEMENT (IF REQUIRED)	N/A	IFA	A	(1)
A4	AVAILABILITY OF VENDOR INSTALLATION MANUAL, DRAWING AND DOCUMENTATION	N/A	IFA	A	(1)
B	BEFORE INSTALLATION				
B1	MATERIAL IDENTIFICATION AND CONSERVATION STATUS (FOR BOTH LOOSE AND PREASSEMBLED MATERIALS) UNPACKING VISUAL INSPECTION	ICF-001U	WC	W/R	
B2	INSTRUMENT CABLES DRUM CHECK				
B2.1A	Cables Drum Test including Foundation Fieldbus Cables (as applicable)	ICF-006B	WC	W/R	
B2.1B	Cables Drum Check including Foundation Fieldbus Cables (as applicable)	ICF-006B	WC	W/R	
B2.1C	Final inspection	ICF-006B	WC	W/R	
B2.1D	Final Documentation Review	ICF-006B	P	R	

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	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – INSTRUMENT CABLES, JUNCTION BOXES, LOCAL PANELS INSTALLATION	Project No. 080557C001	Document No. 080557C-000-QCP-1520-001	Rev. No. 0	Page 3 of 7

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C	INSTALLATION				
C1	INSTALLATION OF FIELD CABLE TRAYS				
C1.1A	Prefabrication & installation of supports	ICF-007A	WC	W/R	
C1.1C	Installation of trays	ICF-007A	WC	W/R	
C1.1D	Grounding	ICF-007A	WC	W/R	
C1.1E	Installation of covers	ICF-007A	WC	R	
C1.1F	Final inspection	ICF-007A	WC	W/R	
C1.1G	Final Documentation Review	ICF-007A	P	R	
C2	INSTALLATION OF UNDERGROUND FIELD CONDUITS				
C2.1A	Conduit concrete base and trench inspection	ICF-014A	WC	W/R	
C2.1B	Conduit installation	ICF-014A	WC	W/R	
C2.1C	Conduit installation check	ICF-014A	WC	W/R	
C2.1D	Final inspection	ICF-014A	WC	W/R	
C2.1E	Final Documentation Review	ICF-014A	P	R	
C3	INSTALLATION OF STUB-UP				
C3.1A	Stub-up concrete base and trench inspection	ICF-014A	WC	W/R	
C3.1B	Stub-up installation	ICF-014A	WC	W/R	
C3.1C	Stub-up installation check	ICF-014A	WC	W/R	
C3.1D	Final inspection	ICF-014A	WC	W/R	
C3.1E	Final Documentation Review	ICF-014A	P	R	
C4	INSTALLATION OF ABOVEGROUND FIELD CONDUITS				

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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – INSTRUMENT CABLES, JUNCTION BOXES, LOCAL PANELS INSTALLATION	Project No. 080557C001	Document No. 080557C-000-QCP-1520-001	Rev. No. 0	Page 4 of 7

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C4.1A	Prefabrication & installation of supports	ICF-007A	WC	W/R	
C4.1B	Installation of conduit	ICF-007A	WC	W/R	
C4.1D	Grounding	ICF-007A	WC	W/R	
C4.1F	Final inspection	ICF-007A	WC	W/R	
C4.1G	Final Documentation Review	ICF-007A	P	R	
C5	INSTALLATION OF UNDERGROUND CABLES AND MULTICABLES				
C5.1A	Instrument Cables Drum Check including Foundation Fieldbus Cables (as applicable)	ICF-006B / ICF-006A	WC	W/R	
C5.1B	Cables Installation including Foundation Fieldbus Cables (as applicable)	ICF-006A	WC	W/R	
C5.1C	Cables Test including Foundation Fieldbus Cables (as applicable)	ICF-006A	WC	W/R	
C5.1D	Cables Check including Foundation Fieldbus Cables (as applicable)	ICF-006A	WC	W/R	
C5.1E	Final inspection	ICF-006A	WC	W/R	
C5.1F	Final Documentation Review	ICF 006A	P	R	
C6	INSTALLATION OF ABOVEGROUND CABLES AND MULTICABLES				
C6.1A	Instrument Cables Drum Check including Foundation Fieldbus Cables (as applicable)	ICF-006B / ICF-006A	WC	W/R	
C6.1B	Cables Installation including Foundation Fieldbus Cables (as applicable)	ICF-006A	WC	W/R	
C6.1C	Cables Test including Foundation Fieldbus Cables (as applicable)	ICF-006A	WC	W/R	
C6.1D	Cables Check including Foundation Fieldbus Cables (as applicable)	ICF-006A	WC	W/R	
C6.1E	Final inspection	ICF-006A	WC	W/R	
C6.1F	Final Documentation Review	ICF 006A	P	R	
C7	INSTALLATION OF CABLES AND MULTICABLES IN CONDUIT				
C7.1A	Instrument Cables Drum Check including Foundation Fieldbus Cables (as applicable)	ICF-006B / ICF-006A	WC	W/R	
C7.1B	Cables Installation including Foundation Fieldbus Cables (as applicable)	ICF-006A	WC	W/R	

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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – INSTRUMENT CABLES, JUNCTION BOXES, LOCAL PANELS INSTALLATION	Project No. 080557C001	Document No. 080557C-000-QCP-1520-001	Rev. No. 0	Page 5 of 7

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C7.1C	Cables Test including Foundation Fieldbus Cables (as applicable)	ICF-006A	WC	W/R	
C7.1D	Cables Check including Foundation Fieldbus Cables (as applicable)	ICF-006A	WC	W/R	
C7.1E	Final inspection	ICF-006A	WC	W/R	
C7.1F	Final Documentation Review	ICF 006A	P	R	
C8	CONNECTION OF CABLES AND MULTICABLES AT BOTH ENDS				
C8.1A	Source point check	ICF-010A	WC	W/R	
C8.1B	Destination point check	ICF-010A	WC	W/R	
C8.1C	Final inspection	ICF-010A	WC	W/R	
C8.1D	Final Documentation Review	ICF-010A	P	R	
C9	INSTALLATION OF FIELD MOUNTED INSTRUMENT JUNCTION BOX / FOUNDATION FIELDBUS JUNCTION BOX				
C9.1A	Installation	ICF-004A	WC	W/R	
C9.1B	Connection / wiring	ICF-004A	WC	W/R	
C8.1C	Check	ICF-004A	WC	W/R	
C9.1D	Final inspection	ICF-004A	WC	W/R	
C9.1E	Final Documentation Review	ICF-004A	P	R	
C10	INSTALLATION OF LOCAL PANELS				
C10.1A	Installation	ICF-003A	WC	W/R	
C10.1B	Connection / wiring	ICF-003A	WC	W/R	
C10.1C	Check	ICF-003A	WC	W/R	
C10.1D	Final inspection	ICF-003A	WC	W/R	
C10.1E	Final Documentation Review	ICF-003A	P	R	
C10.2	Instrument Equipment Ready for Power On				

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	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – INSTRUMENT CABLES, JUNCTION BOXES, LOCAL PANELS INSTALLATION	Project No. 080557C001	Document No. 080557C-000-QCP-1520-001	Rev. No. 0	Page 6 of 7

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C10.2A	IP Installation	ICF-003A	WC	W/R	
C10.2B	Power & Grounding Connection	ICF-003A	WC	W/R	
C10.2C	Battery Check	ICF-003A	WC	W/R	
C10.2D	Final inspection	ICF-003A	WC	W/R	
C10.3A	Final Documentation Review	ICF-003A	P	R	
C11	INSTALLATION OF FIBER OPTIC CABLES				
C11.1A	Instrument Cables Drum Check	ICF-006B / ICF-006A	WC	W/R	
C11.1B	Cables Installation	ICF-026A	WC	W/R	
C11.1C	Cables Test	ICF-026A	WC	W/R	
C11.1D	Cables Check	ICF-026A	WC	W/R	
C11.1E	Final inspection	ICF-026A	WC	W/R	
C11.1F	Final Documentation Review	ICF-026A	P	R	
C12	1520-12 INTERMEDIATE SPLICING OF FIBER OPTIC CABLES				
C12.1A	Installation	ICF-027A	WC	W/R	
C12.1B	Check	ICF-027A	WC	W/R	
C12.1C	Test	ICF-027A	WC	W/R	
C12.1D	Final inspection	ICF-027A	WC	W/R	
C12.1E	Final Documentation Review	ICF-027A	P	R	
C13	CONNECTION OF FIBER OPTIC CABLES				
C13.1A	Installation	ICF-027A	WC	W/R	
C13.1B	Check	ICF-027A	WC	W/R	
C13.1C	Test	ICF-027A	WC	W/R	

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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – INSTRUMENT CABLES, JUNCTION BOXES, LOCAL PANELS INSTALLATION	Project No. 080557C001	Document No. 080557C-000-QCP-1520-001	Rev. No. 0	Page 7 of 7

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C13.1D	Final inspection	ICF-027A	WC	W/R	
C13.1E	Final Documentation Review	ICF-027A	P	R	
C14	TEST OF FIBER OPTIC CABLES				
C14.1B	Check	ICF-027A	WC	W/R	
C14.1C	Test	ICF-027A	WC	W/R	
C14.1D	Final inspection	ICF-027A	WC	W/R	
C14.1E	Final Documentation Review	ICF-027A	P	R	
C15	INSTALLATION OF PATCH PANELS FOR FIBER OPTIC				
C15.1A	Support Installation	ICF-008A	WC	W/R	
C15.1B	Internal Connection	ICF-008A	WC	W/R	
C15.1C	Labelling & Internal Components Check	ICF-008A	WC	W/R	
C15.1D	Final inspection	ICF-008A	WC	W/R	
C15.1E	Final Documentation Review	ICF-008A	P	R	

GENERAL NOTES

1 THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THE JOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN- CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.

2 CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.

NOTES: (1) A COPY OF THE DOCUMENT WILL BE DELIVERED TO COMPANY FOR INFORMATION
(2) TO BE FILED AS PART OF LOOP CHECK FOLDERS

		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM ICF 003A		CLIENT	INDIAN OIL CORPORATION LIMITED	
INSTALLATION OF LOCAL PANELS SUMMARY REPORT		PROJ. No. 080557C001	REV. 0	SH. __ OF __
		CONTRACTOR:		ICF 003A N° _____
GENERAL DATA				
Tag / Identification:		Type (see bottom):		
Ref. Drawing & rev.		Control Room:		
MR/P.O No.:				
INSPECTIONS / CHECK (Ref. to QCP 1520.001)		N.A.	ACC.	Report / Reference
				INSPECTOR SIGNATURE & DATE
				CONTR. TECHNIP
1A- Installation				
A1.	Support installation	<input type="checkbox"/>	<input type="checkbox"/>	
A2.	JB/LP position & location	<input type="checkbox"/>	<input type="checkbox"/>	
A3.	Cable glands installed and tight	<input type="checkbox"/>	<input type="checkbox"/>	
A4.	Spare holes plugged	<input type="checkbox"/>	<input type="checkbox"/>	
A5.	Protection of LP (Canopy, weather shed)	<input type="checkbox"/>	<input type="checkbox"/>	
1B – Connection / wiring				
B1.	Internal wiring and markers done	<input type="checkbox"/>	<input type="checkbox"/>	
B2.	Screen connection	<input type="checkbox"/>	<input type="checkbox"/>	
B3.	Ground connection	<input type="checkbox"/>	<input type="checkbox"/>	
1C - Check				
C1.	Labelling	<input type="checkbox"/>	<input type="checkbox"/>	
C2.	Cable end identification (single cables and multicables)	<input type="checkbox"/>	<input type="checkbox"/>	
C3.	Terminal wiring Identification	<input type="checkbox"/>	<input type="checkbox"/>	
C4.	Components identification	<input type="checkbox"/>	<input type="checkbox"/>	
1D - Final inspection				
D1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	
D2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>	
2A - IP Installation				
A1.	Check Ingress Protection (IP) means	<input type="checkbox"/>	<input type="checkbox"/>	
2B - Power & Grounding Connection				
B1.	System cable connected (if any)	<input type="checkbox"/>	<input type="checkbox"/>	
B2.	Power supply cable connected.	<input type="checkbox"/>	<input type="checkbox"/>	
B3.	Common grounding connected	<input type="checkbox"/>	<input type="checkbox"/>	
B4.	Safety grounding connected	<input type="checkbox"/>	<input type="checkbox"/>	
2C – Battery Check				
C1.	Back-up battery check	<input type="checkbox"/>	<input type="checkbox"/>	
C2.	Readiness for power-on witnessed by vendor specialist	<input type="checkbox"/>	<input type="checkbox"/>	
2D - Final inspection				
D1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	
D2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>	
Equipment Types: Traditional Panels and Racks; DCS, PLC, AC (auxiliary cabinets), MC (marshalling cabinets), SIC (special instrument cabinets), EIC (Electrical/instrument interface cabinets), PS (power supply cabinets), PMC (package manufactured cabinets), Etc.....				
REMARKS :				
3A - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR		TECHNIP
	NAME			
	SIGNATURE			
	DATE			
OWNER				

		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM ICF 004A		CLIENT	INDIAN OIL CORPORATION LIMITED	
INSTALLATION OF FIELD MOUNTED INSTRUMENT JUNCTION BOX / FOUNDATION FIELDBUS JUNCTION BOX SUMMARY REPORT		PROJ. No. 080557C001	REV. 0	SH. _1_OF _1_
		CONTRACTOR:		ICF 004A N° _____
GENERAL DATA				
Tag / Identification:				
Ref. Drawing & rev.				
MR/P.O No.:				
INSPECTIONS / CHECK (Ref. to QCP 1520.001)	N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
				CONTR. TECHNIP
1A- Installation				
A1. Support installation	<input type="checkbox"/>	<input type="checkbox"/>		
A2. JB/LP position & location	<input type="checkbox"/>	<input type="checkbox"/>		
A3. Cable glands installed and tight	<input type="checkbox"/>	<input type="checkbox"/>		
A4. Spare holes plugged	<input type="checkbox"/>	<input type="checkbox"/>		
A5. Protection of JB (Canopy, weather shed)	<input type="checkbox"/>	<input type="checkbox"/>		
1B – Connection / wiring				
B1. Internal wiring and markers done	<input type="checkbox"/>	<input type="checkbox"/>		
B2. Screen connection	<input type="checkbox"/>	<input type="checkbox"/>		
B3. Ground connection	<input type="checkbox"/>	<input type="checkbox"/>		
B4. Spur Junction Box Terminator Connection	<input type="checkbox"/>	<input type="checkbox"/>		
1C - Check				
C1. Labelling	<input type="checkbox"/>	<input type="checkbox"/>		
C2. Cable end identification (single cables and multicables)	<input type="checkbox"/>	<input type="checkbox"/>		
C3. Terminal wiring Identification	<input type="checkbox"/>	<input type="checkbox"/>		
C4. Components identification	<input type="checkbox"/>	<input type="checkbox"/>		
C5. FF Marking	<input type="checkbox"/>	<input type="checkbox"/>		
C6. Voltage level at FF JB end	<input type="checkbox"/>	<input type="checkbox"/>		
C7. Signal level at FF JB end	<input type="checkbox"/>	<input type="checkbox"/>		
1D - Final inspection				
D1. Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>		
D2. As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS :				
1E - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR		TECHNIP
	NAME			
	SIGNATURE			
	DATE			

				PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM ICF 006A				CLIENT INDIAN OIL CORPORATION LIMITED	
INSTRUMENT CABLES INSTALLATION SUMMARY REPORT				PROJ. No. 080557C001 REV. 0 SH. _1_OF _1_	
				CONTRACTOR: _____ ICF 006A N° _____	
GENERAL DATA					
Cable tag / ID: _____				Connected from: _____	
Cable type: _____				Connected to: _____	
INSPECTIONS / CHECK (Ref. to QCP 1520.001)			N.A.	AC C.	Report / Reference
					INSPECTOR SIGNATURE & DATE
					CONTR. TECHNIP
1A – Instrument Cable Drum Check			<input type="checkbox"/>	<input type="checkbox"/>	ICF 006B (*)
1B - Cables Installation including FF cables (as applicable)			Results		
B1.	Minimum separation from Electrical cables		<input type="checkbox"/>	<input type="checkbox"/>	
B2.	Cable fastening		<input type="checkbox"/>	<input type="checkbox"/>	
B3.	Cable laying and segregation		<input type="checkbox"/>	<input type="checkbox"/>	
1C - Cables Test including FF cables (as applicable)			Results		
C1.	Insulation (Megger) 500 VDC values see notes: (1) (2)	C/C	<input type="checkbox"/>	<input type="checkbox"/>	
C2.		C/G	<input type="checkbox"/>	<input type="checkbox"/>	
C3.		C/S	<input type="checkbox"/>	<input type="checkbox"/>	
C4.		C/A	<input type="checkbox"/>	<input type="checkbox"/>	
C5.		S/A	<input type="checkbox"/>	<input type="checkbox"/>	
C6.	Continuity test	S	<input type="checkbox"/>	<input type="checkbox"/>	
C7.		C	<input type="checkbox"/>	<input type="checkbox"/>	
C8.		A	<input type="checkbox"/>	<input type="checkbox"/>	
C9.	S/A grounding test (3)		<input type="checkbox"/>	<input type="checkbox"/>	
1D - Cables Check including FF cables (as applicable)			Results		
D1.	Cable type and size		<input type="checkbox"/>	<input type="checkbox"/>	
D2.	Cable labelling and identification (each.....m)		<input type="checkbox"/>	<input type="checkbox"/>	
D3.	Length (m)	From	<input type="checkbox"/>	<input type="checkbox"/>	
D4.		To	<input type="checkbox"/>	<input type="checkbox"/>	
D5.		Total	<input type="checkbox"/>	<input type="checkbox"/>	
1E- Final Inspection					
E1.	Final visual inspection		<input type="checkbox"/>	<input type="checkbox"/>	
E2.	As-built marked up copy updated and available		<input type="checkbox"/>	<input type="checkbox"/>	
Notes: (1) Record only the lowest reading. (2) C/C, C/G, C/S, C/A in MegaOhm; S/A in Ohm. A minimum of 2 MegaOhm insulation resistance is to be guaranteed between conductors and ground. (3) Shield to be grounded in control room only. (*) THE QC REPORT N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : ICF 006B N° _____					
Legend: S= Shield A= Armouring C= Core G= Ground					
REMARKS: _____					
1F – FINAL DOC. REVIEW	INSPECTORS		CONTRACTOR		TECHNIP
	NAME				
	SIGNATURE				
	DATE				
OWNER					

		PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery		
QUALITY CONTROL FORM ICF 006B		CLIENT INDIAN OIL CORPORATION LIMITED		
INSTRUMENT CABLES DRUM CHECK SUMMARY REPORT		PROJ. No. 080557C001 REV. 0 SH. _1_OF _2_		
		CONTRACTOR: _____ ICF 006B N° _____		
GENERAL DATA				
DRUM / Identification:				
Cable type:				
Fiber Optic Cable type:		<input type="checkbox"/> Single Mode <input type="checkbox"/> Multi Mode 62,5/125 <input type="checkbox"/> Multi Mode 50/125		
Wire section See note (8) :				
THIS TEST SHALL BE CARRIED OUT BEFORE CABLE LAYING				
INSPECTIONS / CHECK (Ref. to QCP 1520.001)		N.A.	ACC.	
		Report / Reference	INSPECTOR SIGNATURE & DATE	
		CONTR.	TECHNIP	
1A- Cables Drum Test including FF cables (as applicable)		Results		
A1.	Insulation (Megger) 500 VDC values see notes (1) (2)	C/C	<input type="checkbox"/>	
A2.		C/G	<input type="checkbox"/>	
A3.		C/S	<input type="checkbox"/>	
A4.		C/A	<input type="checkbox"/>	
A5.		S/A	<input type="checkbox"/>	
A6.		A/G	<input type="checkbox"/>	
A7.	Continuity test See note (3)	S	<input type="checkbox"/>	
A8.		C	<input type="checkbox"/>	
A9.		A	<input type="checkbox"/>	
A10.	Fiber optic cables attenuation value in dB/km See notes (4) (5) (6) (7)	MM	@850nm	<input type="checkbox"/>
A11.			@1300nm	<input type="checkbox"/>
A12.		SM	@1310nm	<input type="checkbox"/>
A13.			@1550nm	<input type="checkbox"/>
A14.	Verify optical length See notes (4) (5) (7)		<input type="checkbox"/>	
A15.	Verify attenuation point discontinuity see notes (4) (5) (7) (8)		<input type="checkbox"/>	
1B- Cables Drum Check including FF cables (as applicable)		Results		
B1.	Cable marking		<input type="checkbox"/>	
B2.	Drum not damaged		<input type="checkbox"/>	
B3.	Cable per specification		<input type="checkbox"/>	
REMARKS:				

[illegible]

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		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM ICF 007A		CLIENT	INDIAN OIL CORPORATION LIMITED	
ABOVEGROUND (C.ROOM INCL.) INSTR. CABLE WAYS SUMMARY REPORT		PROJ. No. 080557C001	REV. 0	SH. _1_OF _1_
		CONTRACTOR:		ICF 007A N° _____
GENERAL DATA				
Location / area:		System / subsystem:		Date (dd/mm/yy):
<input type="checkbox"/> Cable tray <input type="checkbox"/> Conduit <input type="checkbox"/> Cable duct		Type:		Material:
Conduit size or Tray or Duct width :		Cable tray / duct length:		Covers length:
Section:	Identification no.	Ref. drawing:		Rev.
INSPECTIONS / CHECK (Ref. to QCP 1520.001)		N.A.	ACC.	Report / Reference
				INSPECTOR SIGNATURE & DATE
				CONTR. TECHNIP
1A - Prefabrication and Installation of supports				
A1.	Cable trays or conduits supports	<input type="checkbox"/>	<input type="checkbox"/>	
A2.	Supports painting (and retouch, if any)	<input type="checkbox"/>	<input type="checkbox"/>	
1B - Installation of conduit				
B1.	Conduits bodies and fittings installation & cleaning	<input type="checkbox"/>	<input type="checkbox"/>	
B2.	Conduit sealing	<input type="checkbox"/>	<input type="checkbox"/>	
B3.	Conduit alignment and plumbness	<input type="checkbox"/>	<input type="checkbox"/>	
1C - Installation of trays / ducts				
C1.	Cable trays / ducts installation (as per approved layout)	<input type="checkbox"/>	<input type="checkbox"/>	
C2.	Cable tray painting retouch.	<input type="checkbox"/>	<input type="checkbox"/>	
C3.	Cable separators installed properly.	<input type="checkbox"/>	<input type="checkbox"/>	
1D - Grounding				
D1.	Grounding installed properly	<input type="checkbox"/>	<input type="checkbox"/>	
1E - Installation of covers				
E1.	Cable tray / duct covers installation.	<input type="checkbox"/>	<input type="checkbox"/>	
1F - Final inspection				
F1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	
F2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>	
Note: A key plan showing the location of the cable tray / duct route shall be attached to this form.				
REMARKS :				
1G - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR		TECHNIP
	NAME			
	SIGNATURE			
	DATE			

		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
QUALITY CONTROL FORM ICF 010A		CLIENT	INDIAN OIL CORPORATION LIMITED		
INSTRUMENT CABLES CONNECTION SUMMARY REPORT		PROJ. No. 080557C001	REV. 0	SH. _1_OF _1_	
		CONTRACTOR:		ICF 010A N° _____	
GENERAL DATA					
Cable tag:					
Source equipment:					
Destination equipment:					
INSPECTIONS / CHECK (Ref. to QCP 1520.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
					CONTR. TECHNIP
1A - Source point check					
A1.	Cables identification and segregation	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Terminal strips and wiring identification (core ferrule)	<input type="checkbox"/>	<input type="checkbox"/>		
A3.	Cable terminals execution and connection	<input type="checkbox"/>	<input type="checkbox"/>		
A4.	Screen connection	<input type="checkbox"/>	<input type="checkbox"/>		
A5.	Ground connection	<input type="checkbox"/>	<input type="checkbox"/>		
A6.	Cable fastening	<input type="checkbox"/>	<input type="checkbox"/>		
1B - Destination point check					
B1.	Cables identification and segregation	<input type="checkbox"/>	<input type="checkbox"/>		
B2.	Terminal strips and wiring identification (core ferrule)	<input type="checkbox"/>	<input type="checkbox"/>		
B3.	Cable terminals execution and connection	<input type="checkbox"/>	<input type="checkbox"/>		
B4.	Screen connection	<input type="checkbox"/>	<input type="checkbox"/>		
B5.	Ground connection	<input type="checkbox"/>	<input type="checkbox"/>		
B6.	Cable fastening	<input type="checkbox"/>	<input type="checkbox"/>		
1C - Final inspection					
C1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS :					
1D - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR		TECHNIP	OWNER
	NAME				
	SIGNATURE				
	DATE				


		PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery																	
QUALITY CONTROL FORM ICF 026A		CLIENT INDIAN OIL CORPORATION LIMITED																	
INSTRUMENT FIBER OPTIC INSTALLATION SUMMARY REPORT		PROJ. No. 080557C001	REV. 0																
		SH. _1_ OF _2_																	
		CONTRACTOR: ICF 026A N° _____																	
GENERAL DATA																			
Cable Drum Identification (indicate the reference to QCF 006B N°): QCF 006B N° _____																			
Cable tag / ID																			
Fiber optic cable type:		<input type="checkbox"/> Single Mode <input type="checkbox"/> Multi Mode 62,5/125 <input type="checkbox"/> Multi Mode 50/125																	
Fiber q.ty and characteristics:																			
Connected from:																			
Connected to:																			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="3" style="text-align: center;">INSPECTIONS / CHECK (Ref. to QCP 1520.001)</th> <th style="text-align: center;">N.A.</th> <th style="text-align: center;">ACC.</th> <th style="text-align: center;">Report / Reference</th> <th colspan="2" style="text-align: center;">INSPECTOR SIGNATURE & DATE</th> </tr> <tr> <th colspan="3"></th> <th></th> <th></th> <th></th> <th style="text-align: center;">CONTR.</th> <th style="text-align: center;">TECHNIP</th> </tr> </table>				INSPECTIONS / CHECK (Ref. to QCP 1520.001)			N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE								CONTR.	TECHNIP
INSPECTIONS / CHECK (Ref. to QCP 1520.001)			N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE													
						CONTR.	TECHNIP												
1A – Instrument Cable Drum Check			<input type="checkbox"/>	<input type="checkbox"/>	ICF 006B (*)														
1B - Cables Installation			Results																
B1.	Cable fastening		<input type="checkbox"/>	<input type="checkbox"/>															
B2.	Cable laying and segregation See note (1)		<input type="checkbox"/>	<input type="checkbox"/>															
B3.	Cable Joint box and pit installation (where applicable)		<input type="checkbox"/>	<input type="checkbox"/>															
B4.	Grounding		<input type="checkbox"/>	<input type="checkbox"/>															
B5.	Bonding		<input type="checkbox"/>	<input type="checkbox"/>															
B6.	Insulation (Megger) 500 VDC values See notes (2) (3)	A/G	<input type="checkbox"/>	<input type="checkbox"/>															
1C - Cables Test			Results																
C1.	Fiber optic cables attenuation value in dB/km	MM	@850nm	<input type="checkbox"/>	<input type="checkbox"/>														
C2.			@1300nm	<input type="checkbox"/>	<input type="checkbox"/>														
C3.	See notes (4) (5) (6) (7)	SM	@1310nm	<input type="checkbox"/>	<input type="checkbox"/>														
C4.			@1550nm	<input type="checkbox"/>	<input type="checkbox"/>														
C5.	Optical length See notes (4) (5) (7)		<input type="checkbox"/>	<input type="checkbox"/>															
C6.	Attenuation point discontinuity See notes (4) (5) (7) (8)		<input type="checkbox"/>	<input type="checkbox"/>															
1D - Cables Check			Results																
D1.	Cable type and size		<input type="checkbox"/>	<input type="checkbox"/>															
D2.	Cable labelling and identification (each.....m)		<input type="checkbox"/>	<input type="checkbox"/>															
REMARKS:																			

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		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
QUALITY CONTROL FORM ICF 026A		CLIENT	INDIAN OIL CORPORATION LIMITED		
INSTRUMENT FIBER OPTIC INSTALLATION SUMMARY REPORT		PROJ. No. 080557C001	REV. 0	SH. <u>2</u> OF <u>2</u>	
		CONTRACTOR:		ICF 026A N° _____	
INSPECTIONS / CHECK (Ref. to QCP 1520.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
					CONTR. TECHNIP
1E- Final Inspection					
E1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>		
E2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
Notes: (1) Cable installation shall be carried out in accordance with Manufacturer's instructions (2) Record only the lowest reading (3) A/G in Mega Ohm. A minimum of 2 Mega Ohm insulation resistance is to be guaranteed between armour and ground. (4) Test to be carried out in accordance with ISO/IEC 11801-am2 (5) Measures with Optical Time Domain Reflectometer (OTDR) (6) Multimode: Max attenuation @850nm shall be < 3,50 dB/km each fiber, Max attenuation @1300nm shall be < 1,5 dB/km each fiber Single mode: Max attenuation @1310nm and 1550nm shall be < 0,4 dB/km each fiber (7) OTDR Test printout shall be attached by Subcontractor to this quality form and the Test Data shall be provided Contractor with electronic media as well (8) Multimode attenuation point discontinuity <0,2 dB Single mode attenuation point discontinuity <0,1 dB (*) THE QC REPORT N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : ICF 006B N° _____					
WARNING: Never look directly into the end of an optical fiber. If laser light is present, it can seriously damage the eye.					
REMARKS:					
1F – FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR		TECHNIP	OWNER
	NAME				
	SIGNATURE				
	DATE				

