

Corrigendum - 08 dated 15/09/2026 to CPC Tender No. BHEL/CPC/DRL/EPC_AHP/27/027

Work Description - EPC of Ash Handling System at 1X800 MW NTPC Darlipali Stage-II, Odisha

A) Following additional annexures are being issued with this corrigendum and these annexures shall form part of Technical Specifications:

Sl. No.	Documents Name
1	ANNEXURE 3E- QAP FOR CAT-III C&I ITEMS
2	ANNEXURE 3F- QAP FOR CAT-III ELECTRICAL ITEMS
3	ANNEXURE 3G-GUIDELINES FOR DCS INTERFACING FOR CHP & AHP SYSTEM

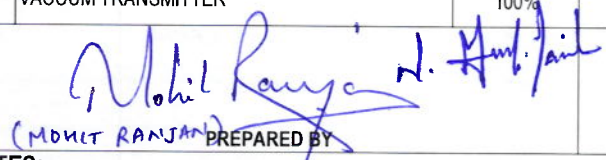
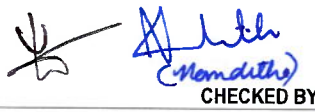
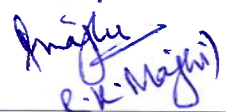
Note:

- 1) All other terms and conditions against this NIT shall remain unchanged.**
- 2) This corrigendum is to be submitted duly signed and stamped along with the Techno-commercial bid (Part- I).**

**for BHARAT HEAVY ELECTRICALS LTD
Sr MANAGER / SCT- CPC**

 BHEL ISG Bengaluru	INDUSTRIAL SYSTEMS GROUP 'PE- ELECTRICAL'	QUALITY ASSURANCE PLAN FOR C&I ITEMS							PACKAGE	CHP & AHP
									QAP NO	ISG/C&I/SQP/2026 DATE : 12-02-2026
									QAP REV NO.	0
LIST OF CHECKS/TEST (TABLE-A):										
1. VISUAL, DIMENSION AND SHEET THICKNESS	11. EFFICIENCY, REGULATION.	21. IR-HV-IR TEST	31. KV TEST TYPE TEST REPORT	D1. RAW MATERIAL TC / IN PROCESS INSPECTION REPORT						
2. MAKE MODEL, TYPE, RATING	12. OVERLOAD TEST	22. THICKNESS OF INSULATION AND SHEATHS	32. TYPE TEST REPORT AS PER RELEVANT	D2. FINAL INSPECTION REPORT						
3. PROCESS / ELECTRICAL CONNECTION	13. SWITCHING CAPABILITY & SEQUENCE	23. TENSILE STRENGTH AND ELONGATION	33. MANUFACTURER'S STANDARD	D3. CERTIFICATE OF CONFORMANCE						
4. CALIBRATION AND ACCURACY TEST	14. RANGE / TILT / ZOOM /	24. FRLS TEST FOR OI, TI, SDR AND HCL EMISSION	34. DROP OUT TEST	D4. FITMENT CUM INTERCHANGEABILITY CERTIFICATE						
5. INSULATION RESISTANCE TEST	15 DEGREE OF PROTECTION TT REPORT	25. CONTINUITY TEST	35. VERIFICATION OF BOM	D5. APPROVED OR AS BULT DRG/DATASHEET/BOM/SCHEDULE						
6. MATERIAL TEST CERTIFICATE	16. ASSEMBLY AND FITTING	26. DC RESISTANCE	36. FULL LOAD TEST							
7. HYDRO /HYDRAULIC TEST AS APPLICABLE	17. BOUGHT OUT ITEM TC	27. IMPEDANCE	37. SHORT CIRCUIT TEST							
8. PAINT SHADE AND THICKNESS	18. MFR TC / WARRANTY CERTIFICATE	28. ATTENUATION	38. RIPPLE MEASUREMENT							
9. FUNCTIONAL / OPERATIONAL TEST	19. LEAK TEST	29. CAPACITANCE TEST	39. TRANSFER- RETRANSFER TEST							
10. PROFIBUS/ FIELDBUS COMMUNICATION CHECK	20. CONDUCTOR RESISTANCE	30. OEM RECOMMENDED TEST	40. REVIEW OF DOCUMENTS							

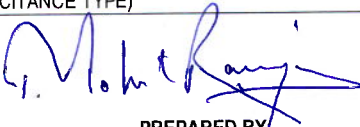
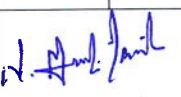
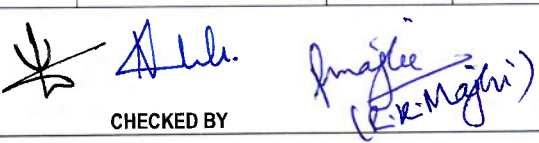
SN	EQUIPMENT DESCRIPTION	SAMPLING PLAN	RAW MATERIAL CHECKS/ IN PROCESS TEST TO BE PERFORMED BY			FINAL INSPECTION TO BE PERFORMED BY			DOCUMENTS TO BE SUBMITTED TO BHEL	REMARKS
			M	C	N	M	C	N		
			DOC.: D1			DOC.: D2				
1	2	3	4	5	6	7	8	9	10	12
I	TRANSMITTERS / METERS									
I.1	TEMPERATURE TRANSMITTER (NON PROFIBUS BASED)	100%	33	Nil	Nil	1, 2, 3, 4, 9, 15, 16	40	Nil	D1, D2, D3,D5	
I.2	TEMPERATURE TRANSMITTER (PROFIBUS BASED)	100%	33	Nil	Nil	1, 2, 3, 4, 9, 10, 15, 16	40	Nil	D1, D2, D3,D5	
I.3	ULTRASONIC / NOGS LEVEL TRANSMITTER	100%	33	Nil	Nil	1, 2, 3, 4, 9, 10, 15, 16	40	Nil	D1, D2, D3,D5	
I.4	RADAR TYPE LEVEL TRANSMITTER	100%	33	Nil	Nil	1, 2, 3, 4, 9, 10, 15, 16	40	Nil	D1, D2, D3,D5	
I.5	3D LEVEL TRANSMITTER	100%	33	Nil	Nil	1, 2, 3, 4, 9, 10, 15, 16	40	Nil	D1, D2, D3,D5	
I.6	PRESSURE TRANSMITTER	100%	33	Nil	Nil	1, 2, 3, 4, 9, 10, 12, 15, 16	40	Nil	D1, D2, D3,D5	
I.7	DIFFERENTIAL PRESSURE TRANSMITTER	100%	33	Nil	Nil	1, 2, 3, 4, 9, 10, 12, 15, 16	40	Nil	D1, D2, D3,D5	
I.8	VACUUM TRANSMITTER	100%	33	Nil	Nil	1, 2, 3, 4, 9, 10, 12, 15, 16	40	Nil	D1, D2, D3,D5	

 (MOHIT RANJAN) PREPARED BY	 CHECKED BY	 P.K. Majhi	 APPROVED BY
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NOTES:

- Abbreviations Used: M: MANUFACTURER ; C: PACKAGE VENDOR ; N: BHEL
- This Standard QAP is applicable for items which are listed as CAT-III under inspection categorisation by END CUSTOMER for specific project.
- BHEL reserves the right to conduct repeat test if required.
- All Instrument to be used for Testing / Inspection shall have valid ' calibration certificates' to be verified by agencies, Manufacturer & Contractor.
- Fitment cum Interchangeability certificate (D4) to be submitted for above items if appearing in Mandatory Spares List.

 ISG Bengaluru	INDUSTRIAL SYSTEMS GROUP 'PE- ELECTRICAL'	QUALITY ASSURANCE PLAN FOR C&I ITEMS							PACKAGE	CHP & AHP
									QAP NO	ISG/C&I/SQP/2026 DATE : 12-02-2026
									QAP REV NO.	0
LIST OF CHECKS/TEST (TABLE-A):										
1. VISUAL, DIMENSION AND SHEET THICKNESS	11. EFFICIENCY, REGULATION.	21. IR-HV-IR TEST	31. KV TEST TYPE TEST REPORT	D1. RAW MATERIAL TC / IN PROCESS INSPECTION REPORT						
2. MAKE MODEL, TYPE, RATING	12. OVERLOAD TEST	22. THICKNESS OF INSULATION AND SHEATHS	32. TYPE TEST REPORT AS PER RELEVANT	D2. FINAL INSPECTION REPORT						
3. PROCESS / ELECTRICAL CONNECTION	13. SWITCHING CAPABILITY & SEQUENCE	23. TENSILE STRENGTH AND ELONGATION	33. MANUFACTURER'S STANDARD	D3. CERTIFICATE OF CONFORMANCE						
4. CALIBRATION AND ACCURACY TEST	14. RANGE / TILT / ZOOM /	24. FRLS TEST FOR OI, TI, SDR AND HCL EMISSION	34. DROP OUT TEST	D4. FITMENT CUM INTERCHANGEABILITY CERTIFICATE						
5. INSULATION RESISTANCE TEST	15. DEGREE OF PROTECTION TT REPORT	25. CONTINUITY TEST	35. VERIFICATION OF BOM	D5. APPROVED OR AS BULT DRG/DATASHEET/BOM/SCHEDULE						
6. MATERIAL TEST CERTIFICATE	16. ASSEMBLY AND FITTING	26. DC RESISTANCE	36. FULL LOAD TEST							
7. HYDRO /HYDRAULIC TEST AS APPLICABLE	17. BOUGHT OUT ITEM TC	27. IMPEDANCE	37. SHORT CIRCUIT TEST							
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10. PROFIBUS/ FIELDBUS COMMUNICATION CHECK	20. CONDUCTOR RESISTANCE	30. OEM RECOMMENDED TEST	40. REVIEW OF DOCUMENTS							

