

TYPICAL QAP

Manufacturer's Name & Address:		MANUFACTURING QUALITY PLAN										
		Item : PLC SYSTEM OF FIRE DETECTION & PROTECTION SYSTEM. BHEL spec: IPY56556			QAP No: 9572-151-QVI-Q-006 REV NO: 03 DATE: 01-07-2016 PAGE: 1 OF 2		PROJECT : MAIN SUPPLIER : PACKAGE : FIRE DETECTION & PROTECTION SYSTEM					
SL	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF	QUANTUM	REFERENCE	ACCEPTANCE	FORMATS OF	Agency			REMARKS
NO	OPERATION	CHECKED		CHECK	OF CHECK	DOCUMENT	NORMS	RECORD	M CRPL	C LLOYD	N NTPC	
1	2	3	4	5	6	7	8	9				11
1	Material Inspection											
A	PLC Panel and I/O Panel (Enclosure)	Physical	Major	Visual	100%	NTPC Approved Drawings	NTPC Approved Drawings	Test Certificates from Manufacturer.	P	V	V	
		Painting	Minor	Visual	100%	NTPC Approved Drawings	NTPC Approved Drawings	Test Certificates from Manufacturer.	P	V	V	
		Enclosur Protection Class	Minor	Visual	100%	NTPC Approved Drawings	NTPC Approved Drawings	Test Certificates from Manufacturer.	P	V	V	
B	SCADA PC	Physical	Major	Visual	100%	NTPC Approved Datasheet	NTPC Approved Datasheet	Internal report by CRPL	P	V	V	
C	PLC Processor and PLC Modules (Make: Honeywell)	Physical	Major	Visual	Sample of each Type	NTPC Approved Datasheet	NTPC Approved Datasheet	Internal report by CRPL	P	V	V	
E	Printer	Physical	Major	Visual	100%	NTPC Approved Datasheet	NTPC Approved Datasheet	Internal report by CRPL	P	V	V	
F	Ethernet switch	Physical	Major	Visual	Sample of each Type	NTPC Approved Datasheet	NTPC Approved Datasheet	Internal report by CRPL	P	V	V	
G	Relay board	Physical	Major	Visual	Sample of each Type	NTPC Approved Datasheet	NTPC Approved Datasheet	Internal report by CRPL	P	V	V	
H	Terminal Block	Physical	Major	Visual	Sample of each Type	NTPC Approved Drawings	NTPC Approved Drawings	Internal report by CRPL	P	V	V	
I	GUI / HMI / SCADA & Software (Make: Honeywell)	Physical	Major	Visual	100%	NTPC Approved Drawings	NTPC Approved Drawings	Paper license	P	V	V	
J	FO CABLE	Physical	Major	Visual	100%	NTPC Approved Datasheet	NTPC Approved Datasheet	Internal report by CRPL	P	V	V	
2	Inprocess Inspection											
	Assemble cabinet of system and Wired panel of marshaling	General Layout and workmanship	Major	Visual	100%	NTPC Approved Drawings	NTPC Approved Drawings	Internal report by CRPL	P	V	V	
		Wiring cabinet	Major	Loop Check	Sample	CRPL Internal test Report	CRPL Internal test Report	Internal report by CRPL	P	V	V	
	IR Test	Electrical	Major	Functional	100%	CRPL Internal test Report	CRPL Internal test Report	Internal report by CRPL	P	V	V	
	HV Test	Electrical	Major	Functional	100%	CRPL Internal test Report	CRPL Internal test Report	Internal report by CRPL	P	V	V	
Legend :												
M: Manufacturer/ Sub-Contractor-												
N : NTPC P: Perform												
C: Contractor - W: Witness												
ONS LLOYD V: Verification of documents												
Reviewed by									Approval Seal			

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NO	OPERATION	CHECKED		CHECK	OF CHECK	DOCUMENT	NORMS	RECORD	M CRPL	C LLOYD	N NTPC	
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3	Final Inspection											
A	Entire system comprising of processor IO modules power supply IO rack and other interface module as per the drawing approval	Operation check as per FAT procedure	Major	Functional	100%	NTPC Approved Drawings	NTPC Approved Drawings	FAT record sign off as per CRPL standard	P	W	W	
B	Dimentional and Mechanical Check (Paint Shade & Thickness)	As per FAT procedure	Major	Visual	100%	NTPC Approved Drawings	NTPC Approved Drawings	Internal report by CRPL	P	W	W	For Paint Shade & Paint Thickness, Manufacturer TC to be provided.
C	BOM Check	Quantity Verification	Major	visual	100%	NTPC Approved BOM	NTPC Approved BOM	NTPC Approved BOM	P	W	W	
D	PLC Power Check	As per FAT procedure	Major	Functional	Sample	NTPC Approved FAT	NTPC Approved FAT DOC NO. - 9572-151-PVI-W-001	FAT record sign off as per CRPL standard	P	W	W	
E	PLC Power Supply Redundency Check	As per FAT procedure	Major	Functional	100%	NTPC Approved FAT		FAT record sign off as per CRPL standard	P	W	W	
F	PLC IO Communication Redundency Check	As per FAT procedure	Major	Functional	100%	NTPC Approved FAT		FAT record sign off as per CRPL standard	P	W	W	
G	PLC Processor Redundency Check	As per FAT procedure	Major	Functional	100%	NTPC Approved FAT		FAT record sign off as per CRPL standard	P	W	W	
H	Ethernet Switch Redundency Check	As per FAT procedure	Major	Functional	100%	NTPC Approved FAT		FAT record sign off as per CRPL standard	P	W	W	
G	Input Output Check	As per FAT procedure	Major	Functional	100%	NTPC Approved FAT		FAT record sign off as per CRPL standard	P	W	W	10% TO BE WITNESS.
H	Seantime and Battery backup Test	As per FAT procedure	Major	Functional	100%	NTPC Approved FAT		FAT record sign off as per CRPL standard	P	W	W	
G	SCADA alarm Check	As per FAT procedure	Major	Functional	Sample	NTPC Approved FAT		FAT record sign off as per CRPL standard	P	W	W	
H	Security level check	As per FAT procedure	Major	Functional	Sample	NTPC Approved FAT		FAT record sign off as per CRPL standard	P	W	W	
G	Functional logic check	As per FAT procedure	Major	Functional	Sample	NTPC Approved FAT		FAT record sign off as per CRPL standard	P	W	W	
L	HMI Graphics check	As per FAT procedure	Major	Visual	Sample	NTPC Approved FAT		FAT record sign off as per CRPL standard	P	W	W	
Legend :												
M: Manufacturer/ Sub-Contractor												
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C: Contractor - LLOYD							W: Witness					
							V: Verification of documents					
							Reviewed by					
							Approval Seal					