 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM		ICF 027A		CLIENT	
INSTRUMENT FIBER OPTIC CABLES SPLICING AND TERMINATION SUMMARY REPORT		PROJ. No. 080557C001		REV. 0	SH. _1_OF _2_
		CONTRACTOR:		ICF 027A N° _____	
GENERAL DATA					
Cable tag / ID					
Fiber optic cable type:		<input type="checkbox"/> Single Mode <input type="checkbox"/> Multi Mode 62,5/125 <input type="checkbox"/> Multi Mode 50/125			
Fiber q.ty and characteristics:					
Connected from:					
Connected to:					
INSPECTIONS / CHECK (Ref. to QCP 1520.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
					CONTR. TECHNIP
1A - Installation		Results			
A1.	Preliminary trench survey inspection for U/G Fiber Optic cables splicing on site; bed preparation check		<input type="checkbox"/>	<input type="checkbox"/>	
A2.	F.O. Cables marking		<input type="checkbox"/>	<input type="checkbox"/>	
A3.	F.O. Fibers identification & splicing		<input type="checkbox"/>	<input type="checkbox"/>	
A4.	Grounding		<input type="checkbox"/>	<input type="checkbox"/>	
A5.	Bonding		<input type="checkbox"/>	<input type="checkbox"/>	
A6.	Insulation (Megger) 500 VDC values see notes (1) (2)	A/G	<input type="checkbox"/>	<input type="checkbox"/>	
1B - Check		Results			
B1.	Fibers splicing executed		<input type="checkbox"/>	<input type="checkbox"/>	
B2.	F.O. Termination and connection on patch panel		<input type="checkbox"/>	<input type="checkbox"/>	
1C - Test		Results			
C1.	Fiber optic cables attenuation value in dB/km	MM	@850nm	<input type="checkbox"/>	<input type="checkbox"/>
C2.			@1300nm	<input type="checkbox"/>	<input type="checkbox"/>
C3.	See notes (4) (5) (6) (7)	SM	@1310nm	<input type="checkbox"/>	<input type="checkbox"/>
C4.			@1550nm	<input type="checkbox"/>	<input type="checkbox"/>
C5.	Optical length See notes (4) (5) (7)		<input type="checkbox"/>	<input type="checkbox"/>	
C6.	Attenuation point discontinuity See notes (4) (5) (7) (8)		<input type="checkbox"/>	<input type="checkbox"/>	
C7.	Splice attenuation See notes (4) (5) (7) (9)		<input type="checkbox"/>	<input type="checkbox"/>	
C8.	Connector loss (per pair) See notes (4) (5) (7) (10)		<input type="checkbox"/>	<input type="checkbox"/>	
C9.	Connector return loss See notes (4) (5) (7) (11)		<input type="checkbox"/>	<input type="checkbox"/>	
C10.	Total attenuation See note (3)		<input type="checkbox"/>	<input type="checkbox"/>	
C11.	Continuity check See note (3)		<input type="checkbox"/>	<input type="checkbox"/>	
C12.	Polarity check See note (3)		<input type="checkbox"/>	<input type="checkbox"/>	

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QUALITY CONTROL PLAN - INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION

FIELD INSTRUMENTATION WORKS





TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
ICF-001U	"U" Unpacking
ICF-005A; ICF-011A; ICF-012A; ICF-013A; ICF-015A; ICF-020A; ICF-022A; ICF-023A; ICF-028A; ICF-029A; ICF-034A; ICF-036A; ICF-037A; ICF-038A	"A" Bench Test & Installation
ICF-039A	Final Inspection Report

REFERENCE DOCUMENTS:

- 080557C-000-STC-1590-001 Installation Standards
- 080557C-000-JSS-1590-001 Job Specification for Instrumentation Installation Works
- 080557C-000-PP-805 Site Co-ordination

LEGENDS

H	=	HOLD (Work Stop for Inspection- RFI required)
W	=	WITNESS (RFI required)
WC	=	100% SUPERVISION AND EXAMINATION BY CONTRACTOR
S	=	SURVEILLANCE (NO RFI)
R	=	REVIEW of QC REPORTS
N/A	=	NOT APPLICABLE
P	=	PREPARATION
A	=	DOCUMENT APPROVAL
IFA	=	ISSUED FOR APPROVAL / AUTHORIZATION
!	=	WARNING (Control of document revision status)
INFO	=	FOR INFORMATION
N.A.	=	NOT ACCEPTED
ACC.	=	ACCEPTED

			 Govindraj Subramanian- External 2019.10.14 16:43:46 +05'30'	 Shyamounder Kanthalurajan 2019.10.18 10:40:11 +05'30'	 Srimam Sankaranarayanan 2019.10.21 16:06:43 +05'30'	 Morischristopher Jesumarian 2019.11.01 13:20:58 +05'30'
0	14-10-2019	ISSUED FOR IMPLEMENTATION	SGR	KRS	SS	JMC
REV.	DATE	STATUS	WRITTEN BY (name & visa)	CHECKED BY (name & visa)	APPROVED BY (name & visa)	AUTHOR. BY (name & visa)

DOCUMENT REVISIONS

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QUALITY CONTROL PLAN

INSTRUMENTATION AND COMMUNICATION SYSTEM INSTALLATION

FIELD INSTRUMENTATION WORKS

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
A	PRELIMINARY ACTIVITIES				
A1	CHECK OF CONTRACTOR DRAWINGS REVISION STATUS	N/A	!	!	
A2	CHECK OF CONTRACTOR TECHNICAL SPECIFICATION AND PROCEDURE	N/A	IFA	A	
A3	CONTRACTOR'S METHOD STATEMENT (IF REQUIRED)	N/A	IFA	A	(1)
A4	AVAILABILITY OF VENDOR INSTALLATION MANUAL, DRAWING AND DOCUMENTATION	N/A	WC	R	(1)
B	UNPACKING				
B1	MATERIAL IDENTIFICATION AND CONSERVATION STATUS (FOR BOTH LOOSE AND PREASSEMBLED MATERIALS) UNPACKING VISUAL INSPECTION	ICF-001U	WC	W/R	
B2	CHECK OF FF MARK	ICF-001U	WC	W/R	
C	BENCH TEST & INSTALLATION				
C1	ELECTRONIC FLOW TRANSMITTERS DIFFERENTIAL PRESSURE TYPE				
C1.1	Field Instrument Calibration Test				
C1.1A	Check	ICF-005A	WC	W/R	
C1.1B	Signal Calibration	ICF-005A	WC	W/R	
C1.1C	Final inspection	ICF-005A	WC	W/R	

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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C1.2	Field instrument Installation				
C1.2A	Installation of supports	ICF-005A	WC	W/R	
C1.2B	Secondary Cable tray installation	ICF-005A	WC	W/R	
C1.2C	Signal cable installation, wiring and instrument grounding, cable gland installation	ICF-005A	WC	W/R	
C1.2D	Installation of instrument	ICF-005A	WC	W/R	
C1.2E	Instrument Check	ICF-005A	WC	W/R	
C1.2F	Final inspection	ICF-005A	WC	W/R	
C1.3	Instrument Impulse Line Pressure Test				
C1.3A	Ferrules Installation	ICF-005A	WC	W/R	
C1.3B	Tubing/Piping Test, Prefabricated Hook-up Pressure Test	ICF-005A	WC	W/R	
C1.3C	Final inspection	ICF-005A	WC	W/R	
C1.4A	Final Documentation Review	ICF-005A	P	R	
C1.4B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C2	FLOW INSTRUMENTS PURGE SYSTEM				
C2.1	Field instrument Installation				
C2.1A	Installation of support	ICF-012A	WC	W/R	
C2.1B	Installation of instrument	ICF-012A	WC	W/R	
C2.1C	Check	ICF-012A	WC	W/R	
C2.1D	Final inspection	ICF-012A	WC	W/R	
C2.2	Instrument Impulse Line Pressure Test				

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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C2.2A	Ferrules Installation	ICF-012A	WC	W/R	
C2.2B	Tubing/Piping Test, Prefabricated Hook-up Pressure Test	ICF-012A	WC	W/R	
C2.2C	Final inspection	ICF-012A	WC	W/R	
C2.3A	Final Documentation Review	ICF-012A	P	R	
C3	FLOW INSTRUMENTS STEAM / ELECTRICAL TRACING				
C3.1A	Installation	ICF-029A	WC	W/R	
C3.1B	Check	ICF-029A	WC	W/R	
C3.1C	Final inspection	ICF-029A	WC	W/R	
C3.1D	Final Documentation Review	ICF-029A	P	R	
C4	ELECTRONIC LEVEL TRANSMITTERS DISPLACEMENT TYPE				
C4.1	Field Instrument Calibration Test				
C4.1A	Check	ICF-020A	WC	W/R	
C4.1B	Signal Calibration	ICF-020A	WC	W/R	
C4.1C	Final inspection	ICF-020A	WC	W/R	
C4.2	Field instrument Installation				
C4.2A	Installation of supports	ICF-020A	WC	W/R	
C4.2B	Secondary Cable tray installation	ICF-020A	WC	W/R	
C4.2C	Signal cable installation, wiring and instrument grounding, cable gland installation	ICF-020A	WC	W/R	
C4.2D	Installation of instrument	ICF-020A	WC	W/R	

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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C4.2E	Instrument Check	ICF-020A	WC	W/R	
C4.2F	Final inspection	ICF-020A	WC	W/R	
C4.3A	Final Documentation Review	ICF-020A	P	R	
C4.4A	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C5	LEVEL GAUGES				
C5.1A	Installation of support	ICF-013A	WC	W/R	
C5.1D	Installation of instrument	ICF-013A	WC	W/R	
C5.1E	Check	ICF-013A	WC	W/R	
C5.1F	Final inspection	ICF-013A	WC	W/R	
C5.1G	Final Documentation Review	ICF-013A	P	R	
C6	ELECTRONIC LEVEL INSTRUMENTS DIFFERENTIAL PRESSURE TYPE				
C6.1	Field Instrument Calibration Test				
C6.1A	Check	ICF-005A	WC	W/R	
C6.1B	Signal Calibration	ICF-005A	WC	W/R	
C6.1C	Final inspection	ICF-005A	WC	W/R	
C6.2	Field instrument Installation				
C6.2A	Installation of supports	ICF-005A	WC	W/R	
C6.2B	Secondary Cable tray installation	ICF-005A	WC	W/R	
C6.2C	Signal cable installation, wiring and instrument grounding, cable gland installation	ICF-005A	WC	W/R	
C6.2D	Installation of instrument	ICF-005A	WC	W/R	

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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C6.2E	Instrument Check	ICF-005A	WC	W/R	
C6.2F	Final inspection	ICF-005A	WC	W/R	
C6.3	Instrument Impulse Line Pressure Test				
C6.3A	Ferrules Installation	ICF-005A	WC	W/R	
C6.3B	Tubing/Piping Test, Prefabricated Hook-up Pressure Test	ICF-005A	WC	W/R	
C6.3C	Final inspection	ICF-005A	WC	W/R	
C6.4A	Final Documentation Review	ICF-005A	P	R	
C6.4B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C7	INSTALLATION OF FLOAT TYPE LEVEL INDICATORS				
C7.1	Tank Gauging System Installation				
C7.1A	Mechanical installation	ICF-015A	WC	W/R	
C7.1B	Electrical connection	ICF-015A	WC	W/R	
C7.1C	Instrument Check	ICF-015A	WC	W/R	
C7.1D	Final inspection	ICF-015A	WC	W/R	
C7.1E	Final Documentation Review	ICF-015A	P	R	
C7.1F	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C8	TANK -GAUGING				
C8.1	Tank Gauging System Installation				
C8.1A	Mechanical installation	ICF-015A	WC	W/R	
C8.1B	Electrical connection	ICF-015A	WC	W/R	

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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C8.1C	Instrument Check	ICF-015A	WC	W/R	
C8.1D	Final inspection	ICF-015A	WC	W/R	
C8.1E	Final Documentation Review	ICF-015A	P	R	
C8.1F	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C9	LEVEL SWITCHES				
C9.1	Instrument Switches Calibration				
C9.1A	Contact Check	ICF-022A	WC	W/R	
C9.1B	Set Point Calibration	ICF-022A	WC	W/R	
C9.1C	Final inspection	ICF-022A	WC	W/R	
C9.2	Field instrument Installation				
C9.2A	Installation of supports	ICF-022A	WC	W/R	
C9.2B	Secondary Cable tray installation	ICF-022A	WC	W/R	
C9.2C	Signal cable installation, wiring and instrument grounding, cable gland installation	ICF-022A	WC	W/R	
C9.2D	Installation of instrument	ICF-022A	WC	W/R	
C9.2E	Instrument Check	ICF-022A	WC	W/R	
C9.2F	Final inspection	ICF-022A	WC	W/R	
C9.3A	Final Documentation Review	ICF-022A	P	R	
C9.3B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C10	LEVEL INSTRUMENTS PURGE SYSTEM				
C10.1	Field instrument Installation				

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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C10.1A	Installation of support	ICF-012A	WC	W/R	
C10.1B	Installation of instrument	ICF-012A	WC	W/R	
C10.1C	Check	ICF-012A	WC	W/R	
C10.1D	Final inspection	ICF-012A	WC	W/R	
C10.2	Instrument Impulse Line Pressure Test				
C10.2A	Ferrules Installation	ICF-012A	WC	W/R	
C10.2B	Tubing/Piping Test, Prefabricated Hook-up Pressure Test	ICF-012A	WC	W/R	
C10.2C	Final inspection	ICF-012A	WC	W/R	
C10.3A	Final Documentation Review	ICF-012A	P	R	
C11	SPECIAL (NUCLEAR, RADAR) LEVEL INSTRUMENTS				
C11.1	Field instrument Installation				
C11.2A	Installation of supports	ICF-013A	WC	W/R	
C11.2B	Secondary Cable tray installation	ICF-013A	WC	W/R	
C11.2C	Signal cable installation, wiring and instrument grounding, cable gland installation	ICF-013A	WC	W/R	
C11.2D	Installation of instrument	ICF-013A	WC	W/R	
C11.2E	Instrument Check	ICF-013A	WC	W/R	
C11.2F	Final inspection	ICF-013A	WC	W/R	
C11.1G	Final Documentation Review	ICF-013A	P	R	
C11.1H	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C12	LEVEL INSTRUMENTS STEAM / ELECTRICAL TRACING				