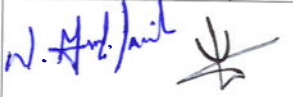
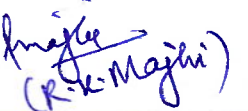
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			M	C	N	M	C	N		
			DOC.: D1			DOC.: D2				
1	2	3	4	5	6	7	8	9	10	12
I.9	FLOW TRANSMITTER	100%	33	Nil	Nil	1, 2, 3, 4, 9, 10, 15, 16	40	Nil	D1, D2, D3,D5	
I.10	DENSITY TRANSMITTER	100%	33	Nil	Nil	1, 2, 3, 4, 9, 10, 15, 16	40	Nil	D1, D2, D3,D5	
I.11	MASS FLOW METER	100%	33	Nil	Nil	1, 2, 3, 4, 9, 10, 15, 16	40	Nil	D1, D2, D3,D5	
I.12	DEW POINT METER	100%	33	Nil	Nil	1, 2, 3, 4, 9, 15, 16	40	Nil	D1, D2, D3,D5	
I.13	ENCODER	100%	33	Nil	Nil	1, 2, 3, 4, 9, 15, 16	40	Nil	D1, D2, D3,D5	
I.14	ANTI COLLISION SENSOR	100%	33	Nil	Nil	1, 2, 3, 4, 9, 15, 16	40	Nil	D1, D2, D3,D5	
II	SWITCHES / SENSORS									
II.1	PRESSURE SWITCH / DP SWITCH / VACUUM SWITCH	100%	33	Nil	Nil	1, 2, 3, 4, 5, 9, 15, 19, 25	40	Nil	D1, D2, D3,D5	
II.2	LEVEL SWITCH (FLOAT TYPE/ DISPLACER TYPE/ CAPACITANCE TYPE)	100%	33	Nil	Nil	1, 2, 3, 4, 5, 7, 9, 15, 19, 25	40	Nil	D1, D2, D3,D5	
 PREPARED BY			 CHECKED BY			 APPROVED BY				

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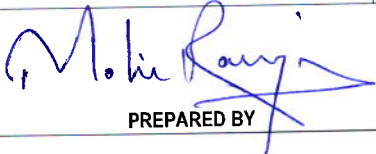
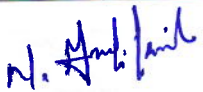
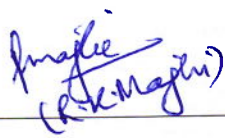
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			M	C	N	M	C	N		
			DOC.: D1			DOC.: D2				
1	2	3	4	5	6	7	8	9	10	12
II.3	LEVEL SWITCH (RF TYPE)	100%	33	Nil	Nil	1, 2, 3, 4, 5, 9, 15, 19, 25	40	Nil	D1, D2, D3,D5	
II.4	PROXIMITY SENSORS	100%	33	Nil	Nil	1, 2, 3, 4, 9, 15	40	Nil	D1, D2, D3,D5	
II.5	DUST SENSOR	100%	33	Nil	Nil	1, 2, 3, 4, 9, 15	40	Nil	D1, D2, D3,D5	
II.6	RADAR TYPE LEVEL SENSOR	100%	33	Nil	Nil	1, 2, 3, 4, 9, 15	40	Nil	D1, D2, D3,D5	
II.7	PROXIMITY SWITCH	100%	33	Nil	Nil	1, 2, 3, 4, 5, 9, 15, 25	40	Nil	D1, D2, D3,D5	
II.8	LIMIT SWITCH / HEAVY DUTY LIMIT SWITCH / END LIMIT SWITCHES	100%	33	Nil	Nil	1, 2, 3, 4, 5, 9, 15, 19, 25	40	Nil	D1, D2, D3,D5	
II.9	FLOW SWITCH	100%	33	Nil	Nil	1, 2, 3, 4, 5, 9, 15, 19, 25	40	Nil	D1, D2, D3,D5	
II.10	TEMPERATURE ELEMENTS	100%	33	Nil	Nil	1, 2, 3, 19, 21	40	Nil	D1, D2, D3,D5	
II.11	TEMPERATURE SWITCH	100%	33	Nil	Nil	1, 2, 3, 4, 5, 9, 15, 19, 25	40	Nil	D1, D2, D3,D5	

 PREPARED BY	  CHECKED BY	 APPROVED BY
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ISG Bengaluru

INDUSTRIAL SYSTEMS GROUP
'PE- ELECTRICAL

QUALITY ASSURANCE PLAN FOR C&I ITEMS

PACKAGE

CHP & AHP

QAP NO

ISG/C&I/SQP/2026 DATE : 12-02-2026

QAP REV NO.

0

LIST OF CHECKS/TEST (TABLE-A):

1. VISUAL, DIMENSION AND SHEET THICKNESS	11. EFFICIENCY, REGULATION.	21. IR-HV-IR TEST	31. KV TEST TYPE TEST REPORT	D1. RAW MATERIAL TC / IN PROCESS INSPECTION REPORT
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3. PROCESS / ELECTRICAL CONNECTION	13. SWITCHING CAPABILITY & SEQUENCE	23. TENSILE STRENGTH AND ELONGATION	33. MANUFACTURER'S STANDARD	D3. CERTIFICATE OF CONFORMANCE
4. CALIBRATION AND ACCURACY TEST	14. RANGE / TILT / ZOOM /	24. FRLS TEST FOR OI, TI, SDR AND HCL EMISSION	34. DROP OUT TEST	D4. FITMENT CUM INTERCHANGEABILITY CERTIFICATE
5. INSULATION RESISTANCE TEST	15 DEGREE OF PROTECTION TT REPORT	25. CONTINUITY TEST	35. VERIFICATION OF BOM	D5. APPROVED OR AS BULT DRG/DATASHEET/BOM/SCHEDULE
6. MATERIAL TEST CERTIFICATE	16. ASSEMBLY AND FITTING	26. DC RESISTANCE	36. FULL LOAD TEST	
7. HYDRO /HYDRAULIC TEST AS APPLICABLE	17. BOUGHT OUT ITEM TC	27. IMPEDANCE	37. SHORT CIRCUIT TEST	
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			M DOC.: D1	C	N	M DOC.: D2	C	N		
1	2	3	4	5	6	7	8	9	10	12
IV	VALVES									
IV.1	SOLENOID VALVES	100%	33	Nil	Nil	1, 2, 3, 5, 9, 15, 19, 34	40	Nil	D1, D2, D3,D5	
IV.2	CONTROL VALVE	100%	33	Nil	Nil	1, 2, 4, 8, 15, 19, 31	40	Nil	D1, D2, D3,D5	
V	JUNCTION BOXES / ENCLOSURES									
V.1	FRP JUNCTION BOX	100%	6, 33	Nil	Nil	1, 2, 8, 15, 21	40	Nil	D1, D2, D3,D5	
V.2	LOCAL INSTRUMENT RACKS	100%	6, 33	Nil	Nil	1, 8, 16	40	Nil	D1, D2, D3,D5	
V.3	LOCAL INSTRUMENT ENCLOSURE	100%	6, 33	Nil	Nil	1, 2, 8, 15	40	Nil	D1, D2, D3,D5	
V.4	INSTRUMENT JUNCTION BOX	100%	6, 33	Nil	Nil	1, 2, 8, 15, 21	40	Nil	D1, D2, D3,D5	
V.5	UPS DB	100%	6, 33	Nil	Nil	1, 2, 8, 9, 15, 21, 25, 35	40	Nil	D1, D2, D3,D5	

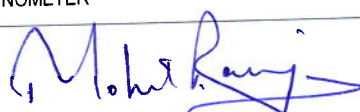
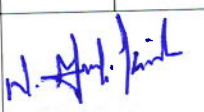
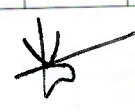
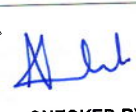
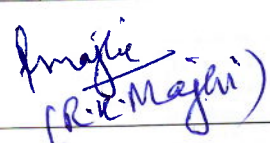
PREPARED BY

CHECKED BY

APPROVED BY

NOTES:

