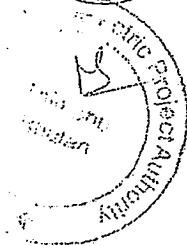


**MODEL QUALITY ASSURANCE PLAN
(QAP) FOR ELECTRICAL
WORKSHOP**

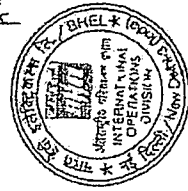
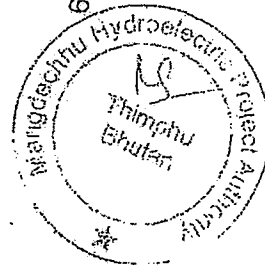


19. MODEL QUALITY ASSURANCE PLAN (QAP) FOR ELECTRICAL WORKSHOP**Special Instructions: -**

1. Contractors/Manufacturers/Sub-suppliers are advised to submit QAP for equipments/ system/ materials after incorporating all tests for bought out items, in process inspection and final inspections as per their latest manufacturing practice and Indian/ International Standards (with latest amendments, if any).
2. Contractors/Manufacturers/Sub-suppliers are required to use properly calibrated instruments / equipments during testing/inspection, for which necessary calibration certificates are required to be provided/presented to the Inspecting Officer.
3. Contractors/Manufacturers/Sub-suppliers have to make on their own all arrangements for testing facilities at their works for testing of equipments/materials.
4. One set of complete test certificates as per the requirement of QAP be made available to the MHPA for acceptance.
5. All the records, as per the requirement of QAP may be made available for review by the Inspecting Officer during inspection.
6. Field tests are to be carried out as per the requirements of the contract/purchase order.



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QUALITY ASSURANCE PLAN (MODEL)

PROJECT : MANGDECHHU HE PROJECT, BHUTAN
NAME OF
EQUIPMENT : ELECTRICAL WORKSHOP EQUIPMENT

CLIENT: MANGDECHHU HYDROELECTRIC PROJECT AUTHORITY,
VENDOR NAME & ADDRESS:
NIT/P.O. REFERENCE :

Page: 19-2

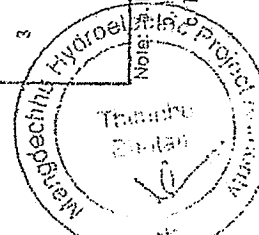
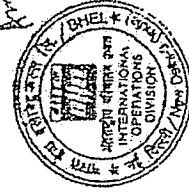
SL. NO.	ITEM/COMPONENTS & CHARACTERISTICS	NATURE OF CHECKS	QUANTUM OF CHECKS	REFERENCE DOCUMENTS	ACCEPTANCE / NORMS	RECORD FORMAT	INSP. AGENCY		REMARKS
							Perform	Witness	
1	General Equipment Universal Vice for Bench, Electronic Tools, Cable-Shoe Pressing Pliers Set, Split Level, Hydraulic Crimping Machine, Vacuum Cleaner & Hot Air Blower Routine Test Checking of Rating, Make & Model	Test Visual	100% -do-	Tech. Spec./Appd. drg./IEC/Code -do-	TC TC	3-2 3-2	-	-	TC TC
2	Accessories L.V. Short-Circuiting device, Voltage Tester, High Freq. Welding Set, Extension Cable, Routine Test Checking of Rating, Make & Model	Test Visual	-do- -do-	-do- -do-	TC TC	3-2 3-2	-	-	TC TC
3	Measuring Devices Megger (A.C. & D.C.), Portable Universal Bridge, Portable Power Measuring								

Note: 1- In Inspection Agency column figure 1, 2, or 3 to be filled. 1- will indicate 'supplier', 2- will indicate 'sub-supplier', 3- will indicate 'sub-supplier'.
2- In 'Remarks' column following abbreviations shall be used - RR-Review of Records, T.C. - Test Certificate Submission & CHP - Customer Hold Point.
3- Test certificates shall be submitted at the time of final inspection.

Signature
MHPA (Client)

Signature
NHP-C (Consultant)

Signature & Seal
Vendor



QUALITY ASSURANCE PLAN (MODEL)

PROJECT : MANGDECHHU HE PROJECT, BHUTAN
NAME OF
EQUIPMENT : ELECTRICAL WORKSHOP EQUIPMENT

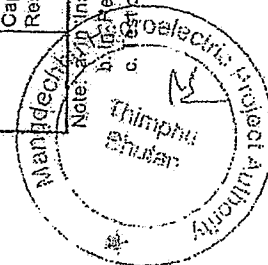
CLIENT: MANGDECHHU HYDROELECTRIC PROJECT AUTHORITY.
VENDOR NAME & ADDRESS:
NIT/P.O. REFERENCE :

Page: 19-3

SL. NO.	ITEM / COMPONENTS & CHARACTERISTICS	NATURE OF CHECKS	QUANTUM OF CHECKS	REFERENCE / ACCEPTANCE DOCUMENTS / NORMS	RECORD FORMAT	INSP. AGENCY		REMARKS
						Perform	Witness / Verify	
	Device, Digital Multimeter (A.C. & D.C.), Analog Multimeter (A.C. & D.C.), High Frequency Generator, Decade Resistor, Connection Leads, Constant Current Supply Unit, Volt Meter, Ammeter, Single Phase Toroidal Transformer, Universal Digital Voltmeter, Universal Instrument, Phase Sequence Indicator, P.F. Measuring Instrument, Digital Frequency Meter, Temp. Measuring Instrument, Sound Level Meter, Digital Mechanical Revolution Counter, Tan Delta Measuring Instrument, Transformer Turn Ratio Meter, Stop-Watch, Hook-on Volt-Ammeter, Vibration Meter, Ohm & Capacitance Meters, Earth Resistance Measuring							