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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C12.1A	Installation	ICF-029A	WC	W/R	
C12.1B	Check	ICF-029A	WC	W/R	
C12.1C	Final inspection	ICF-029A	WC	W/R	
C12.1D	Final Documentation Review	ICF-029A	P	R	
C13A	ELECTRONIC PRESSURE TRANSMITTERS				
C13A.1	Field Instrument Calibration Test				
C13A.1A	Check	ICF-005A	WC	W/R	
C13A.1B	Signal Calibration	ICF-005A	WC	W/R	
C13A.1C	Final inspection	ICF-005A	WC	W/R	
C13A.2	Field instrument Installation				
C13A.2A	Installation of supports	ICF-005A	WC	W/R	
C13A.2B	Secondary Cable tray installation	ICF-005A	WC	W/R	
C13A.2C	Signal cable installation, wiring and instrument grounding, cable gland installation	ICF-005A	WC	W/R	
C13A.2D	Installation of instrument	ICF-005A	WC	W/R	
C13A.2E	Instrument Check	ICF-005A	WC	W/R	
C13A.2F	Final inspection	ICF-005A	WC	W/R	
C13A.3	Instrument Impulse Line Pressure Test				
C13A.3A	Ferrules Installation	ICF-005A	WC	W/R	
C13A.3B	Tubing/Piping Test, Prefabricated Hook-up Pressure Test	ICF-005A	WC	W/R	
C13A.3C	Final inspection	ICF-005A	WC	W/R	
C13A.4A	Final Documentation Review	ICF-005A	P	R	

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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C13A.4B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C14	LOCAL PRESSURE GAUGES				
C14.1	Field Instrument Calibration Test				
C14.1A	Check	ICF-005A	WC	W/R	
C14.1B	Signal Calibration	ICF-005A	WC	W/R	
C14.1C	Final inspection	ICF-005A	WC	W/R	
C14.2	Field instrument Installation				
C14.2A	Installation of supports	ICF-005A	WC	W/R	
C14.2D	Installation of instrument	ICF-005A	WC	W/R	
C14.2E	Instrument Check	ICF-005A	WC	W/R	
C14.2F	Final inspection	ICF-005A	WC	W/R	
C14.3	Instrument Impulse Line Pressure Test (if any)				
C14.3A	Ferrules Installation (if any)	ICF-005A	WC	W/R	
C14.3B	Tubing/Piping Test, Prefabricated Hook-up Pressure Test (if any)	ICF-005A	WC	W/R	
C14.3C	Final inspection (if any)	ICF-005A	WC	W/R	
C14.4A	Final Documentation Review	ICF-005A			
C15	DRAFT GAUGES				
C15.1	Field Instrument Calibration Test				
C15.1A	Check	ICF-005A	WC	W/R	
C15.1B	Signal Calibration	ICF-005A	WC	W/R	

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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C15.1C	Final inspection	ICF-005A	WC	W/R	
C15.2	Field instrument Installation				
C15.2A	Installation of supports	ICF-005A	WC	W/R	
C15.2D	Installation of instrument	ICF-005A	WC	W/R	
C15.2E	Instrument Check	ICF-005A	WC	W/R	
C15.2F	Final inspection	ICF-005A	WC	W/R	
C15.3	Instrument Impulse Line Pressure Test				
C15.3A	Ferrules Installation	ICF-005A	WC	W/R	
C15.3B	Tubing/Piping Test, Prefabricated Hook-up Pressure Test	ICF-005A	WC	W/R	
C15.3C	Final inspection	ICF-005A	WC	W/R	
C15.4A	Final Documentation Review	ICF-005A	P	R	
C16	PRESSURE INSTRUMENTS PURGE SYSTEM				
C16.1	Field instrument Installation				
C16.1A	Installation of support	ICF-012A	WC	W/R	
C16.1B	Installation of instrument	ICF-012A	WC	W/R	
C16.1C	Check	ICF-012A	WC	W/R	
C16.1D	Final inspection	ICF-012A	WC	W/R	
C16.2	Instrument Impulse Line Pressure Test				
C16.2A	Ferrules Installation	ICF-012A	WC	W/R	
C16.2B	Tubing/Piping Test, Prefabricated Hook-up Pressure Test	ICF-012A	WC	W/R	
C16.2C	Final inspection	ICF-012A	WC	W/R	

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 TechnipFMC		 IndianOil	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery	
			CLIENT	INDIAN OIL CORPORATION LIMITED	
QCP - INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – FIELD INSTRUMENTATION WORKS		Project No. 080557C001	Document No. 080557C-000-QCP-1530-001		Rev. No. 0
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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C16.3A	Final Documentation Review	ICF-012A			
C17	PRESSURE INSTRUMENTS STEAM / ELECTRICAL TRACING				
C17.1A	Installation	ICF-029A	WC	W/R	
C17.1B	Check	ICF-029A	WC	W/R	
C17.1C	Final inspection	ICF-029A	WC	W/R	
C17.1D	Final Documentation Review	ICF-029A	P	R	
C18	THERMOELEMENTS AND THERMOWELLS				
C18.1	Field Instrument Calibration Test				
C18.1A	Check	ICF-020A	WC	W/R	
C18.1B	Signal Calibration	ICF-020A	WC	W/R	
C18.1C	Final inspection	ICF-020A	WC	W/R	
C18.2	Field instrument Installation				
C18.2A	Installation of supports	ICF-020A	WC	W/R	
C18.2B	Secondary Cable tray installation	ICF-020A	WC	W/R	
C18.2C	Signal cable installation, wiring and instrument grounding, cable gland installation	ICF-020A	WC	W/R	
C18.2D	Installation of instrument	ICF-020A	WC	W/R	
C18.2E	Instrument Check	ICF-020A	WC	W/R	
C18.2F	Final inspection	ICF-020A	WC	W/R	
C18.3A	Final Documentation Review	ICF-020A	P	R	
C18.3B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)

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 	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
	CLIENT		INDIAN OIL CORPORATION LIMITED	
QCP - INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – FIELD INSTRUMENTATION WORKS	Project No. 080557C001	Document No. 080557C-000-QCP-1530-001	Rev. No. 0	Page 13 of 20

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C19	ELECTRONIC TEMPERATSURE TRANSMITTERS / CONVERTERS				
C19.1	Field Instrument Calibration Test				
C19.1A	Check	ICF-020A	WC	W/R	
C19.1B	Signal Calibration	ICF-020A	WC	W/R	
C19.1C	Final inspection	ICF-020A	WC	W/R	
C19.2	Field instrument Installation				
C19.2A	Installation of supports	ICF-020A	WC	W/R	
C19.2B	Secondary Cable tray installation	ICF-020A	WC	W/R	
C19.2C	Signal cable installation, wiring and instrument grounding, cable gland installation	ICF-020A	WC	W/R	
C19.2D	Installation of instrument	ICF-020A	WC	W/R	
C19.2E	Instrument Check	ICF-020A	WC	W/R	
C19.2F	Final inspection	ICF-020A	WC	W/R	
C19.3A	Final Documentation Review	ICF-020A	P	R	
C19.3B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C20	THERMOMETERS AND WELLS				
C20.1	Field Instrument Calibration Test				
C20.1A	Check	ICF-020A	WC	W/R	
C20.1B	Signal Calibration	ICF-020A	WC	W/R	
C20.1C	Final inspection	ICF-020A	WC	W/R	
C20.2	Field instrument Installation				

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			CLIENT	INDIAN OIL CORPORATION LIMITED	
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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C20.2A	Installation of support	ICF-020A	WC	W/R	
C20.2D	Installation of instrument	ICF-020A	WC	W/R	
C20.2E	Check	ICF-020A	WC	W/R	
C20.2F	Final inspection	ICF-020A	WC	W/R	
C20.3A	Final Documentation Review	ICF-020A	P	R	
C21	TEMPERATURE SYSTEMS INSTALLATION ON TANK				
C21.1	Field Instrument Calibration Test				
C21.1A	Check	ICF-020A	WC	W/R	
C21.1B	Signal Calibration	ICF-020A	WC	W/R	
C21.1C	Final inspection	ICF-020A	WC	W/R	
C21.2	Field instrument Installation				
C21.2A	Installation of support	ICF-020A	WC	W/R	
C21.2D	Installation of instrument	ICF-020A	WC	W/R	
C21.2E	Check	ICF-020A	WC	W/R	
C21.2F	Final inspection	ICF-020A	WC	W/R	
C21.3A	Final Documentation Review	ICF-020A	P	R	
C21.3B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C22	ON-LINE ELECTRONIC TRANSMITTERS				
C22.1	Field Instrument Calibration Test				
C22.1A	Check	ICF-034A	WC	W/R	
C22.1B	Signal Calibration	ICF-034A	WC	W/R	

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 	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
	CLIENT		INDIAN OIL CORPORATION LIMITED	
QCP - INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION - FIELD INSTRUMENTATION WORKS	Project No. 080557C001	Document No. 080557C-000-QCP-1530-001	Rev. No. 0	Page 15 of 20

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C22.1C	Final inspection	ICF-034A	WC	W/R	
C22.2	Field instrument Installation				
C22.2A	Installation of supports	ICF-034A	WC	W/R	
C22.2B	Secondary Cable tray installation	ICF-034A	WC	W/R	
C22.2C	Signal cable installation, wiring and instrument grounding, cable gland installation	ICF-034A	WC	W/R	
C22.2D	Installation of instrument	ICF-034A	WC	W/R	
C22.2E	Instrument Check	ICF-034A	WC	W/R	
C22.2F	Final inspection	ICF-034A	WC	W/R	
C22.3	On-Line Flow Instrument Installation				
C22.3A	Mechanical installation	ICF-034A	WC	W/R	
C22.3B	Electrical connection	ICF-034A	WC	W/R	
C22.3C	Pneumatic connection	ICF-034A	WC	W/R	
C22.3D	Final inspection	ICF-034A	WC	W/R	
C22.4A	Final Documentation Review	ICF-034A	P	R	
C22.4B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C23	ON-LINE INDICATORS OR TOTALIZERS				
C23.1A	Mechanical installation	ICF-011A	WC	W/R	
C23.1B	Electrical connection	ICF-011A	WC	W/R	
C23.1C	Pneumatic connection	ICF-011A	WC	W/R	
C23.1D	Final inspection	ICF-011A	WC	W/R	
C23.1E	Final Documentation Review	ICF-011A	P	R	

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			CLIENT	INDIAN OIL CORPORATION LIMITED		
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Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C24	ON-LINE SPECIAL ELECTRONIC TRANSMITTERS				
C24.1	Field Instrument Calibration Test				
C24.1A	Check	ICF-034A	WC	W/R	
C24.1B	Signal Calibration	ICF-034A	WC	W/R	
C24.1C	Final inspection	ICF-034A	WC	W/R	
C24.2	Field instrument Installation				
C24.2A	Installation of supports	ICF-034A	WC	W/R	
C24.2B	Secondary Cable tray installation	ICF-034A	WC	W/R	
C24.2C	Signal cable installation, wiring and instrument grounding, cable gland installation	ICF-034A	WC	W/R	
C24.2D	Installation of instrument	ICF-034A	WC	W/R	
C24.2E	Instrument Check	ICF-034A	WC	W/R	
C24.2F	Final inspection	ICF-034A	WC	W/R	
C24.3	On-Line Flow Instrument Installation				
C24.3A	Mechanical installation	ICF-034A	WC	W/R	
C24.3B	Electrical connection	ICF-034A	WC	W/R	
C24.3C	Pneumatic connection	ICF-034A	WC	W/R	
C24.3D	Final inspection	ICF-034A	WC	W/R	
C24.4A	Final Documentation Review	ICF-034A	P	R	
C24.4B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C25A	CONTROL AND ON-OFF VALVES (PNEUM)				

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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
		CLIENT INDIAN OIL CORPORATION LIMITED		
QCP - INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – FIELD INSTRUMENTATION WORKS	Project No. 080557C001	Document No. 080557C-000-QCP-1530-001	Rev. No. 0	Page 17 of 20

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C25A.1	Control/On-Off Valves, Dampers and Actuators Calibration				
C25A.1A	Inspection	ICF-036A	WC	W/R	
C25A.1B	Calibration	ICF-036A	WC	W/R	
C25A.1C	Final inspection	ICF-036A	WC	W/R	
C25A.2	Control Valve and On-Off Valves Installation				
C25A.2A	Installation	ICF-036A	WC	W/R	
C25A.2B	Connection	ICF-036A	WC	W/R	
C25A.2C	Check	ICF-036A	WC	W/R	
C25A.2D	Final inspection	ICF-036A	WC	W/R	
C25A.3	Instrument Air Supply / Pneumatic Signal Connection				
C25A.3A	Air tubing Installation	ICF-036A	WC	W/R	
C25A.3B	Air Tap Check	ICF-036A	WC	W/R	
C25A.3C	Air Tubing Test	ICF-036A	WC	W/R	
C25A.3D	Final inspection	ICF-036A	WC	W/R	
C25A.4A	Final Documentation Review	ICF-036A	P	R	
C25A.4B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C25B	CONTROL AND ON-OFF VALVES (MOV)				
C25B.1	Control/On-Off Valves, Dampers and Actuators Calibration				
C25B.1A	Inspection	ICF-037A	WC	W/R	
C25B.1B	Calibration	ICF-037A	WC	W/R	

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 TechnipFMC		 IndianOil	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
			CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP - INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – FIELD INSTRUMENTATION WORKS		Project No. 080557C001	Document No. 080557C-000-QCP-1530-001		Rev. No. 0	Page 18 of 20

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C25B.1C	Final inspection	ICF-037A	WC	W/R	
C25B.2	Motor Operated Valve – Instrument Installation				
C25B.2A	Installation	ICF-037A	WC	W/R	
C25B.2B	Connection	ICF-037A	WC	W/R	
C25B.2C	Check	ICF-037A	WC	W/R	
C25B.2D	Final Inspection	ICF-037A	WC	W/R	
C25B.3A	Final Documentation Review	ICF-037A	P	R	
C25B.3B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C26	I/P OR P/I CONVERTERS-SOLENOID VALVES				
C26.1	Instrument Controllers & Receivers Calibration				
C26.1A	Check	ICF-028A	WC	W/R	
C26.1B	Signal Calibration	ICF-028A	WC	W/R	
C26.1C	Final inspection	ICF-028A	WC	W/R	
C26.2	Field instrument Installation				
C26.2A	Installation of supports	ICF-028A	WC	W/R	
C26.2B	Secondary Cable tray installation	ICF-028A	WC	W/R	
C26.2C	Signal cable installation, wiring and instrument grounding, cable gland installation	ICF-028A	WC	W/R	
C26.2D	Installation of instrument	ICF-028A	WC	W/R	
C26.2E	Instrument Check	ICF-028A	WC	W/R	
C26.2F	Final inspection	ICF-028A	WC	W/R	

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 	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
	CLIENT		INDIAN OIL CORPORATION LIMITED	
QCP - INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION - FIELD INSTRUMENTATION WORKS	Project No. 080557C001	Document No. 080557C-000-QCP-1530-001	Rev. No. 0	Page 19 of 20

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C26.3	Instrument Air Supply / Pneumatic Signal Connection				
C26.3A	Air tubing Installation	ICF-028A	WC	W/R	
C26.3B	Air Tap Check	ICF-028A	WC	W/R	
C26.3C	Air Tubing Test	ICF-028A	WC	W/R	
C26.3D	Final inspection	ICF-028A	WC	W/R	
C26.4A	Final Documentation Review	ICF-028A	P	R	
C26.4B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C27	SELF ACTUATED PRESSURE REDUCING VALVES				
C27.1A	Installation	ICF-023A	WC	W/R	
C27.1B	Connection	ICF-023A	WC	W/R	
C27.1C	Check	ICF-023A	WC	W/R	
C27.1D	Final inspection	ICF-023A	WC	W/R	
C27.1E	Final Documentation Review	ICF-023A	P	R	
C28	PUSH BUTTONS, LIMIT SWITCHES AND SELECTORS				
C28.1	Instrument Switches Calibration				
C28.1A	Contact Check	ICF-022A	WC	W/R	
C28.1B	Set Point Calibration	ICF-022A	WC	W/R	
C28.1C	Final inspection	ICF-022A	WC	W/R	
C28.2	Field instrument Installation				

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	CLIENT		INDIAN OIL CORPORATION LIMITED	
QCP - INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – FIELD INSTRUMENTATION WORKS	Project No. 080557C001	Document No. 080557C-000-QCP-1530-001	Rev. No. 0	Page 20 of 20



Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C28.2A	Installation of supports	ICF-022A	WC	W/R	
C28.2B	Secondary Cable tray installation	ICF-022A	WC	W/R	
C28.2C	Signal cable installation, wiring and instrument grounding, cable gland installation	ICF-022A	WC	W/R	
C28.2D	Installation of instrument	ICF-022A	WC	W/R	
C28.2E	Instrument Check	ICF-022A	WC	W/R	
C28.2F	Final inspection	ICF-022A	WC	W/R	
C28.3A	Final Documentation Review	ICF-022A	P	R	
C28.3B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)

GENERAL NOTES

1 THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THE JOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN- CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.