- Abbreviations Used: M: MANUFACTURER ; C: PACKAGE VENDOR ; N: BHEL
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 ISG Bengaluru	INDUSTRIAL SYSTEMS GROUP 'PE- ELECTRICAL'	QUALITY ASSURANCE PLAN FOR C&I ITEMS						PACKAGE	CHP & AHP	
								QAP NO	ISG/C&I/SQP/2026 DATE : 12-02-2026	
								QAP REV NO.	0	
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			M C N	M C N						
			DOC.: D1	DOC.: D2						
1	2	3	4	5	6	7	8	9	10	12
VI	ELECTRICAL / ELECTRONIC COMPONENTS									
VI.1	INTERPOSING RELAYS	100%	NA	Nil	Nil	9	40	Nil	D1, D2, D3,D5	
VI.2	UPS	100%	6, 17	Nil	Nil	1, 2, 8, 9, 11, 21, 25, 35, 36, 37, 38, 39	40	Nil	D1, D2, D3,D5	
VI.3	PRINTERS	100%	NA	Nil	Nil	18	40	Nil	D1, D2, D3,D5	
VI.4	EWS/ OWS	100%	NA	Nil	Nil	18	40	Nil	D1, D2, D3,D5	
VI.5	VOLTAGE STABILISER	100%	NA	Nil	Nil	18	40	Nil	D1, D2, D3,D5	
VI.6	ANNUNCIATOR	100%	33	Nil	Nil	1, 2, 3, 9	40	Nil	D1, D2, D3,D5	
VI.7	ANEMOMETER	100%	33	Nil	Nil	1, 2, 3, 9, 15	40	Nil	D1, D2, D3,D5	
VI.8	INCLINOMETER	100%	33	Nil	Nil	1, 2, 3, 9, 15	40	Nil	D1, D2, D3,D5	
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			M	C	N	M	C	N		
			DOC.: D1			DOC.: D2				
1	2	3	4	5	6	7	8	9	10	12
VI.9	PHOTO CELL	100%	33	Nil	Nil	1, 2, 3, 9, 15	40	Nil	D1, D2, D3,D5	
VI.10	TELEPHONE / PA SET FOR SCR	100%	33	Nil	Nil	1, 2, 9	40	Nil	D1, D2, D3,D5	
VI.11	BATTERY HEALTH MONITORING SYSTEM	100%	33	Nil	Nil	1, 2, 3, 4, 5, 9, 15	40	Nil	D1, D2, D3,D5	
VI.12	CONDITION MONITORING SYSTEM	100%	33	Nil	Nil	1, 2, 3, 4, 9, 15	40	Nil	D1, D2, D3,D5	
VI.13	FLASHING BEACON	100%	33	Nil	Nil	1, 2, 5, 9, 15	40	Nil	D1, D2, D3,D5	
VI.14	CONSOLES / FURNITURE FOR EWS /OWS	100%	NA	Nil	Nil	33	40	Nil	D1, D2, D3,D5	
VII	CONFIGURABLE HARDWARE									
VII.1	FIELD BUS MODULES	100%	33	Nil	Nil	1, 2, 3, 15, 16	40	Nil	D1, D2, D3,D5	
VII.2	SEGMENT PROTECTOR JB	100%	33	Nil	Nil	1, 2, 3, 15, 16	40	Nil	D1, D2, D3,D5	

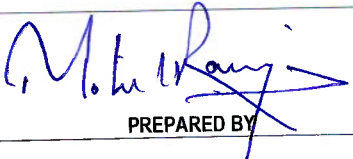
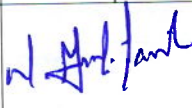
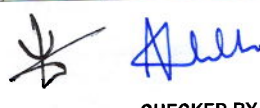
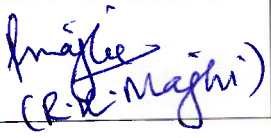
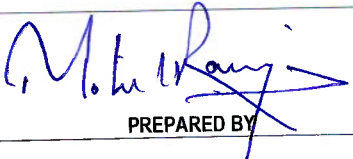
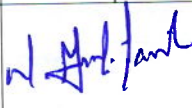
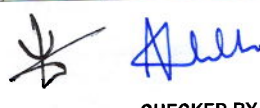
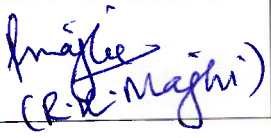
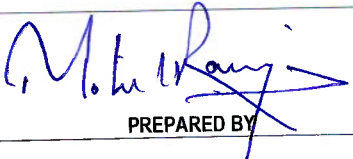
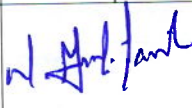
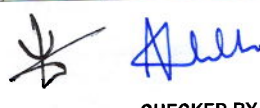
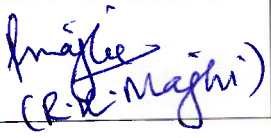
PREPARED BY

CHECKED BY

APPROVED BY

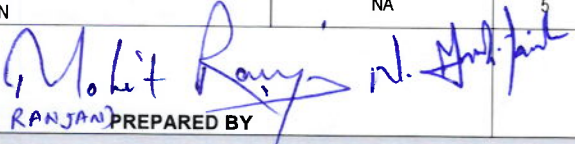
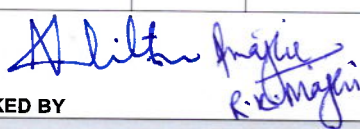
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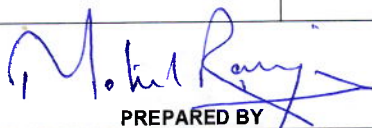
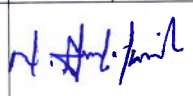
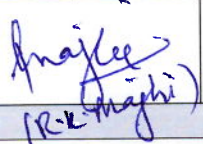
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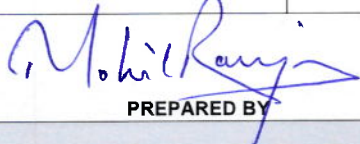
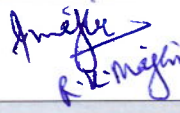
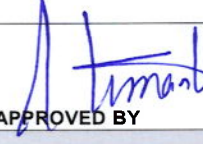
 ISG Bengaluru	INDUSTRIAL SYSTEMS GROUP 'PE- ELECTRICAL'	QUALITY ASSURANCE PLAN FOR C&I ITEMS							PACKAGE	CHP & AHP																																																																																																																										
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LIST OF CHECKS/TEST (TABLE-A):																																																																																																																																				
1. VISUAL, DIMENSION AND SHEET THICKNESS			11. EFFICIENCY, REGULATION.			21. IR-HV-IR TEST			31. KV TEST TYPE TEST REPORT																																																																																																																											
2. MAKE MODEL, TYPE, RATING			12. OVERLOAD TEST			22. THICKNESS OF INSULATION AND SHEATHS			32. TYPE TEST REPORT AS PER RELEVANT																																																																																																																											
3. PROCESS / ELECTRICAL CONNECTION			13. SWITCHING CAPABILITY & SEQUENCE			23. TENSILE STRENGTH AND ELONGATION			33. MANUFACTURER'S STANDARD																																																																																																																											
4. CALIBRATION AND ACCURACY TEST			14. RANGE / TILT / ZOOM /			24. FRLS TEST FOR OI, TI, SDR AND HCL EMISSION			34. DROP OUT TEST																																																																																																																											
5. INSULATION RESISTANCE TEST			15. DEGREE OF PROTECTION TT REPORT			25. CONTINUITY TEST			35. VERIFICATION OF BOM																																																																																																																											
6. MATERIAL TEST CERTIFICATE			16. ASSEMBLY AND FITTING			26. DC RESISTANCE			36. FULL LOAD TEST																																																																																																																											
7. HYDRO /HYDRAULIC TEST AS APPLICABLE			17. BOUGHT OUT ITEM TC			27. IMPEDANCE			37. SHORT CIRCUIT TEST																																																																																																																											
8. PAINT SHADE AND THICKNESS			18. MFR TC / WARRANTY CERTIFICATE			28. ATTENUATION			38. RIPPLE MEASUREMENT																																																																																																																											
9. FUNCTIONAL / OPERATIONAL TEST			19. LEAK TEST			29. CAPACITANCE TEST			39. TRANSFER- RETRANSFER TEST																																																																																																																											
10. PROFIBUS/ FIELDBUS COMMUNICATION CHECK			20. CONDUCTOR RESISTANCE			30. OEM RECOMMENDED TEST			40. REVIEW OF DOCUMENTS																																																																																																																											
<table border="1"> <thead> <tr> <th rowspan="3">SN</th> <th rowspan="3">EQUIPMENT DESCRIPTION</th> <th rowspan="3">SAMPLING PLAN</th> <th colspan="3">RAW MATERIAL CHECKS/ IN PROCESS TEST TO BE PERFORMED BY</th> <th colspan="3">FINAL INSPECTION TO BE PERFORMED BY</th> <th rowspan="3">DOCUMENTS TO BE SUBMITTED TO BHEL</th> <th rowspan="3">REMARKS</th> </tr> <tr> <th>M</th> <th>C</th> <th>N</th> <th>M</th> <th>C</th> <th>N</th> </tr> <tr> <th colspan="3">DOC.: D1</th> <th colspan="3">DOC.: D2</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> <th>9</th> <th>10</th> <th>12</th> </tr> </thead> <tbody> <tr> <td>VII.3</td> <td>CALL STATION, AMPLIFIER, LOUD SPEAKER, POWER SUPPLY MODULE, LAN SWITCH, SERVER, CAMERA</td> <td>100%</td> <td>NA</td> <td>Nil</td> <td>Nil</td> <td>1, 2, 14, 18</td> <td>40</td> <td>Nil</td> <td>D1, D2, D3,D5</td> <td></td> </tr> <tr> <td>VII.4</td> <td>KEYBOARD, JOYSTICK</td> <td>100%</td> <td>NA</td> <td>Nil</td> <td>Nil</td> <td>1, 2, 18</td> <td>40</td> <td>Nil</td> <td>D1, D2, D3,D5</td> <td></td> </tr> <tr> <td>VII.5</td> <td>HAND HELD CALIBRATOR</td> <td>100%</td> <td>NA</td> <td>Nil</td> <td>Nil</td> <td>18</td> <td>40</td> <td>Nil</td> <td>D1, D2, D3,D5</td> <td></td> </tr> <tr> <td colspan="11"> VIII CABLES AND ACCESSORIES </td> </tr> <tr> <td>VIII.1</td> <td>INSTRUMENT CABLE</td> <td>SAMPLES AS PER IS-1554/8784</td> <td>6</td> <td>Nil</td> <td>Nil</td> <td>1, 2, 20, 21, 22, 23, 24, 25, 22, 28, 32</td> <td>40</td> <td>Nil</td> <td>D1, D2, D3,D5</td> <td>TYPE TEST REPORT REQUIREMENT AS PER NIT SPECIFICATIONS</td> </tr> <tr> <td>VIII.2</td> <td>PROFIBUS CABLE</td> <td>1 SAMPLE / LOT</td> <td>6</td> <td>Nil</td> <td>Nil</td> <td>1, 2, 20, 21, 22, 23, 24, 25, 22, 28, 32</td> <td>40</td> <td>Nil</td> <td>D1, D2, D3,D5</td> <td>TYPE TEST REPORT REQUIREMENT AS PER NIT SPECIFICATIONS</td> </tr> <tr> <td>VIII.3</td> <td>OFC CABLE</td> <td>1 SAMPLE / LOT</td> <td>6</td> <td>Nil</td> <td>Nil</td> <td>1, 2, 21, 26, 27, 28, 29</td> <td>40</td> <td>Nil</td> <td>D1, D2, D3,D5</td> <td></td> </tr> <tr> <td colspan="3"> PREPARED BY  </td> <td colspan="3">  </td> <td colspan="3"> CHECKED BY  </td> <td colspan="2"> APPROVED BY  </td> </tr> </tbody> </table>											SN	EQUIPMENT DESCRIPTION	SAMPLING PLAN	RAW MATERIAL CHECKS/ IN PROCESS TEST TO BE PERFORMED BY			FINAL INSPECTION TO BE PERFORMED BY			DOCUMENTS TO BE SUBMITTED TO BHEL	REMARKS	M	C	N	M	C	N	DOC.: D1			DOC.: D2			1	2	3	4	5	6	7	8	9	10	12	VII.3	CALL STATION, AMPLIFIER, LOUD SPEAKER, POWER SUPPLY MODULE, LAN SWITCH, SERVER, CAMERA	100%	NA	Nil	Nil	1, 2, 14, 18	40	Nil	D1, D2, D3,D5		VII.4	KEYBOARD, JOYSTICK	100%	NA	Nil	Nil	1, 2, 18	40	Nil	D1, D2, D3,D5		VII.5	HAND HELD CALIBRATOR	100%	NA	Nil	Nil	18	40	Nil	D1, D2, D3,D5		VIII CABLES AND ACCESSORIES											VIII.1	INSTRUMENT CABLE	SAMPLES AS PER IS-1554/8784	6	Nil	Nil	1, 2, 20, 21, 22, 23, 24, 25, 22, 28, 32	40	Nil	D1, D2, D3,D5	TYPE TEST REPORT REQUIREMENT AS PER NIT SPECIFICATIONS	VIII.2	PROFIBUS CABLE	1 SAMPLE / LOT	6	Nil	Nil	1, 2, 20, 21, 22, 23, 24, 25, 22, 28, 32	40	Nil	D1, D2, D3,D5	TYPE TEST REPORT REQUIREMENT AS PER NIT SPECIFICATIONS	VIII.3	OFC CABLE	1 SAMPLE / LOT	6	Nil	Nil	1, 2, 21, 26, 27, 28, 29	40	Nil	D1, D2, D3,D5		PREPARED BY 						CHECKED BY 			APPROVED BY 	
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Annexure-3F