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Note: a) Inspection Agency column figure 1, 2, or 3 to be filled. 1- will indicate 'MHPA', 2- will indicate 'supplier' & 3- will indicate 'sub-supplier'.
b) 'Remarks' column following abbreviations shall be used - RR-Review of Records, T.C. - Test Certificate Submission & CHP - Customer Hold Point.
c) Test certificates shall be submitted at the time of final inspection.

Signature
MHPA (Client)

Signature
NHPC (Consultant)



Signature & Seal
Vendor

QUALITY ASSURANCE PLAN (MODEL)

PROJECT : MANGDECHHU HE PROJECT, BHUTAN
NAME OF
EQUIPMENT : ELECTRICAL WORKSHOP EQUIPMENT

CLIENT: MANGDEGHUL HYDRO-ELECTRIC PROJECT AUTHORITY.
VENDOR NAME & ADDRESS:
NITP.O. REFERENCE :

Page: 19-4

SL. NO.	ITEM / COMPONENTS & CHARACTERISTICS	NATURE OF CHECKS	QUANTUM OF CHECKS	REFERENCE DOCUMENTS / ACCEPTANCE NORMS	RECORD FORMAT	INSP. AGENCY		REMARKS
						Perform	Witness / Verify	
a) b) 4	Devices, Stroboscopes, CRO, Voltage Source with Varying Frequency Output, Micro-Ohm Meter.	Electrical Visual	100% -do-	Tech. Spec./Appd. drg./IEC/Code -do-	TC TC	-	-	TC TC
	Routine Test							
	Checking of Make & Model							
	Testing Devices Primary Current Injection Kit, Relay Testing Unit, H.V. Testing Kit (AC & DC), H.V. Insulation Oil Testing, Device, DC Rectifier, Silicagel & Motor Drying Oven							
a) b) 5	Routine Test	Electrical Visual	100% -do-	-do- -do-	TC TC	3-2 3-2	-	TC TC
	Checking of Rating, Make & Model							
	Instrument Testing & Calibrating Devices Pressure Transmitter, Differential Transmitter, Ammeter, Voltmeter, Ohm Meter (Bridge principle), Temperature Meter,							

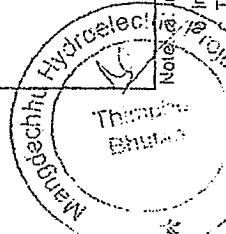
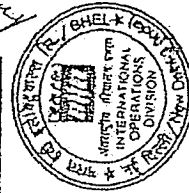
Note: In Inspection Agency column figure 1,2, or 3 to be filled. 1- will indicate 'supplier' & 3- will indicate 'sub-supplier'.

In 'Remarks' column following abbreviations shall be used - RR-Review of Records, T.C. - Test Certificate Submission & CHP - Customer Hold Point. Test certificates shall be submitted at the time of final inspection.

Signature
MHPA (Client)

Signature
NHPC (Consultant)

Signature & Seal
Vendor



QUALITY ASSURANCE PLAN (MODEL)

PROJECT : MANGDECHHU HE PROJECT, BHUTAN
NAME OF
EQUIPMENT : ELECTRICAL WORKSHOP EQUIPMENT

CLIENT: MANGDECHHU HYDROELECTRIC PROJECT AUTHORITY.
VENDOR NAME & ADDRESS:
NIT/P.O. REFERENCE :

Page: 19-5

SL. NO.	ITEM /COMPONENTS & CHARACTERISTICS	NATURE OF CHECKS	QUANTUM OF CHECKS	REFERENCE / DOCUMENTS	ACCEPTANCE NORMS	RECORD FORMAT	INSP. AGENCY		REMARKS
							Perform	Witness	
a) b)	Hygrometer, Drilling-machine Rheostats. Routine Test Checking of Rating, Make & Model	Electrical Visual	100% -do-	Tech.Spec./Appd.drg./IEC:Code -do-		TC TC	3-2 3-2	- -	1 1 TC TC
6 a) b)	Silica Gel Drying Oven Routine Test Checking of Rating, Make & Model.	Electrical Visual	-do- -do-	-do- -do-		TC TC	3-2 3-2	- -	1 1 TC TC
7 a)	Workbenches, Lockers & Instrument Check of BOM	Visual	100%	-do-		TC	3-2	-	1 TC

Note: a. In 'Inspection Agency' column figure 1,2, or 3 to be filled. 1- will indicate 'MHPA', 2- will indicate 'supplier' & 3- will indicate 'sub-supplier'.
b. In 'Remarks' column following abbreviations shall be used - RR-Review of Records, T.C. - Test Certificate Submission & CHP - Customer Hold Point.
c. Test certificates shall be submitted at the time of final inspection.

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Signature
NHPC (Consultant)

Signature & Seal
Vendor