2 CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.



NOTES: (1) A COPY OF THE DOCUMENT WILL BE DELIVERED TO COMPANY FOR INFORMATION
(2) TO BE FILED AS PART OF LOOP CHECK FOLDERS

 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM		ICF 005A		CLIENT	
FIELD INSTRUMENT CALIBRATION, INSTALLATION AND IMPULSE LINE PRESSURE TESTSUMMARY REPORT		PROJ. No. 080557C001		REV. 0	SH. _1_ OF _2_
		CONTRACTOR:		ICF 005A N° _____	
GENERAL DATA					
Tag/ Identification		Instrument pattern tag:			
MR/P.O. No.:		Hook Up Standard:			
Instrument type (1)		Ref. drawing:			
Manufacturer		P & ID			
Model No/ Serial No.:		Operating pressure (Kg/Cm2g)			
F.F. DATA	Field Device TAG	Test Media			
	Node Address:	Test pressure (Kg/Cm2g)			
	Engineering Range / Unit:	Rev:			
	Calibr. Range:				
OPER ATION	Output signal:				
	Accuracy:				
Mode (Analogue/Digital):					
INSPECTIONS / CHECK (Ref. to QCP 1530.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
					CONTR. TECHNIP
1A- Check		Results			
A1.	Instrument supply	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Overrange protection	<input type="checkbox"/>	<input type="checkbox"/>		
A3.	Zero suppression	<input type="checkbox"/>	<input type="checkbox"/>		
A4.	Zero elevation	<input type="checkbox"/>	<input type="checkbox"/>		
1B- Signal Calibration		Results			
B1.	Input Signal	0%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B2.		25%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B3.		50%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B4.		75%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B5.		100%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B6.		75%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B7.		50%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B8.		25%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B9.		0%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
1C- Final Inspection					
C1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
2A- Installation of support					
A1.	Support prefabrication	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Support installation	<input type="checkbox"/>	<input type="checkbox"/>		
2B-Secondary cable tray Installation		<input type="checkbox"/>	<input type="checkbox"/>		
2C-Signal cable Installation, Wiring and Instrument Grounding, cable gland Installation		<input type="checkbox"/>	<input type="checkbox"/>		
2D - Installation of Instrument					
D1.	Hook up installation including diaphragm seal (as applicable) complete and sealed	<input type="checkbox"/>	<input type="checkbox"/>		
D2.	Drains / vents	<input type="checkbox"/>	<input type="checkbox"/>		
D3.	Cable glands installed and tight	<input type="checkbox"/>	<input type="checkbox"/>		
D4.	TC / RTD fully inserted with gasket bolts and nuts tight	<input type="checkbox"/>	<input type="checkbox"/>		
D5.	Signal cable and cable tray install.	<input type="checkbox"/>	<input type="checkbox"/>		
D6.	Wiring and Grounding connection	<input type="checkbox"/>	<input type="checkbox"/>		



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 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM ICF 005A		CLIENT		INDIAN OIL CORPORATION LIMITED	
FIELD INSTRUMENT CALIBRATION, INSTALLATION AND IMPULSE LINE PRESSURE TEST SUMMARY REPORT		PROJ. No. 080557C001		REV. 0	SH. _2_ OF _2_
		CONTRACTOR:		ICF 005A N° _____	
INSPECTIONS / CHECK (Ref. to QCP 1530.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
					CONTR.
2E – Instrument Check					
E1.	Instrument installation and maintenance space check	<input type="checkbox"/>	<input type="checkbox"/>		
E2.	HP & LP connections check (including Impulse line and slope)	<input type="checkbox"/>	<input type="checkbox"/>		
E3.	Flow direction check	<input type="checkbox"/>	<input type="checkbox"/>		
E4.	Cable identification	<input type="checkbox"/>	<input type="checkbox"/>		
E5.	Wiring identification & connection	<input type="checkbox"/>	<input type="checkbox"/>		
E6.	Labeling	<input type="checkbox"/>	<input type="checkbox"/>		
2F - Final inspection					
F1.	Final visual insp. (including material & rating)	<input type="checkbox"/>	<input type="checkbox"/>		
F2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
3A – Ferrules Installation					
A1.	Ferrules inst. and tightening	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Slope and supports	<input type="checkbox"/>	<input type="checkbox"/>		
3B – Tubing/Piping Test					
B1.	Pressure test, Prefabricated Hook-up Pressure Test	<input type="checkbox"/>	<input type="checkbox"/>		
B2.	Tubing/piping blowing	<input type="checkbox"/>	<input type="checkbox"/>		
3C - Final inspection					
C1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
Notes: (1) Displacer level instrument, transmitters, transducers, pressure gauges, indicators, etc....					
4A- FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR	TECHNIP	OWNER	
	NAME				
	SIGNATURE				
	DATE				

 		PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery				
QUALITY CONTROL FORM ICF 011A		CLIENT INDIAN OIL CORPORATION LIMITED				
ON-LINE FLOW INSTRUMENT INSTALLATION SUMMARY REPORT (1)		PROJ. No. 080557C001	REV. 0			
		SH. ____ OF ____				
		CONTRACTOR: ICF 011A N° _____				
GENERAL DATA						
Instrument Tag						
MR / P.O. No.:						
Model No.:						
Serial No.:						
P & ID						
Data sheet						
INSPECTIONS / CHECK (Ref. to QCP 1530.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE	
					CONTR.	TECHNIP
1A - Mechanical Installation						
A1.	Diameter and dimensions	<input type="checkbox"/>	<input type="checkbox"/>			
A2.	Material and rating	<input type="checkbox"/>	<input type="checkbox"/>			
A3.	Position and location check	<input type="checkbox"/>	<input type="checkbox"/>			
A4.	Flow direction check	<input type="checkbox"/>	<input type="checkbox"/>			
A5.	Up- stream and down-stream diameter check	<input type="checkbox"/>	<input type="checkbox"/>			
1B - Electrical connection						
B1.	Cable glands installed and tight	<input type="checkbox"/>	<input type="checkbox"/>			
B2.	Cable and wiring check	<input type="checkbox"/>	<input type="checkbox"/>			
1C - Pneumatic connection						
C1.	Air supply and signal tubing installation and test	<input type="checkbox"/>	<input type="checkbox"/>			
C2.	Air supply distribution installation and test	<input type="checkbox"/>	<input type="checkbox"/>			
1D - Final inspection						
D1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>			
D2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>			
Notes: (1) Valid for all on line flow instruments, such as Vortex, Magnetic Flow Meters, Coriolis, Ultrasonic, Target, Integral Orifices, Transmitter, Rotameter etc. Including also Orifice Plates, Annubar, Restriction Orifices, Venturi Tubes etc.						
REMARKS :						
1E - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR		TECHNIP	OWNER	
	NAME					
	SIGNATURE					
	DATE					

		PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery		
QUALITY CONTROL FORM ICF 012A		CLIENT INDIAN OIL CORPORATION LIMITED		
FIELD INSTRUMENT INSTALLATION AND IMPULSE LINE PRESSURE TEST SUMMARY REPORT		PROJ. No. 080557C001 REV. 0 SH. __1__ OF __1__		
		CONTRACTOR: _____ ICF 012A N° _____		
GENERAL DATA				
Tag / Identification:		Operating pressure (Kg/Cm2g)		
MR/P.O.:		Test Media		
Manufacturer & Model:		Test pressure (Kg/Cm2g)		
Serial number:				
Hook Up Standard:				
Ref. drawing:				
INSPECTIONS / CHECK (Ref. to QCP 1530.001)		N.A.	ACC.	
		Report / Reference		
		INSPECTOR SIGNATURE & DATE		
		CONTR.		
		TECHNIP		
1A- Installation of support				
A1.	Support prefabrication	<input type="checkbox"/>	<input type="checkbox"/>	
A2.	Support installation	<input type="checkbox"/>	<input type="checkbox"/>	
1B - Installation of Instrument				
B1.	Hook up installation complete and sealed	<input type="checkbox"/>	<input type="checkbox"/>	
B2.	Drains / vents	<input type="checkbox"/>	<input type="checkbox"/>	
B3.	Cable glands installed and tight	<input type="checkbox"/>	<input type="checkbox"/>	
B4.	TC / RTD fully inserted with gasket bolts and nuts tight	<input type="checkbox"/>	<input type="checkbox"/>	
B5.	Signal cable and cable tray install.	<input type="checkbox"/>	<input type="checkbox"/>	
B6.	Wiring and Grounding connection	<input type="checkbox"/>	<input type="checkbox"/>	
1C - Check				
C1.	Instrument installation and maintenance space check	<input type="checkbox"/>	<input type="checkbox"/>	
C2.	HP & LP connections check (including Impulse line and slope)	<input type="checkbox"/>	<input type="checkbox"/>	
C3.	Flow direction check	<input type="checkbox"/>	<input type="checkbox"/>	
C4.	Cable identification	<input type="checkbox"/>	<input type="checkbox"/>	
C5.	Wiring identification & connection	<input type="checkbox"/>	<input type="checkbox"/>	
C6.	Labeling	<input type="checkbox"/>	<input type="checkbox"/>	
1D - Final inspection				
D1.	Final visual inspection (including material & rating)	<input type="checkbox"/>	<input type="checkbox"/>	
D2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>	
2A – Ferrules Installation				
A1.	Ferrules inst. and tightening	<input type="checkbox"/>	<input type="checkbox"/>	
A2.	Slope and supports	<input type="checkbox"/>	<input type="checkbox"/>	
2B – Tubing/Piping Test				
B1.	Pressure test, Prefabricated Hook-up Pressure Test	<input type="checkbox"/>	<input type="checkbox"/>	
B2.	Tubing/piping blowing	<input type="checkbox"/>	<input type="checkbox"/>	
2C - Final inspection				
C1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	
C2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>	
REMARKS :				
3A - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR	TECHNIP	OWNER
	NAME			
	SIGNATURE			
	DATE			

 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM		ICF 013A		CLIENT	
FIELD INSTRUMENT INSTALLATION SUMMARY REPORT		PROJ. No. 080557C001		REV. 0	SH. __1__ OF __1__
		CONTRACTOR:		ICF 013A N° _____	
GENERAL DATA					
Tag / Identification:					
MR/P.O.:					
Manufacturer & Model:					
Serial number:					
Hook Up Standard:					
Ref. drawing:					
INSPECTIONS / CHECK (Ref. to QCP 1530.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
					CONTR. TECHNIP
1A- Installation of support					
A1.	Support prefabrication	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Support installation	<input type="checkbox"/>	<input type="checkbox"/>		
1B - Secondary cable tray Installation		<input type="checkbox"/>	<input type="checkbox"/>		
1C - Signal cable Installation, Wiring and Instrument Grounding, cable gland Installation		<input type="checkbox"/>	<input type="checkbox"/>		
1D - Installation of Instrument					
D1.	Hook up installation complete and sealed	<input type="checkbox"/>	<input type="checkbox"/>		
D2.	Drains / vents	<input type="checkbox"/>	<input type="checkbox"/>		
D3.	Cable glands installed and tight	<input type="checkbox"/>	<input type="checkbox"/>		
D4.	Availability of personnel safety equipment (like dosimeter)	<input type="checkbox"/>	<input type="checkbox"/>		
D5.	Procedure for safe handling of source during installation	<input type="checkbox"/>	<input type="checkbox"/>		
D6.	Signal cable and cable tray install.	<input type="checkbox"/>	<input type="checkbox"/>		
D7.	Wiring and Grounding connection	<input type="checkbox"/>	<input type="checkbox"/>		
D8.	Alignment of flanges, visibility of gauges and orientation of instrument	<input type="checkbox"/>	<input type="checkbox"/>		
1E - Check					
E1.	Instrument installation and maintenance space check	<input type="checkbox"/>	<input type="checkbox"/>		
E2.	HP & LP connections check (including Impulse line and slope)	<input type="checkbox"/>	<input type="checkbox"/>		
E3.	Flow direction check / Flow requirements of cooling medium (if required)	<input type="checkbox"/>	<input type="checkbox"/>		
E4.	Type of illuminators for Transparent type Level Gauges suitable to area classification	<input type="checkbox"/>	<input type="checkbox"/>		
E5.	Cable identification	<input type="checkbox"/>	<input type="checkbox"/>		
E6.	Wiring identification & connection	<input type="checkbox"/>	<input type="checkbox"/>		
E7.	Labeling	<input type="checkbox"/>	<input type="checkbox"/>		
1F - Final inspection					
F1.	Final visual inspection (including material & rating)	<input type="checkbox"/>	<input type="checkbox"/>		
F2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS :					
1G - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR	TECHNIP		OWNER
	NAME				
	SIGNATURE				
	DATE				