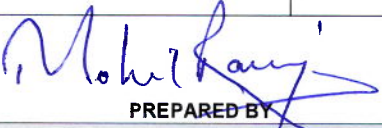
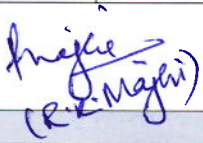
Annexure 3F

 ISO Bangalore	INDUSTRIAL SYSTEMS GROUP PE- ELECTRICAL	QUALITY ASSURANCE PLAN FOR ELECTRICAL ITEMS							PACKAGE	CHP AND AHP
									QAP NO	ISG/ELEC/SQP/2026 DATE : 12-02-2026
									QAP REV NO. .	0
LIST OF CHECKS/TEST (TABLE-A):										
1. VISUAL & DIMENSIONAL & THICKNESS		16. DIELECTRIC STRENGTH		33. MANUFACTURER STANDARD PROCEDURE		50. PRE- TREATMENT OF SHEET		D1. RAW MATERIAL TC / IN PROCESS INSPECTION REPORT		
2. MAKE, TYPE AND RATING		17. IP TEST/ TYPE TEST REPORT		34. BOM CHECK		51. SURFACE FINISH CHECK		D2. FINAL INSPECTION REPORT		
3. FITMENT & ALIGNMENT		18. CALIBRATION TEST		35. CONTINUITY TEST		52. GUARANTEE/ WARRANTY CERTIFICATE		D3. CERTIFICATE OF CONFORMANCE		
4. PHYSICAL TEST(SAMPLE)		19. ARC RESISTANCE		36. ADHESION TEST		53. RESISTANCE TO MOISTURE TEST/ TTR		D4. FITMENT CUM INTERCHANGEABILITY CERTIFICATE		
5. RAW MATERIAL TC		20. TC FOR BOI		37. PI VALUE		54. PHOTOMETRY TEST/ TTR		D5. APPROVED OR AS BUILT DRG/ DATASHEET/ BOM/SCHEDULE		
6. ULTRASONIC TEST		21. CHEMICAL ANALYSIS		38. SETTING OF LIMIT & TORQUE SWITCHES		55. CHECKS ON LED DRIVER- OC-SC / OVERLOAD				
7. MAGNETIC PARTICLE TEST(MPT)		22. PAINT SHADE & THICKNESS VERIFICATION		39. PHASE SEQUENCE CORRECTION TEST		56. LED DRIVER- THD & PF CHECKS				
8. RADIOGRAPHY TEST		23. FLAMMABILITY TEST		40. DISCHARGE TEST		57. BENDING AND COMPRESSION TEST				
9. DYE PENETRATION TEST		24. OPERATIONAL & FUNCTIONAL TEST		41. VERIFICATION OF MARKING		58. VOLUME RESISTIVITY				
10. MEASUREMENT OF IR VALUE :		25. GLASS CONTENT CHECK		42. CONDUCTOR RESISTANCE		59. HOT SET TEST FOR XLPE				
A) BEFORE HV TEST		26. FLAME PROOF TEST		43. INNER AND OUTER SHEATH AND INSULATION THICKNESS		60. OXYGEN INDEX TEST ON OUTER SHEATH				
B) AFTER HV TEST		27. CLEARANCE & CREEPAGE		44. TENSILE STRENGTH TEST		61. SMOKE DENSITY RATING TEST ON OUTER SHEATH				
11. HV TEST/DIELECTRIC TEST		28. ACCEPTANCE TEST		45. ROUTINE TEST AS PER IS 12615		62. ACID GAS GENERATION TEST ON OUTER SHEATH				
12. ROUTINE TEST AS PER RELEVANT IS STANDARD		29. FR/FRLS TEST AS PER RELEVANT IS		46. WINDING RESISTANCE OF HV AND LV SIDE		63. FLAMMABILITY TEST ON COMPLETED CABLE				
13. TYPE TESTS REPORT AS PER RELEVANT IS/ IEC		30. GALVANISATION MASS, THICKNESS AND UNIFORMITY		47. VOLTAGE RATIO TEST		64. REVIEW OF DOCUMENTS/ TEST REPORTS				
14. BULK DENSITY TEST		31. VECTOR GROUP		48. DEFLECTION LOAD TEST						
15. PH TEST		32. TERMINATION, FERRULING AND EARTHING		49. PROOF LOAD TEST						
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			M	C	N	M	C	N		
			DOC : D1			DOC: D2				
1	2	3	4	5	6	7	8	9	10	12
I	EARTHING AND LIGHTNING PROTECTION / SUPPORTS									
I.1	EARTHING MATERIAL- MS RODS / GI FLATS / GI WIRES	IS-2500/ S-4759	5	Nil	Nil	1, 2, 30, 36, 51	64	Nil	D1, D2, D3,D5	
I.2	RUBBER MATS	20% of each type	5	Nil	Nil	1, 2, 12	64	Nil	D1, D2, D3,D5	
I.3	LIGHTNING PROTECTION MATERIALS	IS-2500/ S-4759	5	Nil	Nil	1, 2, 30, 36, 51	64	Nil	D1, D2, D3,D5	
I.4	MS PIPE / HUME PIPES / GI CONDUITS	IS-9537-II / IS-4736	5	Nil	Nil	1, 2	64	Nil	D1, D2, D3,D5	
I.5	EARTH SHOE	100%	5	Nil	Nil	1, 2	64	Nil	D1, D2, D3,D5	
I.6	STRUCTURAL STEEL FOR EQUIPMENT ERECTION	NA	5	Nil	Nil	1, 2	64	Nil	D1, D2, D3,D5	
 (MOHIT RANJAN) PREPARED BY			 CHECKED BY			 APPROVED BY				
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			DOC: D1			DOC: D2				
1	2	3	4	5	6	7	8	9	10	12
II	LCP / JB / LPBS									
II.1	POWER JB /CONTROL JB / RTD JB	100%	5, 20	Nil	Nil	1, 2, 10, 11, 17, 22	64	Nil	D1, D2, D3,D5	
II.2	LOCAL PUSH BUTTON STATIONS	100%	5, 20	Nil	Nil	1, 2, 10, 11, 17, 22	64	Nil	D1, D2, D3,D5	
II.3	PCC JB	100%	5, 20	Nil	Nil	1, 2, 10, 11, 17, 22, 24, 32, 34,	64	Nil	D1, D2, D3,D5	
II.4	INSTRUMENT SUPPLY PANEL	100%	5, 20	Nil	Nil	1, 2, 10, 11, 17, 22, 24, 32, 34,	64	Nil	D1, D2, D3,D5	
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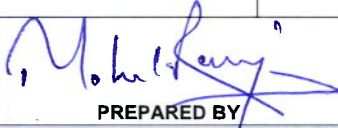
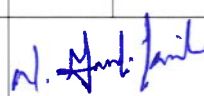
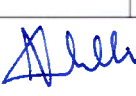
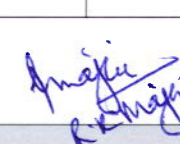
 BHEL	INDUSTRIAL SYSTEMS GROUP PE- ELECTRICAL	QUALITY ASSURANCE PLAN FOR ELECTRICAL ITEMS							PACKAGE	CHP AND AHP
									QAP NO	ISG/ELEC/SQP/2026 DATE : 12-02-2026
									QAP REV NO, .	0
LIST OF CHECKS/TEST (TABLE-A):										
1. VISUAL & DIMENSIONAL & THICKNESS		16. DIELECTRIC STRENGTH		33. MANUFACTURER STANDARD PROCEDURE		50. PRE- TREATMENT OF SHEET		D1. RAW MATERIAL TC / IN PROCESS INSPECTION REPORT		
2. MAKE, TYPE AND RATING		17. IP TEST/ TYPE TEST REPORT		34. BOM CHECK		51. SURFACE FINISH CHECK		D2. FINAL INSPECTION REPORT		
3. FITMENT & ALIGNMENT		18. CALIBRATION TEST		35. CONTINUITY TEST		52. GUARANTEE/ WARRANTY CERTIFICATE		D3. CERTIFICATE OF CONFORMANCE		
4. PHYSICAL TEST(SAMPLE)		19. ARC RESISTANCE		36. ADHESION TEST		53. RESISTANCE TO MOISTURE TEST/ TTR		D4. FITMENT CUM INTERCHANGEABILITY CERTIFICATE		
