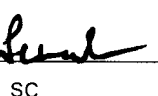


Annexure-VII

रिले तथा कन्ट्रोल पैनल/डैस्कों
के लिए
निरीक्षण व परीक्षण योजना

INSPECTION AND TEST PLAN
FOR
RELAY & CONTROL PANEL/DESKS

3	21.11.2013	Revised and Reissued	 MJ	RS	 SCG	 SC
2	15.07.2011	Revised and Re-issued	GS	SA	AKC	DM
1	28.09.2007	Revised and Re-issued	AKG	PPM	MVKK	VC
0	25.07.2002	Issued for implementation	RG	AKC	AKB	GRR
Rev. No.	Date	Purpose	Prepared by	Checked by	Standards Committee Convenor	Standards Bureau Chairman
						Approved by

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Abbreviations

AS	:	Alloy Steel	MPT/MT	:	Magnetic Particle Testing
BASEEFA	:	British Approval Service for Electrical Equipment in Flammable Atmospheres	MRT	:	Mechanical Run Test
BIS	:	Bureau of Indian Standard	MTC	:	Material Test Certificate
CCE or CCOE	:	Chief Controller of Explosives	MOC	:	Material of Construction
CEIL	:	Certification Engineers International Limited	NPSH	:	Net Positive Suction Head
CIMFR	:	Central Institute of Mining & Fuel Research	NDT	:	Non Destructive Testing
CE	:	Carbon Equivalent	NEMA	:	National Electrical Manufacturers Association
DFT	:	Dry Film Thickness	PO	:	Purchase Order
DT	:	Destructive Testing	PESO	:	Petroleum Explosive Safety Organization
DPT	:	Dye Penetrate Testing	PQR	:	Procedure Qualification Record
ERTL	:	Electronics Regional Test Laboratory	PR	:	Purchase Requisition
FCRI	:	Fluid Control Research Institute	PMI	:	Positive Material Identification
FM	:	Factory Mutual	PVC	:	Poly Vinyl Chloride
FLP	:	Flame Proof	QC	:	Quality Control
HIC	:	Hydrogen Induced Cracking	RT	:	Radiography Testing
ITP	:	Inspection and Test Plan	TC	:	Test Certificate
IP	:	Ingress Protection	TPI or TPIA	:	Third Party Inspection Agency
IC	:	Inspection Certification	UT	:	Ultrasonic Testing
IGC	:	Inter Granular Corrosion	UL	:	Under writer Laboratories
IEC	:	International Electro technical Commission	VDR	:	Vendor Data Requirement
JEC	:	Japanese Electro technical Committee	WPS	:	Welding Procedure Specification
LPT	:	Liquid Penetrate Testing	WPQ	:	Welders Performance Qualification
			XLPE	:	Cross Linked Poly Ethylene

Inspection Standards Committee

Convenor : Mr. S C Gupta

Members:

Mr. R.K. Singh	Mr. Rajeev Kumar	Mr. Himangshu Pal
Mr. Neeraj Mathur	Mr. T Kamalakannan	Mr. Deepak Gupta (Project)
Mr. Mayank Jain		

INSPECTION AND TEST PLAN FOR RELAY & CONTROL PANEL/DESKS

1.0 SCOPE

This Inspection and Test Plan covers the minimum testing requirements of Relay & Control Panel/Desks.

2.0 REFERENCE DOCUMENTS

PO/PR & Standards referred there in /Job specifications / Approved documents

3.0 INSPECTION AND TEST REQUIREMENTS

SL NO.	STAGE/ ACTIVITY	CHARACTERISTICS	QUANTUM OF CHECK	RECORD	SCOPE OF INSPECTION		
					SUB SUPPLIER	SUPPLIER	EIL/TPIA
1.0	Procedures	---	---	---	---	---	---
2.0	Material Inspection						
2.1	Incoming material like panel fabrication, PCBs, Lamps, Push Buttons, switches, Protective relays, Lockout relays, Indicating Meters, Terminals, cable wires(FR), PVC ducts, etc	Visual, Physical, Finish, Dimensions, Make of components, Manufacturer's test certificates for model, accuracy etc. as per relevant specifications	100%	Test records	H	H	R
3.0	Inprocess Inspection						

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SL NO.	STAGE/ ACTIVITY	CHARACTERISTICS	QUANTUM OF CHECK	RECORD	SCOPE OF INSPECTION		
					SUB SUPPLIER	SUPPLIER	EIL/TPIA
3.1	Wiring Checks	- Size, termination, ferruling, continuity - Check for correctness of wiring	100%	Test Records	---	H	R
4.0	Final Inspection						
4.1	Final Inspection	Acceptance Tests:- - Visual, Accessibility of operating devices - Dimensional - Name Plate & Inscription details - Paint shade and surface finish - Mimic diagram and color codes - Cable entry, Cable lugs, Cable Glands size, Lifting Hooks - Bill of material, Make of Components - Operation check of Alarm sequence/ Functional as per data sheet requirement / drawings - Operation/Calibration check of all relays, Meters and other components by current injection - Operation check for auxiliary contacts & auxiliary circuit - Earthing - Accuracy of digital clock - High voltage test - IR test before and after High voltage	100%	Inspection test record	-	H	H

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SL NO.	STAGE/ ACTIVITY	CHARACTERISTICS	QUANTUM OF CHECK	RECORD	SCOPE OF INSPECTION		
					SUB SUPPLIER	SUPPLIER	EIL/TPIA
5.0	Painting						
5.1	Painting and Packing	- Visual - Suitable protection to prevent entry of foreign material. - Proper packing to prevent any damage during transportation and storage.	100%	Packing list / Supplier's Records	-	H	-
6.0	Documentation and IC						
6.1	Documentation and IC	- Review of Internal Test Reports, Test reports for degree of protection - IC issuance	100%	Supplier's Test Records / Inspection Certificate	-	-	H
6.2	Final Document submission	Compilation of Inspection reports ,drawings, etc as per VDR / PR	100%	Final data folder /Completeness certificate	-	H	H

Legends: H- Hold (Do not proceed without approval, R-Review, RW-Random witness (As specified or 10 % - Samples must include min 1 No of each type), W- Witness (Give due notice, work may proceed after scheduled date).

NOTES :-

1. This document describes the generic test requirements. Any additional test or inspection scope if specified in contract documents shall also be applicable. (Unless otherwise agreed upon).
2. Acceptance Norms for all the activities shall be as per PO/PR/ Standards referred there in/ Job specifications /Approved documents