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 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM		ICF 020A		CLIENT	
FIELD INSTRUMENT CALIBRATION AND INSTALLATION SUMMARY REPORT		PROJ. No. 080557C001		REV. 0	SH. _1_ OF _2_
		CONTRACTOR:		ICF 020A N° _____	
GENERAL DATA					
Tag/ Identification		Mode (Analogue/Digital):			
MR/P.O. No.:		Instrument pattern tag:			
Instrument type (1)		Hook Up Standard:			
Manufacturer		Ref. drawing:			
Model No/ Serial No.:		P & ID			
F.F. DATA OPER ATION	Field Device TAG	Rev:			
	Node Address:				
	Engineering Range / Unit:				
	Calibr. Range:				
	Output signal:				
	Accuracy:				
INSPECTIONS / CHECK (Ref. to QCP 1530.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
					CONTR. TECHNIP
1A-Check		Results			
A1.	Instrument supply	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Overrange protection	<input type="checkbox"/>	<input type="checkbox"/>		
A3.	Zero suppression	<input type="checkbox"/>	<input type="checkbox"/>		
A4.	Zero elevation	<input type="checkbox"/>	<input type="checkbox"/>		
1B- Signal Calibration		Results			
B1.	0% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B2.	25% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B3.	50% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B4.	75% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B5.	100% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B6.	75% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B7.	50% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B8.	25% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B9.	0% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
1C- Final Inspection					
C1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
2A- Installation of support					
A1.	Support prefabrication	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Support installation	<input type="checkbox"/>	<input type="checkbox"/>		
2B-Secondary cable tray Installation		<input type="checkbox"/>	<input type="checkbox"/>		
2C-Signal cable Installation, Wiring and Instrument Grounding, cable gland Installation		<input type="checkbox"/>	<input type="checkbox"/>		
2D - Installation of Instrument					
D1.	Hook up installation including prefabricated hook up, diaphragm seal (as applicable) complete and sealed	<input type="checkbox"/>	<input type="checkbox"/>		
D2.	Drains / vents (vent / drain connection on drip ring for diaphragm seal type instruments)	<input type="checkbox"/>	<input type="checkbox"/>		
D3.	Cable glands installed and tight	<input type="checkbox"/>	<input type="checkbox"/>		
D4.	TC / RTD fully inserted with gasket bolts and nuts tight	<input type="checkbox"/>	<input type="checkbox"/>		
D5.	Signal cable and cable tray install.	<input type="checkbox"/>	<input type="checkbox"/>		
D6.	Minimum operating voltage at field transmitter	<input type="checkbox"/>	<input type="checkbox"/>		
D7.	Wiring and Grounding connection	<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS :					



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		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
QUALITY CONTROL FORM ICF 022A		CLIENT	INDIAN OIL CORPORATION LIMITED		
INSTRUMENT SWITCHES CALIBRATION AND INSTALLATION SUMMARY REPORT		PROJ. No. 080557C001	REV. 0	SH. _1_ OF _1_	
		CONTRACTOR:		ICF 022A N° _____	
GENERAL DATA					
Tag / Identification:		Model No:	Manufacturer:		
MR/P.O.:		Serial No:	Ref. drawing:		
Process Variable Type (1)		Hook Up Standard:			
INSPECTIONS / CHECK (Ref. to QCP 1530.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
				CONTR.	TECHNIP
1A- Contact Check					
A1.	Contact type (2)	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Contact action open	<input type="checkbox"/>	<input type="checkbox"/>		
A3.	Contact action close	<input type="checkbox"/>	<input type="checkbox"/>		
1B – Set Point Calibration					
B1.	Set point unit	<input type="checkbox"/>	<input type="checkbox"/>		
B2.	Set point increase	<input type="checkbox"/>	<input type="checkbox"/>		
B3.	Set point decrease	<input type="checkbox"/>	<input type="checkbox"/>		
B4.	Set point reset	<input type="checkbox"/>	<input type="checkbox"/>		
1C - Final Inspection					
C1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
2A- Installation of support					
A1.	Support prefabrication	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Support installation	<input type="checkbox"/>	<input type="checkbox"/>		
2B-Secondary cable tray Installation		<input type="checkbox"/>	<input type="checkbox"/>		
2C-Signal cable Installation, Wiring and Instrum. Grounding, cable gland Installation		<input type="checkbox"/>	<input type="checkbox"/>		
2D - Installation of Instrument					
D1.	Hook up installation complete and sealed	<input type="checkbox"/>	<input type="checkbox"/>		
D2.	Drains / vents	<input type="checkbox"/>	<input type="checkbox"/>		
D3.	Cable glands installed and tight	<input type="checkbox"/>	<input type="checkbox"/>		
D4.	TC / RTD fully inserted with gasket bolts and nuts tight	<input type="checkbox"/>	<input type="checkbox"/>		
D5.	Signal cable and cable tray install.	<input type="checkbox"/>	<input type="checkbox"/>		
D6.	Wiring and Grounding connection	<input type="checkbox"/>	<input type="checkbox"/>		
2E - Check					
E1.	Instrument installation and maintenance space check	<input type="checkbox"/>	<input type="checkbox"/>		
E2.	HP&LP connect.check(including impulse line and slope)	<input type="checkbox"/>	<input type="checkbox"/>		
E3.	Flow direction check	<input type="checkbox"/>	<input type="checkbox"/>		
E4.	Cable identification	<input type="checkbox"/>	<input type="checkbox"/>		
E5.	Wiring identification & connection	<input type="checkbox"/>	<input type="checkbox"/>		
E6.	Labeling	<input type="checkbox"/>	<input type="checkbox"/>		
2F - Final inspection					
F1.	Final visual insp. (including material & rating)	<input type="checkbox"/>	<input type="checkbox"/>		
F2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
Notes: (1) Flow, level, pressure, temperature (2) SPDT, DPDT, or SPST					
REMARKS :					
3A - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR	TECHNIP	OWNER	
	NAME				
	SIGNATURE				
	DATE				

 TechnipFMC		 IndianOil	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
QUALITY CONTROL FORM		ICF 023A	CLIENT	INDIAN OIL CORPORATION LIMITED		
CONTROL VALVES AND ON-OFF VALVES INSTALLATION SUMMARY REPORT			PROJ. No. 080557C001	REV. 0	SH. __1__ OF __1__	
			CONTRACTOR:		ICF 023A N° _____	
GENERAL DATA						
Tag / Identification:						
MR / P.O. No.:						
Model No.:						
Serial No.:						
P & ID :						
Data sheet:						
INSPECTIONS / CHECK (Ref. to QCP 1530.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE	
					CONTR.	TECHNIP
1A- Installation						
A1.	Equipment installed property	<input type="checkbox"/>	<input type="checkbox"/>			
A2.	Flow direction check	<input type="checkbox"/>	<input type="checkbox"/>			
A3.	Accessories complete	<input type="checkbox"/>	<input type="checkbox"/>			
A4.	Remote panel installed	<input type="checkbox"/>	<input type="checkbox"/>			
A5.	Air receiver tank installed	<input type="checkbox"/>	<input type="checkbox"/>			
1B - Connection						
B1.	Cable glands installed and tight	<input type="checkbox"/>	<input type="checkbox"/>			
B2.	Cable and wiring checks	<input type="checkbox"/>	<input type="checkbox"/>			
B3.	Air supply distribution and signal tubing installation	<input type="checkbox"/>	<input type="checkbox"/>			
1C - Check						
C1.	Diameter and dimensions	<input type="checkbox"/>	<input type="checkbox"/>			
C2.	Material and rating	<input type="checkbox"/>	<input type="checkbox"/>			
C3.	Leak test	<input type="checkbox"/>	<input type="checkbox"/>			
1D - Final inspection						
D1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>			
D2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>			
REMARKS :						
1E - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR		TECHNIP		OWNER
	NAME					
	SIGNATURE					
	DATE					



 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM		ICF 028A		CLIENT	
PNEUMATIC PRESSURE LOCAL RECEIVER CONTROL, INDICATOR SUMMARY REPORT		PROJ. No. 080557C001		REV. 0	SH. _1_ OF _2_
		CONTRACTOR:		ICF 028A N° _____	
GENERAL DATA					
Tag/ Identification		Hook Up Standard:			
MR/P.O.No.:		Ref. drawing:			
Instrument type		Air Supply from (Sub header/Manifold):			
Manufacturer		Signal from (Instrument Tag):			
Model No / Serial No :		Signal to (Instrument Tag):			
Location (1)					
OPER ATION	Calibr. Range:				
	Output signal:				
	Accuracy:				
INSPECTIONS / CHECK (Ref. to QCP 1530.001)				N.A.	ACC.
				Report / Reference	INSPECTOR SIGNATURE & DATE
				CONTR.	TECHNIP
1A-Check		Results			
A1.	Reset (set at):			<input type="checkbox"/>	<input type="checkbox"/>
A2.	Derivative (set at):			<input type="checkbox"/>	<input type="checkbox"/>
A3.	Prop. band (set at):			<input type="checkbox"/>	<input type="checkbox"/>
A4.	Action (DIR / REV)			<input type="checkbox"/>	<input type="checkbox"/>
1B- Signal Calibration		Results			
B1.	Input Signal	0%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B2.		25%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B3.		50%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B4.		75%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B5.		100%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B6.		75%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B7.		50%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B8.		25%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
B9.		0%	Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>
1C- Final Inspection					
C1.	Final visual inspection		<input type="checkbox"/>	<input type="checkbox"/>	
C2.	As-built marked up copy updated and available		<input type="checkbox"/>	<input type="checkbox"/>	
2A - Installation of Support					
A1.	Support prefabrication		<input type="checkbox"/>	<input type="checkbox"/>	
A2.	Support installation		<input type="checkbox"/>	<input type="checkbox"/>	
2B - Secondary cable tray Installation		<input type="checkbox"/>		<input type="checkbox"/>	
2C - Signal cable Installation, Wiring and Instrument Grounding, cable gland Installation		<input type="checkbox"/>		<input type="checkbox"/>	
2D - Installation of Instrument					
D1.	Hook up installation complete and sealed		<input type="checkbox"/>	<input type="checkbox"/>	
D2.	Drains / vents		<input type="checkbox"/>	<input type="checkbox"/>	
D3.	Cable glands installed and tight		<input type="checkbox"/>	<input type="checkbox"/>	
D4.	TC / RTD fully inserted with gasket bolts and nuts tight		<input type="checkbox"/>	<input type="checkbox"/>	
D5.	Signal cable and cable tray install.		<input type="checkbox"/>	<input type="checkbox"/>	
D6.	Wiring and Grounding connection		<input type="checkbox"/>	<input type="checkbox"/>	
2E - Check					
E1.	Instrument install. and maintenance space check		<input type="checkbox"/>	<input type="checkbox"/>	
E2.	HP & LP connections check (including Impulse line and slope)		<input type="checkbox"/>	<input type="checkbox"/>	
E3.	Flow direction check		<input type="checkbox"/>	<input type="checkbox"/>	
E4.	Cable identification		<input type="checkbox"/>	<input type="checkbox"/>	
E5.	Wiring identification & connection		<input type="checkbox"/>	<input type="checkbox"/>	
E6.	Labeling		<input type="checkbox"/>	<input type="checkbox"/>	

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 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM		ICF 034A		CLIENT	
ON LINE ELECTRONIC TRANSMITTERS SUMMARY REPORT		PROJ. No. 080557C001		REV. 0	SH. _1_ OF _2_
		CONTRACTOR:		ICF 034A N° _____	
GENERAL DATA					
Tag/ Identification		Mode (Analogue/Digital):			
MR/P.O. No.:		Instrument pattern tag:			
Instrument type (2)		Hook Up Standard:			
Manufacturer		Ref. drawing:			
Model No/ Serial No.:		P & ID			
F.F. DATA OPER ATION	Data sheet	Rev:			
	Node Address:				
	Engineering Range / Unit:				
	Calibr. Range:				
	Output signal:				
	Accuracy:				
INSPECTIONS / CHECK (Ref. to QCP 1530.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
					CONTR. TECHNIP
1A-Check		Results			
A1.	Instrument supply	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Overrange protection	<input type="checkbox"/>	<input type="checkbox"/>		
A3.	Zero suppression	<input type="checkbox"/>	<input type="checkbox"/>		
A4.	Zero elevation	<input type="checkbox"/>	<input type="checkbox"/>		
1B- Signal Calibration		Results			
B1.	0% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B2.	25% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B3.	50% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B4.	75% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B5.	100% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B6.	75% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B7.	50% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B8.	25% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B9.	0% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
1C- Final Inspection					
C1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
2A- Installation of support					
A1.	Support prefabrication	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Support installation	<input type="checkbox"/>	<input type="checkbox"/>		
2B-Secondary cable tray Installation		<input type="checkbox"/>	<input type="checkbox"/>		
2C-Signal cable Installation, Wiring and Instrument Grounding, cable gland Installation		<input type="checkbox"/>	<input type="checkbox"/>		
2D - Installation of Instrument					
D1.	Hook up installation complete and sealed	<input type="checkbox"/>	<input type="checkbox"/>		
D2.	Drains / vents	<input type="checkbox"/>	<input type="checkbox"/>		
D3.	Cable glands installed and tight	<input type="checkbox"/>	<input type="checkbox"/>		
D4.	TC / RTD fully inserted with gasket bolts and nuts tight	<input type="checkbox"/>	<input type="checkbox"/>		
D5.	Signal cable and cable tray install.	<input type="checkbox"/>	<input type="checkbox"/>		
D6.	Wiring and Grounding connection	<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS :					



		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM ICF 034A		CLIENT	INDIAN OIL CORPORATION LIMITED	
ON LINE ELECTRONIC TRANSMITTERS SUMMARY REPORT		PROJ. No. 080557C001	REV. 0	SH. <u>2</u> OF <u>2</u>
		CONTRACTOR:		ICF 034A N° _____