5. RAW MATERIAL TC		20. TC FOR BOI		37. PI VALUE		54. PHOTOMETRY TEST/ TTR		D5. APPROVED OR AS BUILT DRG/ DATASHEET/ BOM/SCHEDULE		
6. ULTRASONIC TEST		21. CHEMICAL ANALYSIS		38. SETTING OF LIMIT & TORQUE SWITCHES		55. CHECKS ON LED DRIVER- OC-SC / OVERLOAD				
7. MAGNETIC PARTICLE TEST(MPT)		22. PAINT SHADE & THICKNESS VERIFICATION		39. PHASE SEQUENCE CORRECTION TEST		56. LED DRIVER- THD & PF CHECKS				
8. RADIOGRAPHY TEST		23. FLAMMABILITY TEST		40. DISCHARGE TEST		57. BENDING AND COMPRESSION TEST				
9. DYE PENETRATION TEST		24. OPERATIONAL & FUNCTIONAL TEST		41. VERIFICATION OF MARKING		58. VOLUME RESISTIVITY				
10. MEASUREMENT OF IR VALUE :		25. GLASS CONTENT CHECK		42. CONDUCTOR RESISTANCE		59. HOT SET TEST FOR XLPE				
A) BEFORE HV TEST		26. FLAME PROOF TEST		43. INNER AND OUTER SHEATH AND INSULATION THICKNESS		60. OXYGEN INDEX TEST ON OUTER SHEATH				
B) AFTER HV TEST		27. CLEARANCE & CREEPAGE		44. TENSILE STRENGTH TEST		61. SMOKE DENSITY RATING TEST ON OUTER SHEATH				
11. HV TEST/DIELECTRIC TEST		28. ACCEPTANCE TEST		45. ROUTINE TEST AS PER IS 12615		62. ACID GAS GENERATION TEST ON OUTER SHEATH				
12. ROUTINE TEST AS PER RELEVANT IS STANDARD		29. FR/FRLS TEST AS PER RELEVANT IS		46. WINDING RESISTANCE OF HV AND LV SIDE		63. FLAMMABILITY TEST ON COMPLETED CABLE				
13. TYPE TESTS REPORT AS PER RELEVANT IS/ IEC		30. GALVANISATION MASS, THICKNESS AND UNIFORMITY		47. VOLTAGE RATIO TEST		64. REVIEW OF DOCUMENTS/ TEST REPORTS				
14. BULK DENSITY TEST		31. VECTOR GROUP		48. DEFLECTION LOAD TEST						
15. PH TEST		32. TERMINATION, FERRULING AND EARTHING		49. PROOF LOAD TEST						
SN	EQUIPMENT DESCRIPTION	SAMPLING PLAN	RAW MATERIAL CHECKS/ IN PROCESS TEST TO BE PERFORMED BY			FINAL INSPECTION TO BE PERFORMED BY			DOCUMENTS TO BE SUBMITTED TO BHEL	REMARKS
			M	C	N	M	C	N		
			DOC : D1			DOC: D2				
1	2	3	4	5	6	7	8	9	10	12
II.5	DCDB/ ACDB/MLDB/WRDB/PDB	100%	5, 20	NIL	NIL	1, 2, 10, 11, 17, 22, 24, 32, 34,	64	Nil	D1, D2, D3,D5	
II.6	VFD PANEL	100%	5, 20	NIL	NIL	1, 2, 10, 11, 13, 17, 22, 24, 32, 34,	64	Nil	D1, D2, D3,D5	TYPE TEST REPORT REQUIREMENT AS PER NIT SPECIFICATIONS.
II.7	SEQUENTIAL TIMER PANEL	100%	5, 20	NIL	NIL	1, 2, 10, 11, 17, 22, 24, 32, 34,	64	Nil	D1, D2, D3,D5	
II.8	BELT WATCH PANEL	100%	5, 20	NIL	NIL	1, 2, 10, 11, 17, 22, 24, 32, 34,	64	Nil	D1, D2, D3,D5	
II.9	LOCAL CONTROL PANEL / STARTER PANEL	100%	5, 20	NIL	NIL	1, 2, 10, 11, 17, 22, 24, 32, 34,	64	Nil	D1, D2, D3,D5	
PREPARED BY 			CHECKED BY    			APPROVED BY 				
NOTES:										
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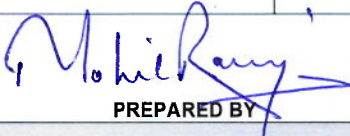
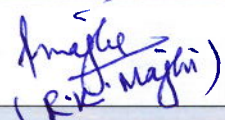
 INDUSTRIAL SYSTEMS GROUP PE- ELECTRICAL	QUALITY ASSURANCE PLAN FOR ELECTRICAL ITEMS				PACKAGE	CHP AND AHP
					QAP NO	ISG/ELEC/SQP/2026 DATE : 12-02-2026
					QAP REV NO, .	0
LIST OF CHECKS/TEST (TABLE-A):						
1. VISUAL & DIMENSIONAL & THICKNESS	16. DIELECTRIC STRENGTH	33. MANUFACTURER STANDARD PROCEDURE	50. PRE- TREATMENT OF SHEET	D1. RAW MATERIAL TC / IN PROCESS INSPECTION REPORT		
2. MAKE, TYPE AND RATING	17. IP TEST/ TYPE TEST REPORT	34. BOM CHECK	51. SURFACE FINISH CHECK	D2. FINAL INSPECTION REPORT		
3. FITMENT & ALIGNMENT	18. CALIBRATION TEST	35. CONTINUITY TEST	52. GUARANTEE/ WARRANTY CERTIFICATE	D3. CERTIFICATE OF CONFORMANCE		
4. PHYSICAL TEST(SAMPLE)	19. ARC RESISTANCE	36. ADHESION TEST	53. RESISTNACE TO MOISTURE TEST/ TTR	D4. FITMENT CUM INTERCHANGEABILITY CERTIFICATE		
5. RAW MATERIAL TC	20. TC FOR BOI	37. PI VALUE	54. PHOTOMETRY TEST/ TTR	D5. APPROVED OR AS BUILT DRG/ DATASHEET/ BOM/SCHEDULE		
6. ULTRASONIC TEST	21. CHEMICAL ANALYSIS	38. SETTING OF LIMIT & TORQUE SWITCHES	55. CHECKS ON LED DRIVER- OC-SC / OVERLOAD			
7. MAGNETIC PARTICLE TEST(MPT)	22. PAINT SHADE & THICKNESS VERIFICATION	39. PHASE SEQUENCE CORRECTION TEST	56. LED DRIVER- THD & PF CHECKS			
8. RADIOGRAPHY TEST	23. FLAMMABILITY TEST	40. DISCHARGE TEST	57. BENDING AND COMPRESSION TEST			
9. DYE PENETRATION TEST	24. OPERATIONAL & FUNCTIONAL TEST	41. VERIFICATION OF MARKING	58. VOLUME RESISTIVITY			
10. MEASUREMENT OF IR VALUE :	25. GLASS CONTENT CHECK	42. CONDUCTOR RESISTNACE	59. HOT SET TEST FOR XLPE			
A) BEFORE HV TEST	26. FLAME PROOF TEST	43. INNER AND OUTER SHEATH AND INSULATION THICKNESS	60. OXYGEN INDEX TEST ON OUTER SHEATH			
B) AFTER HV TEST	27. CLEARANCE & CREEPAGE	44. TENSILE STRENGTH TEST	61. SMOKE DENSITY RATING TEST ON OUTER SHEATH			
11. HV TEST/DIELECTRIC TEST	28. ACCEPTANCE TEST	45. ROUTINE TEST AS PER IS 12615	62. ACID GAS GENERATION TEST ON OUTER SHEATH			
12. ROUTINE TEST AS PER RELEVANT IS STANDARD	29. FR/FRLS TEST AS PER RELEVANT IS	46. WINDING RESISTANCE OF HV AND LV SIDE	63. FLAMMABILITY TEST ON COMPLETED CABLE			
13. TYPE TESTS REPORT AS PER RELEVANT IS/ IEC	30. GALVANISATION MASS, THICKNESS AND UNIFORMITY	47. VOLTAGE RATIO TEST	64. REVIEW OF DOCUMENTS/ TEST REPORTS			
14. BULK DENSITY TEST	31. VECTOR GROUP	48. DEFLECTION LOAD TEST				
15. PH TEST	32. TERMINATION, FERRULING AND EARTHING	49. PROOF LOAD TEST				

SN	EQUIPMENT DESCRIPTION	SAMPLING PLAN	RAW MATERIAL CHECKS/ IN PROCESS TEST TO BE PERFORMED BY			FINAL INSPECTION TO BE PERFORMED BY			DOCUMENTS TO BE SUBMITTED TO BHEL	REMARKS
			M	C	N	M	C	N		
			DOC : D1			DOC: D2				
1	2	3	4	5	6	7	8	9	10	12
II.10	WELDING & LIGHTING RECEPTACLES	100%	5, 20	Nil	Nil	1, 2, 10, 11, 17, 22	64	Nil	D1, D2, D3,D5	
II.11	ARM CHAIR CONTROL DESK	100%	5, 20	NIL	NIL	1, 2, 10, 11, 17, 22, 24, 32, 34,	64	Nil	D1, D2, D3,D5	
III	LIGHTING AND ACCESSORIES									
III.1	LIGHTING FIXTURES	20% of each type / rating	20	Nil	Nil	1, 2, 13, 53, 54, 55, 56	64	Nil	D1, D2, D3,D5	TYPE TEST REPORT REQUIREMENT AS PER NIT SPECIFICATIONS.
III.2	LIGHTING JB	20% of each type	5	Nil	Nil	1, 2, 17, 22	64	Nil	D1, D2, D3,D5	
 PREPARED BY			 CHECKED BY			 APPROVED BY				

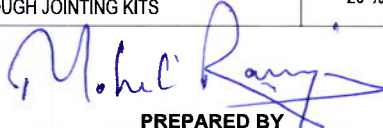
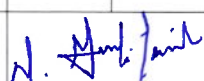
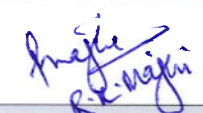
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 ISG Bengaluru	INDUSTRIAL SYSTEMS GROUP PE- ELECTRICAL	QUALITY ASSURANCE PLAN FOR ELECTRICAL ITEMS							PACKAGE	CHP AND AHP
									QAP NO	ISG/ELEC/SQP/2026 DATE : 12-02-2026
									QAP REV NO. ,	0
LIST OF CHECKS/TEST (TABLE-A):										
1. VISUAL & DIMENSIONAL & THICKNESS		16. DIELECTRIC STRENGTH		33. MANUFACTURER STANDARD PROCEDURE		50. PRE- TREATMENT OF SHEET		D1. RAW MATERIAL TC / IN PROCESS INSPECTION REPORT		
2. MAKE, TYPE AND RATING		17. IP TEST/ TYPE TEST REPORT		34. BOM CHECK		51. SURFACE FINISH CHECK		D2. FINAL INSPECTION REPORT		
3. FITMENT & ALIGNMENT		18. CALIBRATION TEST		35. CONTINUITY TEST		52. GUARANTEE/ WARRANTY CERTIFICATE		D3. CERTIFICATE OF CONFORMANCE		
4. PHYSICAL TEST(SAMPLE)		19. ARC RESISTANCE		36. ADHESION TEST		53. RESISTANCE TO MOISTURE TEST/ TTR		D4. FITMENT CUM INTERCHANGEABILITY CERTIFICATE		
5. RAW MATERIAL TC		20. TC FOR BOI		37. PI VALUE		54. PHOTOMETRY TEST/ TTR		D5. APPROVED OR AS BUILT DRG/ DATASHEET/ BOM/SCHEDULE		
6. ULTRASONIC TEST		21. CHEMICAL ANALYSIS		38. SETTING OF LIMIT & TORQUE SWITCHES		55. CHECKS ON LED DRIVER- OC-SC / OVERLOAD				
7. MAGNETIC PARTICLE TEST(MPT)		22. PAINT SHADE & THICKNESS VERIFICATION		39. PHASE SEQUENCE CORRECTION TEST		56. LED DRIVER- THD & PF CHECKS				
8. RADIOGRAPHY TEST		23. FLAMMABILITY TEST		40. DISCHARGE TEST		57. BENDING AND COMPRESSION TEST				
9. DYE PENETRATION TEST		24. OPERATIONAL & FUNCTIONAL TEST		41. VERIFICATION OF MARKING		58. VOLUME RESISTIVITY				
10. MEASUREMENT OF IR VALUE :		25. GLASS CONTENT CHECK		42. CONDUCTOR RESISTANCE		59. HOT SET TEST FOR XLPE				
A) BEFORE HV TEST		26. FLAME PROOF TEST		43. INNER AND OUTER SHEATH AND INSULATION THICKNESS		60. OXYGEN INDEX TEST ON OUTER SHEATH				
B) AFTER HV TEST		27. CLEARANCE & CREEPAGE		44. TENSILE STRENGTH TEST		61. SMOKE DENSITY RATING TEST ON OUTER SHEATH				
11. HV TEST/DIELECTRIC TEST		28. ACCEPTANCE TEST		45. ROUTINE TEST AS PER IS 12615		62. ACID GAS GENERATION TEST ON OUTER SHEATH				
12. ROUTINE TEST AS PER RELEVANT IS STANDARD		29. FR/FRLS TEST AS PER RELEVANT IS		46. WINDING RESISTANCE OF HV AND LV SIDE		63. FLAMMABILITY TEST ON COMPLETED CABLE				
13. TYPE TESTS REPORT AS PER RELEVANT IS/ IEC		30. GALVANISATION MASS, THICKNESS AND UNIFORMITY		47. VOLTAGE RATIO TEST		64. REVIEW OF DOCUMENTS/ TEST REPORTS				
14. BULK DENSITY TEST		31. VECTOR GROUP		48. DEFLECTION LOAD TEST						
15. PH TEST		32. TERMINATION, FERRULING AND EARTHING		49. PROOF LOAD TEST						
SN	EQUIPMENT DESCRIPTION	SAMPLING PLAN	RAW MATERIAL CHECKS/ IN PROCESS TEST TO BE PERFORMED BY			FINAL INSPECTION TO BE PERFORMED BY			DOCUMENTS TO BE SUBMITTED TO BHEL	REMARKS
			M	C	N	M	C	N		
			DOC : D1			DOC: D2				
1	2	3	4	5	6	7	8	9	10	12
III.3	LIGHTING PANELS	100%	5, 20	NIL	NIL	1, 2, 10, 11, 17, 22, 24, 32, 34,	64	Nil	D1, D2, D3,D5	
III.4	LIGHTING WIRES	IS-694	5	Nil	Nil	1, 2, 10, 11, 29, 42, 43, 44,	64	Nil	D1, D2, D3,D5	
III.5	LIGHTING/ WELDING TRANSFORMER	100%	5, 20	Nil	Nil	1, 2, 10, 11, 13, 31, 46, 47	64	Nil	D1, D2, D3,D5	TYPE TEST REPORT REQUIREMENT AS PER NIT SPECIFICATIONS.
III.6	GI LIGHTING CONDUIT	IS-9537-II	5	Nil	Nil	1, 2, 30, 51, 57	64	Nil	D1, D2, D3,D5	
III.7	LIGHTING POLE	100%	5	Nil	Nil	1, 2, 30, 51	64	Nil	D1, D2, D3,D5	
 PREPARED BY			    CHECKED BY			 APPROVED BY				
NOTES:										
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	INDUSTRIAL SYSTEMS GROUP PE- ELECTRICAL	QUALITY ASSURANCE PLAN FOR ELECTRICAL ITEMS						PACKAGE	CHP AND AHP	
								QAP NO	ISG/ELEC/SQP/2026 DATE : 12-02-2026	
								QAP REV NO, .	0	
LIST OF CHECKS/TEST (TABLE-A):										
1. VISUAL & DIMENSIONAL & THICKNESS 2. MAKE, TYPE AND RATING 3. FITMENT & ALIGNMENT 4. PHYSICAL TEST(SAMPLE) 5. RAW MATERIAL TC 6. ULTRASONIC TEST 7. MAGNETIC PARTICLE TEST(MPT) 8. RADIOGRAPHY TEST 9. DYE PENETRATION TEST 10. MEASUREMENT OF IR VALUE : A) BEFORE HV TEST B) AFTER HV TEST 11. HV TEST/DIELECTRIC TEST 12. ROUTINE TEST AS PER RELEVANT IS STANDARD 13. TYPE TESTS REPORT AS PER RELEVANT IS/ IEC 14. BULK DENSITY TEST 15. PH TEST	16. DIELECTRIC STRENGTH 17. IP TEST/ TYPE TEST REPORT 18. CALIBRATION TEST 19. ARC RESISTANCE 20. TC FOR BOI 21. CHEMICAL ANALYSIS 22. PAINT SHADE & THICKNESS VERIFICATION 23. FLAMMABILITY TEST 24. OPERATIONAL & FUNCTIONAL TEST 25. GLASS CONTENT CHECK 26. FLAME PROOF TEST 27. CLEARANCE & CREEPAGE 28. ACCEPTANCE TEST 29. FR/FRLS TEST AS PER RELEVANT IS 30. GALVANISATION MASS, THICKNESS AND UNIFORMITY 31. VECTOR GROUP 32. TERMINATION, FERRULING AND EARTHING	33. MANUFACTURER STANDARD PROCEDURE 34. BOM CHECK 35. CONTINUITY TEST 36. ADHESION TEST 37. PI VALUE 38. SETTING OF LIMIT & TORQUE SWITCHES 39. PHASE SEQUENCE CORRECTION TEST 40. DISCHARGE TEST 41. VERIFICATION OF MARKING 42. CONDUCTOR RESISTNACE 43. INNER AND OUTER SHEATH AND INSULATION THICKNESS 44. TENSILE STRENGTH TEST 45. ROUTINE TEST AS PER IS 12615 46. WINDING RESISTANCE OF HV AND LV SIDE 47. VOLTAGE RATIO TEST 48. DEFLECTION LOAD TEST 49. PROOF LOAD TEST	50. PRE- TREATMENT OF SHEET 51. SURFACE FINISH CHECK 52. GUARANTEE/ WARRANTY CERTIFICATE 53. RESISTNACE TO MOISTURE TEST/ TTR 54. PHOTOMETRY TEST/ TTR 55. CHECKS ON LED DRIVER- OC-SC / OVERLOAD 56. LED DRIVER- THD & PF CHECKS 57. BENDING AND COMPRESSION TEST 58. VOLUME RESISTIVITY 59. HOT SET TEST FOR XLPE 60. OXYGEN INDEX TEST ON OUTER SHEATH 61. SMOKE DENSITY RATING TEST ON OUTER SHEATH 62. ACID GAS GENERATION TEST ON OUTER SHEATH 63. FLAMMABILITY TEST ON COMPLETED CABLE 64. REVIEW OF DOCUMENTS/ TEST REPORTS	D1. RAW MATERIAL TC / IN PROCESS INSPECTION REPORT D2. FINAL INSPECTION REPORT D3. CERTIFICATE OF CONFORMANCE D4. FITMENT CUM INTERCHANGEABILITY CERTIFICATE D5. APPROVED OR AS BUILT DRG/ DATASHEET/ BOM/SCHEDULE						
SN	EQUIPMENT DESCRIPTION	SAMPLING PLAN	RAW MATERIAL CHECKS/ IN PROCESS TEST TO BE PERFORMED BY			FINAL INSPECTION TO BE PERFORMED BY			DOCUMENTS TO BE SUBMITTED TO BHEL	REMARKS
			M	C	N	M	C	N		
			DOC : D1			DOC: D2				
1	2	3	4	5	6	7	8	9	10	12
IV	TRAYS AND CABLES AND ACCESSORIES									
IV.1	GI CABLE TRAY & ACCESSORIES	20%	5	Nil	Nil	1, 2, 30, 36, 48, 50, 51	64	Nil	D1, D2, D3,D5	DEFLECTION LOAD TEST TO BE PERFORMED FOR ALL VARIANTS
IV.2	FRP CABLE TRAY & ACCESSORIES	20%	5	Nil	Nil	1, 2, 19, 23, 25, 48	64	Nil	D1, D2, D3,D5	DEFLECTION LOAD TEST TO BE PERFORMED FOR ALL VARIANTS
IV.3	CABLE TRAY SUPPORT (BOLTED TYPE)	20%	5	Nil	Nil	1, 2, 30, 36, 49, 51	64	Nil	D1, D2, D3,D5	PROOF LOAD TEST TO BE PERFORMED FOR ALL VARIANTS
IV.4	CABLE TRAY SUPPORT (WELDED TYPE)	20%	5	Nil	Nil	1, 2, 30, 51	64	Nil	D1, D2, D3,D5	
IV.5	LT CABLE GLANDS & LUGS	20 % of each type	5	Nil	Nil	1, 2	64	Nil	D1, D2, D3,D5	
IV.6	TREFOIL CLAMPS	20 % of each type	5	Nil	Nil	1, 2	64	Nil	D1, D2, D3,D5	
PREPARED BY 			N. Anil/nil 			CHECKED BY 			APPROVED BY 	
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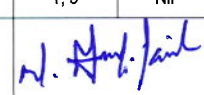
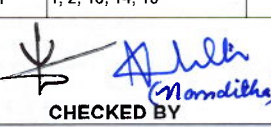
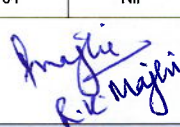
 INDUSTRIAL SYSTEMS GROUP PE- ELECTRICAL	QUALITY ASSURANCE PLAN FOR ELECTRICAL ITEMS				PACKAGE	CHP AND AHP
					QAP NO	ISG/ELEC/SQP/2026 DATE : 12-02-2026
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5. RAW MATERIAL TC	20. TC FOR BOI	37. PI VALUE	54. PHOTOMETRY TEST/ TTR	D5. APPROVED OR AS BUILT DRG/ DATASHEET/ BOM/SCHEDULE		
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10. MEASUREMENT OF IR VALUE :	25. GLASS CONTENT CHECK	42. CONDUCTOR RESISTANCE	59. HOT SET TEST FOR XLPE			
A) BEFORE HV TEST	26. FLAME PROOF TEST	43. INNER AND OUTER SHEATH AND INSULATION THICKNESS	60. OXYGEN INDEX TEST ON OUTER SHEATH			
B) AFTER HV TEST	27. CLEARANCE & CREEPAGE	44. TENSILE STRENGTH TEST	61. SMOKE DENSITY RATING TEST ON OUTER SHEATH			
11. HV TEST/DIELECTRIC TEST	28. ACCEPTANCE TEST	45. ROUTINE TEST AS PER IS 12615	62. ACID GAS GENERATION TEST ON OUTER SHEATH			
12. ROUTINE TEST AS PER RELEVANT IS STANDARD	29. FR/FRLS TEST AS PER RELEVANT IS	46. WINDING RESISTANCE OF HV AND LV SIDE	63. FLAMMABILITY TEST ON COMPLETED CABLE			
13. TYPE TESTS REPORT AS PER RELEVANT IS/ IEC	30. GALVANISATION MASS, THICKNESS AND UNIFORMITY	47. VOLTAGE RATIO TEST	64. REVIEW OF DOCUMENTS/ TEST REPORTS			
14. BULK DENSITY TEST	31. VECTOR GROUP	48. DEFLECTION LOAD TEST				
15. PH TEST	32. TERMINATION, FERRULING AND EARTHING	49. PROOF LOAD TEST				