INSPECTIONS / CHECK (Ref. to QCP 1530.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE	
					CONTR.	TECHNIP
2E - Check						
E1.	Instrument installation and maintenance space check	<input type="checkbox"/>	<input type="checkbox"/>			
E2.	HP & LP connections check (including Impulse line and slope)	<input type="checkbox"/>	<input type="checkbox"/>			
E3.	Flow direction check	<input type="checkbox"/>	<input type="checkbox"/>			
E4.	Cable identification	<input type="checkbox"/>	<input type="checkbox"/>			
E5.	Wiring identification & connection	<input type="checkbox"/>	<input type="checkbox"/>			
E6.	Labeling	<input type="checkbox"/>	<input type="checkbox"/>			
2F - Final inspection						
F1.	Final visual insp. (including material & rating)	<input type="checkbox"/>	<input type="checkbox"/>			
F2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>			
3A - Mechanical Installation						
A1.	Diameter and dimensions	<input type="checkbox"/>	<input type="checkbox"/>			
A2.	Material and rating	<input type="checkbox"/>	<input type="checkbox"/>			
A3.	Position and location check	<input type="checkbox"/>	<input type="checkbox"/>			
A4.	Flow direction check	<input type="checkbox"/>	<input type="checkbox"/>			
A5.	Up- stream and down-stream diameter check	<input type="checkbox"/>	<input type="checkbox"/>			
3B - Electrical connection						
B1.	Cable glands installed and tight	<input type="checkbox"/>	<input type="checkbox"/>			
B2.	Cable and wiring check	<input type="checkbox"/>	<input type="checkbox"/>			
3C - Pneumatic connection						
C1.	Air supply and signal tubing installation and test	<input type="checkbox"/>	<input type="checkbox"/>			
C2.	Air supply distribution installation and test	<input type="checkbox"/>	<input type="checkbox"/>			
3D - Final inspection						
D1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>			
D2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>			
Notes: (1) Valid for all on line flow instruments, such as Vortex, Magnetic Flow Meters, Coriolis, Ultrasonic, Target, Integral Orifices, Transmitter, Rotameter etc. Including also Orifice Plates, Annubar, Restriction Orifices, Venturi Tubes etc. (2) Displacer level instrument, transmitters, transducers, pressure gauges, indicators, etc....						
REMARKS :						

4A- FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR	TECHNIP	OWNER
	NAME			
	SIGNATURE			
	DATE			


 				PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM ICF 036A				CLIENT		INDIAN OIL CORPORATION LIMITED	
CONTROL AND ON-OFF VALVES (PNEUM) SUMMARY REPORT				PROJ. No. 080557C001		REV. 0	SH. _2_ OF _3_
				CONTRACTOR:		ICF 036A N° _____	
INSPECTIONS / CHECK (Ref. to QCP 1530.001)				N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
							CONTR. TECHNIP
1B - Calibration							
Results							
B1.	Positioner Input Signal	0%		<input type="checkbox"/>	<input type="checkbox"/>		
B2.		25%		<input type="checkbox"/>	<input type="checkbox"/>		
B3.		50%		<input type="checkbox"/>	<input type="checkbox"/>		
B4.		75%		<input type="checkbox"/>	<input type="checkbox"/>		
B5.		100%		<input type="checkbox"/>	<input type="checkbox"/>		
B6.		75%		<input type="checkbox"/>	<input type="checkbox"/>		
B7.		50%		<input type="checkbox"/>	<input type="checkbox"/>		
B8.		25%		<input type="checkbox"/>	<input type="checkbox"/>		
B9.		0%		<input type="checkbox"/>	<input type="checkbox"/>		
B10.	Valve Stroke Position Input Signal	0%		<input type="checkbox"/>	<input type="checkbox"/>		
B11.		25%		<input type="checkbox"/>	<input type="checkbox"/>		
B12.		50%		<input type="checkbox"/>	<input type="checkbox"/>		
B13.		75%		<input type="checkbox"/>	<input type="checkbox"/>		
B14.		100%		<input type="checkbox"/>	<input type="checkbox"/>		
B15.		75%		<input type="checkbox"/>	<input type="checkbox"/>		
B16.		50%		<input type="checkbox"/>	<input type="checkbox"/>		
B17.		25%		<input type="checkbox"/>	<input type="checkbox"/>		
B18.		0%		<input type="checkbox"/>	<input type="checkbox"/>		
1C- Final Inspection							
C1.	Final visual inspection			<input type="checkbox"/>	<input type="checkbox"/>		
C2.	As-built marked up copy updated and available			<input type="checkbox"/>	<input type="checkbox"/>		
2A- Installation							
A1.	Equipment installed property			<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Flow direction check			<input type="checkbox"/>	<input type="checkbox"/>		
A3.	Accessories complete			<input type="checkbox"/>	<input type="checkbox"/>		
A4.	Remote panel installed			<input type="checkbox"/>	<input type="checkbox"/>		
A5.	Air receiver tank installed			<input type="checkbox"/>	<input type="checkbox"/>		
2B - Connection							
B1.	Cable glands installed and tight			<input type="checkbox"/>	<input type="checkbox"/>		
B2.	Cable and wiring checks			<input type="checkbox"/>	<input type="checkbox"/>		
B3.	Air supply distribution and signal tubing installation			<input type="checkbox"/>	<input type="checkbox"/>		
2C - Check							
C1.	Diameter and dimensions			<input type="checkbox"/>	<input type="checkbox"/>		
C2.	Material and rating			<input type="checkbox"/>	<input type="checkbox"/>		
C3.	Leak test			<input type="checkbox"/>	<input type="checkbox"/>		
2D - Final inspection							
D1.	Final visual inspection			<input type="checkbox"/>	<input type="checkbox"/>		
D2.	As-built marked up copy updated and available			<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS :							

[illegible]

 				PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM ICF 037A				CLIENT		INDIAN OIL CORPORATION LIMITED	
CONTROL AND ON-OFF VALVES (MOV) SUMMARY REPORT				PROJ. No. 080557C001		REV. 0	SH. _2_ OF _2_
				CONTRACTOR:		ICF 037A N° _____	
INSPECTIONS / CHECK (Ref. to QCP 1530.001)				N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
							CONTR. TECHNIP
1B - Calibration				Results			
B1.	Positioner Input Signal	0%		<input type="checkbox"/>	<input type="checkbox"/>		
B2.		25%		<input type="checkbox"/>	<input type="checkbox"/>		
B3.		50%		<input type="checkbox"/>	<input type="checkbox"/>		
B4.		75%		<input type="checkbox"/>	<input type="checkbox"/>		
B5.		100%		<input type="checkbox"/>	<input type="checkbox"/>		
B6.		75%		<input type="checkbox"/>	<input type="checkbox"/>		
B7.		50%		<input type="checkbox"/>	<input type="checkbox"/>		
B8.		25%		<input type="checkbox"/>	<input type="checkbox"/>		
B9.		0%		<input type="checkbox"/>	<input type="checkbox"/>		
B10.	Valve Stroke Position Input Signal	0%		<input type="checkbox"/>	<input type="checkbox"/>		
B11.		25%		<input type="checkbox"/>	<input type="checkbox"/>		
B12.		50%		<input type="checkbox"/>	<input type="checkbox"/>		
B13.		75%		<input type="checkbox"/>	<input type="checkbox"/>		
B14.		100%		<input type="checkbox"/>	<input type="checkbox"/>		
B15.		75%		<input type="checkbox"/>	<input type="checkbox"/>		
B16.		50%		<input type="checkbox"/>	<input type="checkbox"/>		
B17.		25%		<input type="checkbox"/>	<input type="checkbox"/>		
B18.		0%		<input type="checkbox"/>	<input type="checkbox"/>		
1C- Final Inspection							
C1.	Final visual inspection			<input type="checkbox"/>	<input type="checkbox"/>		
C2.	As-built marked up copy updated and available			<input type="checkbox"/>	<input type="checkbox"/>		
2A - Installation							
A1.	Equipment installed properly			<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Cable trays or conduit and cable installation			<input type="checkbox"/>	<input type="checkbox"/>		
A3.	Remote panel installed			<input type="checkbox"/>	<input type="checkbox"/>		
2B - Connection							
B1.	Cable glands installed and tight			<input type="checkbox"/>	<input type="checkbox"/>		
B2.	Instrument cable and wiring check			<input type="checkbox"/>	<input type="checkbox"/>		
B3.	Grounding check			<input type="checkbox"/>	<input type="checkbox"/>		
2C - Check							
C1.	Diameter and dimensions			<input type="checkbox"/>	<input type="checkbox"/>		
C2.	Material and rating			<input type="checkbox"/>	<input type="checkbox"/>		
C3.	Flow direction check			<input type="checkbox"/>	<input type="checkbox"/>		
C4.	Accessories complete			<input type="checkbox"/>	<input type="checkbox"/>		
2D - Final inspection							
D1.	Final visual inspection			<input type="checkbox"/>	<input type="checkbox"/>		
D2.	As-built marked up copy updated and available			<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS :							
3A- FINAL DOC. REVIEW	INSPECTORS		CONTRACTOR		TECHNIP		OWNER
	NAME						
	SIGNATURE						
	DATE						

 		PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery		
QUALITY CONTROL FORM ICF 038A		CLIENT INDIAN OIL CORPORATION LIMITED		
INSTRUMENT AIR SUBHEADERS PRESSURE TEST INSPECTION REPORT		PROJ. No. 080557C001	REV. 0	
		SH. _1_ OF _1_		
		CONTRACTOR: ICF 038A N° _____		
GENERAL DATA				
INSTRUMENT SUBHEADER ID. OR AIR TAP N.				
Instruments supplied:				
Test pressure (Kg/Cm2g)	7 Kg/Cm2g (Unless otherwise specified)			
Test medium used	Air (Unless otherwise specified)			
INSTALLATION INSPECTION			Accepted	
			N.A.	ACC.
A- Installation				
A1.	Support		<input type="checkbox"/>	<input type="checkbox"/>
A2.	Installation		<input type="checkbox"/>	<input type="checkbox"/>
B - Connection / wiring				
B1.	Main air header commissioned		<input type="checkbox"/>	<input type="checkbox"/>
B2.	Secondary air header connected		<input type="checkbox"/>	<input type="checkbox"/>
B3.	Air distribution to instrument connected		<input type="checkbox"/>	<input type="checkbox"/>
C - Check				
C1.	Pressure service test with air at 7Kg/Cm2g		<input type="checkbox"/>	<input type="checkbox"/>
C2.	Blowing/Tightness		<input type="checkbox"/>	<input type="checkbox"/>
C3.	Labelling		<input type="checkbox"/>	<input type="checkbox"/>
D - Final inspection				
D1.	Final visual inspection		<input type="checkbox"/>	<input type="checkbox"/>
D2.	As-built marked up copy updated and available		<input type="checkbox"/>	<input type="checkbox"/>
REMARKS :				
INSPECTORS		CONTRACTOR		TECHNIP
NAME				
SIGNATURE				
DATE				

TechnipFMC IndianOil		PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery			
QUALITY CONTROL FORM ICF 039A		CLIENT INDIAN OIL CORPORATION LIMITED			
FIELD INSTRUMENT INSTALLATION FINAL INSPECTION REPORT		PROJ. No. 080557C001 REV. 0 SH. _1_ OF _1_			
		CONTRACTOR: ICF 039A N° _____			
GENERAL DATA					
Instrument TAG:					
Serial:					
Model:					
MR:					
P.O.:					
P&ID:					
Rev:					
INSPECTIONS / CHECK (Ref. to QCP 1530.001)		N.A.	ACC.		
		Report / Reference	INSPECTOR SIGNATURE & DATE		
			CONTR.	TECHNIP	
1A- Inspection / Check Point					
A1.	Instrument calibration	<input type="checkbox"/>	<input type="checkbox"/>	ICF (*) ICF (*) ICF (*) ICF (*) ICF (*) ICF 038A (*) ICF (*)	
A2.	Instrument installation	<input type="checkbox"/>	<input type="checkbox"/>		
A3.	Impulse line pressure test	<input type="checkbox"/>	<input type="checkbox"/>		
A4.	Instrument signal cable to JB/LP and wiring check	<input type="checkbox"/>	<input type="checkbox"/>		
A5.	Instrument power cable and wiring check if any	<input type="checkbox"/>	<input type="checkbox"/>		
A6.	Cable way in trays; in conduits or underground-layout and installation checks	<input type="checkbox"/>	<input type="checkbox"/>		
A7.	Instrument cable - terminals execution and connection to Instruments and J.Box/L.Panel sides	<input type="checkbox"/>	<input type="checkbox"/>		
A8.	Instrument air sub headers pressure test	<input type="checkbox"/>	<input type="checkbox"/>		
A9.	Pneumatic connection and air-supply leak test	<input type="checkbox"/>	<input type="checkbox"/>		
A10.	Instrument ready for Loop check (relevant JB/LP checked, relevant cable from JB/LP to system checked, relevant system powered up)	<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS : (*) THE QC REPORTS SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : <div style="margin-left: 40px;"> A1. ICF _____ N° _____ A2. ICF _____ N° _____ A3. ICF _____ N° _____ A4. ICF _____ N° _____ A5. ICF _____ N° _____ A6. ICF _____ N° _____ A7. ICF _____ N° _____ A8. ICF 038A N° _____ A9. ICF _____ N° _____ </div>					
INSPECTORS		CONTRACTOR		TECHNIP	
NAME		NAME		NAME	
SIGNATURE		SIGNATURE		SIGNATURE	
DATE		DATE		DATE	

 	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
	CLIENT		INDIAN OIL CORPORATION LIMITED	
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – ANALYZER INSTALLATION	Project No. 080557C001	Document No. 080557C-000-QCP-1560-001	Rev. No. 0	Page 1 of 4

QUALITY CONTROL PLAN – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION

ANALYZER INSTALLATION





TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
ICF-001U	“U” Unpacking
ICF-005A; ICF-013A; ICF-038A	“A” Installation
ICF-039A	Final Inspection Report

REFERENCE DOCUMENTS:

- 080557C-000-STC-1590-001 Installation Standards
- 080557C-000-JSS-1590-001 Job Specification for Instrumentation Installation Works
- 080557C-000-PP-850 Site Co-ordination

LEGENDS

H	=	HOLD (Work Stop for Inspection- RFI required)
W	=	WITNESS (RFI required)
WC	=	100% SUPERVISION AND EXAMINATION BY CONTRACTOR
S	=	SURVEILLANCE (NO RFI)
R	=	REVIEW of QC REPORTS
N/A	=	NOT APPLICABLE
P	=	PREPARATION
A	=	DOCUMENT APPROVAL
IFA	=	ISSUED FOR APPROVAL / AUTHORIZATION
!	=	WARNING (Control of document revision status)
INFO	=	FOR INFORMATION
N.A.	=	NOT ACCEPTED
ACC.	=	ACCEPTED

			 Gopinadan Subramanian External 2019.10.14 16:44:37 +05'30'	 Shyamundar Kanthalurajan 2019.10.18 10:40:57 +05'30'	 Srisam Sankaranarayanan 2019.10.21 16:08:23 +05'30'	 Morischristopher Jesumarian 2019.11.01 13:21:42 +05'30'
0	14-10-2019	ISSUED FOR IMPLEMENTATION	SGR	KRS	SS	JMC
REV.	DATE	STATUS	WRITTEN BY (name & visa)	CHECKED BY (name & visa)	APPROVED BY (name & visa)	AUTHOR. BY (name & visa)

DOCUMENT REVISIONS

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 	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
	CLIENT		INDIAN OIL CORPORATION LIMITED	
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – ANALYZER INSTALLATION	Project No. 080557C001	Document No. 080557C-000-QCP-1560-001	Rev. No. 0	Page 2 of 4

QUALITY CONTROL PLAN

INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION

ANALYZER INSTALLATION (1560.00)