SN	EQUIPMENT DESCRIPTION	SAMPLING PLAN	RAW MATERIAL CHECKS/ IN PROCESS TEST TO BE PERFORMED BY			FINAL INSPECTION TO BE PERFORMED BY			DOCUMENTS TO BE SUBMITTED TO BHEL	REMARKS
			M	C	N	M	C	N		
			DOC : D1			DOC: D2				
1	2	3	4	5	6	7	8	9	10	12
IV.7	E CHAIN WITH CABLES	100%	5, 20	Nil	Nil	1, 2, 10, 11, 35, 42	64	Nil	D1, D2, D3,D5	
IV.8	LT POWER CABLE	Each size and type of cable as per sampling plan of IS 1554 (Part-I)/ 7098 (Part-I)	5	Nil	Nil	1, 2, 10, 11, 13, 29, 35, 41, 42, 43, 44, 59, 60, 61, 62, 63	64	Nil	D1, D2, D3,D5	TYPE TEST REPORT REQUIREMENT AS PER NIT SPECIFICATIONS.
IV.9	CONTROL CABLE	Each size and type of cable as per sampling plan of IS 1554 (Part-I)	5	Nil	Nil	1, 2, 10, 11, 13, 29, 35, 41, 42, 43, 44, 59, 60, 61, 62, 63	64	Nil	D1, D2, D3,D5	TYPE TEST REPORT REQUIREMENT AS PER NIT SPECIFICATIONS.
IV.10	HT TERMINATION KITS / STRAIGHT THROUGH JOINTING KITS	20 % of each type	5	Nil	Nil	1, 2, 13, 16, 44, 58	64	Nil	D1, D2, D3,D5	
 PREPARED BY			 CHECKED BY			 APPROVED BY				

NOTES:

- ABBREVIATIONS USED: M: MANUFACTURER ; C: PACKAGE VENDOR ; N: BHEL
- This Standard QAP is applicable for items which are listed as CAT-III under inspection categorisation by End Customer for specific project.
- BHEL reserves the right to conduct repeat test if required.
- All Instrument to be used for Testing / Inspection shall have valid ' calibration certificates' to be verified by agencies, Manufacturer & Contractor.
- Galvanization to be carried out at End Customer approved Galvanisers only.
- Fitment cum Interchangeability report (D4) to be submitted for above items if appearing in Mandatory Spares List.

 BHEL	INDUSTRIAL SYSTEMS GROUP PE- ELECTRICAL	QUALITY ASSURANCE PLAN FOR ELECTRICAL ITEMS							PACKAGE	CHP AND AHP
									QAP NO	ISG/ELEC/SQP/2026 DATE : 12-02-2026
									QAP REV NO. .	0
LIST OF CHECKS/TEST (TABLE-A):										
1. VISUAL & DIMENSIONAL & THICKNESS	16. DIELECTRIC STRENGTH	33. MANUFACTURER STANDARD PROCEDURE	50. PRE- TREATMENT OF SHEET	D1. RAW MATERIAL TC / IN PROCESS INSPECTION REPORT						
2. MAKE, TYPE AND RATING	17. IP TEST/ TYPE TEST REPORT	34. BOM CHECK	51. SURFACE FINISH CHECK	D2. FINAL INSPECTION REPORT						
3. FITMENT & ALIGNMENT	18. CALIBRATION TEST	35. CONTINUITY TEST	52. GUARANTEE/ WARRANTY CERTIFICATE	D3. CERTIFICATE OF CONFORMANCE						
4. PHYSICAL TEST(SAMPLE)	19. ARC RESISTANCE	36. ADHESION TEST	53. RESISTANCE TO MOISTURE TEST/ TTR	D4. FITMENT CUM INTERCHANGEABILITY CERTIFICATE						
5. RAW MATERIAL TC	20. TC FOR BOI	37. PI VALUE	54. PHOTOMETRY TEST/ TTR	D5. APPROVED OR AS BUILT DRG/ DATASHEET/ BOM/SCHEDULE						
6. ULTRASONIC TEST	21. CHEMICAL ANALYSIS	38. SETTING OF LIMIT & TORQUE SWITCHES	55. CHECKS ON LED DRIVER- OC-SC / OVERLOAD							
7. MAGNETIC PARTICLE TEST(MPT)	22. PAINT SHADE & THICKNESS VERIFICATION	39. PHASE SEQUENCE CORRECTION TEST	56. LED DRIVER- THD & PF CHECKS							
8. RADIOGRAPHY TEST	23. FLAMMABILITY TEST	40. DISCHARGE TEST	57. BENDING AND COMPRESSION TEST							
9. DYE PENETRATION TEST	24. OPERATIONAL & FUNCTIONAL TEST	41. VERIFICATION OF MARKING	58. VOLUME RESISTIVITY							
10. MEASUREMENT OF IR VALUE :	25. GLASS CONTENT CHECK	42. CONDUCTOR RESISTANCE	59. HOT SET TEST FOR XLPE							
A) BEFORE HV TEST	26. FLAME PROOF TEST	43. INNER AND OUTER SHEATH AND INSULATION THICKNESS	60. OXYGEN INDEX TEST ON OUTER SHEATH							
B) AFTER HV TEST	27. CLEARANCE & CREEPAGE	44. TENSILE STRENGTH TEST	61. SMOKE DENSITY RATING TEST ON OUTER SHEATH							
11. HV TEST/DIELECTRIC TEST	28. ACCEPTANCE TEST	45. ROUTINE TEST AS PER IS 12615	62. ACID GAS GENERATION TEST ON OUTER SHEATH							
12. ROUTINE TEST AS PER RELEVANT IS STANDARD	29. FR/FRLS TEST AS PER RELEVANT IS	46. WINDING RESISTANCE OF HV AND LV SIDE	63. FLAMMABILITY TEST ON COMPLETED CABLE							
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14. BULK DENSITY TEST	31. VECTOR GROUP	48. DEFLECTION LOAD TEST								
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SN	EQUIPMENT DESCRIPTION	SAMPLING PLAN	RAW MATERIAL CHECKS/ IN PROCESS TEST TO BE PERFORMED BY			FINAL INSPECTION TO BE PERFORMED BY			DOCUMENTS TO BE SUBMITTED TO BHEL	REMARKS
			M	C	N	M	C	N		
			DOC : D1			DOC: D2				
1	2	3	4	5	6	7	8	9	10	12
V	OTHER ELECTRICAL ITEMS / ACCESSORIES									
V.1	FIRE EXTINGUISHER	100%	33	Nil	Nil	1, 2, 52	64	Nil	D1, D2, D3,D5	
V.2	CEILING FANS	100%	NA	Nil	Nil	1, 2, 52	64	Nil	D1, D2, D3,D5	
V.3	PIANO SWITCHES	100%	5, 20	Nil	Nil	1, 2, 24	64	Nil	D1, D2, D3,D5	
V.4	ELECTRO HYDRO THRUSTER BRAKES/ RAIL CLAMPS	100%	5, 20	Nil	Nil	1, 2, 24	64	Nil	D1, D2, D3,D5	
V.5	HOOTER/ SIREN	100%	5, 20	Nil	Nil	1, 2, 10, 11, 24	64	Nil	D1, D2, D3,D5	
V.6	LT MOTORS	100%	5, 20	Nil	Nil	13, 45	64	Nil	D1, D2, D3,D5	TYPE TEST REPORT REQUIREMENT AS PER NIT SPECIFICATIONS.
V.7	ELECTRICAL ACTUATOR	100%	5, 20	Nil	Nil	1, 2, 10, 11, 17, 22, 24, 38, 39	64	Nil	D1, D2, D3,D5	
V.8	BATTERY	100%	21	Nil	Nil	1, 2, 40, 41	64	Nil	D1, D2, D3,D5	
V.9	FIRE SEALING SYSTEM	1 per batch	1, 5	Nil	Nil	1, 2, 13, 14, 15	64	Nil	D1, D2, D3,D5	
 PREPARED BY			 CHECKED BY			  			 APPROVED BY	

NOTES:

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Annexure-3G:**Design Guidelines for DCS Interfacing with various soft communication for CHP/AHP System****1. Profibus-DP Design Guidelines**

Sl. No.	Guidelines
1	Total Profibus-DP cable length (end-to-end for a single loop) shall not exceed 800 meters
2	Maximum 18 nodes shall be connected in one Profibus-DP segment
3	Profibus-DP communication speed in BHEL DCS is set as 187.5 kbps

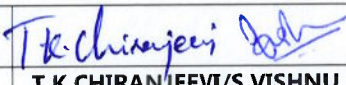
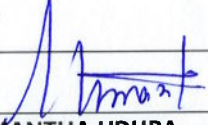
2. Profibus-PA Design Guidelines

Sl. No.	Guidelines
1	Maximum Profibus-PA cable length (Trunk & Spur) shall be limited to maximum 1200 meters
2	Maximum 10 nodes shall be connected in one Profibus-PA segment
3	Profibus PA speed in BHEL DCS is set as 31.25 kbps.

Note: Since Foundation Field Bus is not compatible with DCS, Profibus-DP/PA protocol-based Instruments/Actuators shall be selected.

3. Profibus looping / C&I cable allocation as per FG grouping

- Based on Functional grouping, IMCC feeders/Profibus DP devices (MOV's / Actuators)/ Profibus PA devices(transmitters) are to be looped. Devices belonging to two different Function groups shall not be looped together.
- IMCC GA with feeder allocation shall be decided considering the Functional Grouping of DCS to avoid any inter panel cabling issues. The number of Y links required for all the modules including spare feeder shall be arrived accordingly.
- Number of runs of cable and JB's (Profibus DP/PA cable, Instrumentation cable, segments JB's and Instrumentation JB) shall be finalised considering point a & b.

SIGN				REV:00
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	PREPARED BY	CHECKED BY	APPROVED BY	05-03-2026

Annexure-3G:**Design Guidelines for DCS Interfacing with various soft communication for CHP/AHP System****4. DCS - FG (Function Group) finalization Guidelines**

Sl. No.	Guidelines
1	Total number of addresses available in a DCS Function group is limited to 160. In each address you can assign a Single IMCC feeder or MOV or PA transmitter
2	For speed Calculation, data to be considered is as below a. Each transmitter / IMCC/MOV – AI/AO signal – 16 bits of data b. Each IMCC / MOV - DI/DO signal – 1 bit each
3	The number of Hardwired signals in each FG is limited to 8 racks x 13 modules (DI module- 8channel, DO/AI/AO modules – 4 channels) All spare cores shall be terminated at both DCS and JB ends. Sufficient spare terminals shall be considered in JB.
4	Above configuration detailed in Sl No 1,2 and 3 are accommodated in approx. 4X800(L)X800(W) DCS panels (CVP, CRC, CRD) excluding relay panel (CTE). 1X800(L)X800(W) relay panel (CTE) can accommodate 120 relays.

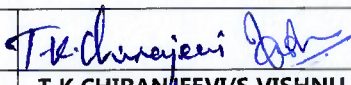
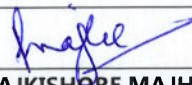
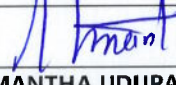
5. PLC – Data Speed Calculation:

For vendor supplied PLC systems, Vendor shall provide speed calculation for profibus DP/ IMCC / Profibus PA instruments soft signal data exchange between PLC & devices as per tender specifications, along with the PLC configuration diagram, considering points 1,2,3,4 listed for DCS FG grouping.

6. Numerical Relay (NR) Network Connectivity

- Separate NR network shall be considered for LT & HT switchgears. Along with Numerical relays, Multifunction relays shall also be looped by vendor.
- Accordingly, Vendor shall Loop all LT switchgears & bring to two switches(L3) in Main Control room in TG building.
- Accordingly, Vendor shall Loop all HT switchgears & bring to two switches(L3) in Main Control room in TG building.
- For AWRS (Wherever applicable), separate wireless / ofc network shall be considered for NR Connectivity up to Main Control room in TG building.

Note: This document is issued as a general guideline to vendors without prejudice to their contractual obligations and liabilities and shall not relieve the vendor from complying with the contractual requirements of the specific tender

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NAME:	T K CHIRANJEEVI/S VISHNU	RAJKISHORE MAJHI	HEMANTHA UDUPA	Date
	PREPARED BY	CHECKED BY	APPROVED BY	05-03-2026