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
A	PRELIMINARY ACTIVITIES				
A1	CHECK OF CONTRACTOR DRAWINGS REVISION STATUS	N/A	!	!	
A2	CHECK OF CONTRACTOR TECHNICAL SPECIFICATION AND PROCEDURE	N/A	P	A	
A3	CONTRACTOR'S METHOD STATEMENT (IF REQUIRED)	N/A	IFA	A	(1)
A4	AVAILABILITY OF VENDOR INSTALLATION MANUAL, DRAWING AND DOCUMENTATION	N/A	IFA	A	(1)
A5	REVIEW OF SYSTEMS FAT PUNCH LIST (IF ANY)	By Vendor	WC	R	
B	UNPACKING				
B1	MATERIAL IDENTIFICATION AND CONSERVATION STATUS (FOR BOTH LOOSE AND PREASSEMBLED MATERIALS) UNPACKING VISUAL INSPECTION	ICF-001U	WC	W/R	
C	INSTALLATION				
C1	ON-LINE ANALYZER INSTALLATION				
C1.1	Field Instrument Calibration Test				
C1.1A	Check	ICF-005A	WC	W/R	
C1.1B	Signal Calibration	ICF-005A	WC	W/R	
C1.1C	Final inspection	ICF-005A	WC	W/R	
C1.2	Field instrument Installation				
C1.2A	Installation of supports	ICF-005A	WC	W/R	

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 	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
	CLIENT		INDIAN OIL CORPORATION LIMITED	
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – ANALYZER INSTALLATION	Project No. 080557C001	Document No. 080557C-000-QCP-1560-001	Rev. No. 0	Page 3 of 4

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C1.2B	Secondary Cable tray installation	ICF-005A	WC	W/R	
C1.2C	Signal cable installation, wiring and instrument grounding, cable gland installation	ICF-005A	WC	W/R	
C1.2D	Installation of instrument	ICF-005A	WC	W/R	
C1.2E	Instrument Check	ICF-005A	WC	W/R	
C1.2F	Final inspection	ICF-005A	WC	W/R	
C1.3	Instrument Impulse Line Pressure Test				
C1.3A	Ferrules Installation	ICF-005A	WC	W/R	
C1.3B	Tubing/Piping Test	ICF-005A	WC	W/R	
C1.3C	Final inspection	ICF-005A	WC	W/R	
C1.4A	Final Documentation Review	ICF-005A	P	R	
C1.4B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C2	ANALYZER INSTALLATION IN ANALYZER SHELTER				
C2.1	Field Instrument Calibration Test				
C2.1A	Check	ICF-005A	WC	W/R	
C2.1B	Signal Calibration	ICF-005A	WC	W/R	
C2.1C	Final inspection	ICF-005A	WC	W/R	
C2.2	Field instrument Installation				
C2.2A	Installation of supports	ICF-005A	WC	W/R	
C2.2C	Signal cable installation, wiring and instrument grounding, cable gland installation	ICF-005A	WC	W/R	
C2.2D	Installation of instrument	ICF-005A	WC	W/R	
C2.2E	Instrument Check	ICF-005A	WC	W/R	
C2.2F	Final inspection	ICF-005A	WC	W/R	

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 		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
		CLIENT	INDIAN OIL CORPORATION LIMITED		
QCP – INSTRUMENTATION & COMMUNICATION SYSTEM INSTALLATION – ANALYZER INSTALLATION	Project No. 080557C001	Document No. 080557C-000-QCP-1560-001		Rev. No. 0	Page 4 of 4

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL FORM	ACTION		NOTES
			CONTR.	TECHNIP	
C2.3	Instrument Impulse Line Pressure Test				
C2.3A	Ferrules Installation	ICF-005A	WC	W/R	
C2.3B	Tubing/Piping Test	ICF-005A	WC	W/R	
C2.3C	Final inspection	ICF-005A	WC	W/R	
C2.4A	Final Documentation Review	ICF-005A	P	R	
C2.4B	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)
C3	ANALYZER EQUIPMENT INSTALLATION				
C3.1	Field instrument Installation				
C3.1A	Installation of support	ICF-013A	WC	W/R	
C3.1D	Installation of instrument	ICF-013A	WC	W/R	
C3.1E	Check	ICF-013A	WC	W/R	
C3.1F	Final inspection	ICF-013A	WC	W/R	
C3.1G	Final Documentation Review	ICF-013A	P	R	
C3.1H	Field Instrument Installation Final Inspection	ICF-039A	WC	W/R	(2)

GENERAL NOTES



1 THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THE JOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN- CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.

2 CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEViate FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.

NOTES: (1) A COPY OF THE DOCUMENT WILL BE DELIVERED TO COMPANY FOR INFORMATION
(2) TO BE FILED AS PART OF LOOP CHECK FOLDERS

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 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM		ICF 005A		CLIENT	
FIELD INSTRUMENT CALIBRATION, INSTALLATION AND IMPULSE LINE PRESSURE TEST SUMMARY REPORT		PROJ. No. 080557C001		REV. 0	SH. _1_ OF _2_
		CONTRACTOR:		ICF 005A N° _____	
GENERAL DATA					
Tag/ Identification		Instrument pattern tag:			
MR/P.O. No.:		Hook Up Standard:			
Instrument type		Ref. drawing:			
Manufacturer		P & ID			
Model No/ Serial No.:		Operating pressure (Kg/Cm2g)			
F.F. DATA OPER ATION	Field Device TAG	Test Media			
	Node Address:	Test pressure (Kg/Cm2g)			
	Engineering Range / Unit:	Rev:			
	Calibr. Range:				
	Output signal:				
Accuracy:					
Mode (Analogue/Digital):					
INSPECTIONS / CHECK (Ref. to QCP 1560.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
					CONTR. TECHNIP
1A- Check		Results			
A1.	Instrument supply	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Overrange protection	<input type="checkbox"/>	<input type="checkbox"/>		
1B- Signal Calibration		Results			
B1.	0% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B2.	25% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B3.	50% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B4.	75% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B5.	100% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B6.	75% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B7.	50% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B8.	25% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
B9.	0% Output signal/ Error:	<input type="checkbox"/>	<input type="checkbox"/>		
1C- Final Inspection					
C1.	Final visual inspection	<input type="checkbox"/>	<input type="checkbox"/>		
C2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
2A- Installation of support					
A1.	Support prefabrication	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Support installation	<input type="checkbox"/>	<input type="checkbox"/>		
2B-Secondary cable tray Installation		<input type="checkbox"/>	<input type="checkbox"/>		
2C-Signal cable Installation, Wiring and Instrument Grounding, cable gland Installation		<input type="checkbox"/>	<input type="checkbox"/>		
2D - Installation of Instrument					
D1.	Hook up installation complete and sealed	<input type="checkbox"/>	<input type="checkbox"/>		
D2.	Sampling system installation	<input type="checkbox"/>	<input type="checkbox"/>		
D3.	Drains / vents	<input type="checkbox"/>	<input type="checkbox"/>		
D4.	Cable glands installed and tight	<input type="checkbox"/>	<input type="checkbox"/>		
D5.	TC / RTD fully inserted with gasket bolts and nuts tight	<input type="checkbox"/>	<input type="checkbox"/>		
D6.	Signal cable and cable tray install.	<input type="checkbox"/>	<input type="checkbox"/>		
D7.	Wiring and Grounding connection	<input type="checkbox"/>	<input type="checkbox"/>		



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 		PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
QUALITY CONTROL FORM		ICF 013A		CLIENT	
FIELD INSTRUMENT INSTALLATION SUMMARY REPORT		PROJ. No. 080557C001		REV. 0	SH. _1_ OF _1_
		CONTRACTOR:		ICF 013A N° _____	
GENERAL DATA					
Tag / Identification:					
MR/P.O.:					
Manufacturer & Model:					
Serial number:					
Hook Up Standard:					
Ref. drawing:					
INSPECTIONS / CHECK (Ref. to QCP 1560.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
					CONTR. TECHNIP
1A- Installation of support					
A1.	Support prefabrication	<input type="checkbox"/>	<input type="checkbox"/>		
A2.	Support installation	<input type="checkbox"/>	<input type="checkbox"/>		
1B - Secondary cable tray Installation		<input type="checkbox"/>	<input type="checkbox"/>		
1C - Signal cable Installation, Wiring and Instrument Grounding, cable gland Installation		<input type="checkbox"/>	<input type="checkbox"/>		
1D - Installation of Instrument					
D1.	Hook up installation complete and sealed	<input type="checkbox"/>	<input type="checkbox"/>		
D2.	Sampling system installation	<input type="checkbox"/>	<input type="checkbox"/>		
D3.	Drains / vents	<input type="checkbox"/>	<input type="checkbox"/>		
D4.	Cable glands installed and tight	<input type="checkbox"/>	<input type="checkbox"/>		
D5.	TC / RTD fully inserted with gasket bolts and nuts tight	<input type="checkbox"/>	<input type="checkbox"/>		
D6.	Signal cable and cable tray install.	<input type="checkbox"/>	<input type="checkbox"/>		
D7.	Wiring and Grounding connection	<input type="checkbox"/>	<input type="checkbox"/>		
1E - Check					
E1.	Instrument installation and maintenance space check	<input type="checkbox"/>	<input type="checkbox"/>		
E2.	HP & LP connections check (including Impulse line and slope)	<input type="checkbox"/>	<input type="checkbox"/>		
E3.	Flow direction check	<input type="checkbox"/>	<input type="checkbox"/>		
E4.	Cable identification	<input type="checkbox"/>	<input type="checkbox"/>		
E5.	Wiring identification & connection	<input type="checkbox"/>	<input type="checkbox"/>		
E6.	Labeling	<input type="checkbox"/>	<input type="checkbox"/>		
1F - Final inspection					
F1.	Final visual inspection (including material & rating)	<input type="checkbox"/>	<input type="checkbox"/>		
F2.	As-built marked up copy updated and available	<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS :					
1G - FINAL DOC. REVIEW	INSPECTORS	CONTRACTOR	TECHNIP	OWNER	
	NAME				
	SIGNATURE				
	DATE				

 		PROJECT Standby SRU & Additional Tanks IOCL Paradip Refinery		
QUALITY CONTROL FORM ICF 038A		CLIENT INDIAN OIL CORPORATION LIMITED		
INSTRUMENT AIR SUBHEADERS PRESSURE TEST INSPECTION REPORT		PROJ. No. 080557C001	REV. 0	
		SH. _1_ OF _1_		
		CONTRACTOR: ICF 038A N° _____		
GENERAL DATA				
INSTRUMENT SUBHEADER ID. OR AIR TAP N.				
Instruments supplied:				
Test pressure (Kg/Cm2g)		7 Kg/Cm2g (Unless otherwise specified)		
Test medium used		Air (Unless otherwise specified)		
INSTALLATION INSPECTION			Accepted	
			N.A.	ACC.
A- Installation				
A1.	Support		<input type="checkbox"/>	<input type="checkbox"/>
A2.	Installation		<input type="checkbox"/>	<input type="checkbox"/>
B - Connection / wiring				
B1.	Main air header commissioned		<input type="checkbox"/>	<input type="checkbox"/>
B2.	Secondary air header connected		<input type="checkbox"/>	<input type="checkbox"/>
B3.	Air distribution to instrument connected		<input type="checkbox"/>	<input type="checkbox"/>
C - Check				
C1.	Pressure service test with air at 7Kg/Cm2g		<input type="checkbox"/>	<input type="checkbox"/>
C2.	Blowing/Tightness		<input type="checkbox"/>	<input type="checkbox"/>
C3.	Labelling		<input type="checkbox"/>	<input type="checkbox"/>
D - Final inspection				
D1.	Final visual inspection		<input type="checkbox"/>	<input type="checkbox"/>
D2.	As-built marked up copy updated and available		<input type="checkbox"/>	<input type="checkbox"/>
REMARKS :				
INSPECTORS		CONTRACTOR		TECHNIP
NAME				
SIGNATURE				
DATE				

This document is developed by TECHNIP India Limited and the information it contains is property of Indian Oil Corporation Ltd. It shall not be used for any purpose other than that for which it is supplied.

		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
QUALITY CONTROL FORM ICF 039A		CLIENT	INDIAN OIL CORPORATION LIMITED		
FIELD INSTRUMENT INSTALLATION FINAL INSPECTION REPORT		PROJ. No. 080557001	REV. 0	SH. _1_ OF _1_	
		CONTRACTOR:		ICF 039A N° _____	
GENERAL DATA					
Instrument TAG:					
Serial:					
Model:					
MR:					
P.O.:					
P&ID:					
Rev:					
INSPECTIONS / CHECK (Ref. to QCP 1560.001)		N.A.	ACC.	Report / Reference	INSPECTOR SIGNATURE & DATE
					<div style="display: flex; justify-content: space-between;"> CONTR. TECHNIP </div>
1A- Inspection / Check Point					
A1.	Instrument calibration	<input type="checkbox"/>	<input type="checkbox"/>	ICF (*)	
A2.	Instrument installation	<input type="checkbox"/>	<input type="checkbox"/>	ICF (*)	
A3.	Impulse line pressure test	<input type="checkbox"/>	<input type="checkbox"/>	ICF (*)	
A4.	Instrument signal cable to JB/LP and wiring check	<input type="checkbox"/>	<input type="checkbox"/>	ICF (*)	
A5.	Instrument power cable and wiring check if any	<input type="checkbox"/>	<input type="checkbox"/>	ICF (*)	
A6.	Cable way in trays; in conduits or underground-layout and installation checks	<input type="checkbox"/>	<input type="checkbox"/>	ICF (*)	
A7.	Instrument cable - terminals execution and connection to Instruments and J.Box/L.Panel sides	<input type="checkbox"/>	<input type="checkbox"/>	ICF (*)	
A8.	Instrument air sub headers pressure test	<input type="checkbox"/>	<input type="checkbox"/>	ICF 038A (*)	
A9.	Pneumatic connection and air-supply leak test	<input type="checkbox"/>	<input type="checkbox"/>	ICF (*)	
A10.	Instrument ready for Loop check (relevant JB/LP checked, relevant cable from JB/LP to system checked, relevant system powered up)	<input type="checkbox"/>	<input type="checkbox"/>		
REMARKS : (*) THE QC REPORTS SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : <div style="display: flex; flex-direction: column; gap: 5px;"> <div>A1. ICF_____ N°_____</div> <div>A2. ICF_____ N°_____</div> <div>A3. ICF_____ N°_____</div> <div>A4. ICF_____ N°_____</div> <div>A5. ICF_____ N°_____</div> <div>A6. ICF_____ N°_____</div> <div>A7. ICF_____ N°_____</div> <div>A8. ICF 038A N°_____</div> <div>A9. ICF_____ N°_____</div> </div>					
INSPECTORS		CONTRACTOR		TECHNIP	OWNER
NAME					
SIGNATURE					
DATE					