

Inspection and Test Plan for Switchgear

No.	Inspection and Test Plan	Reference Document	Acceptance Criteria	Verifying Document	Activity By			Remark
					Manuf.	TPI	Client	
1	Pre-Inspection Meeting	Spec.	Spec.	MOM	H	H	H	-
Before Manufacturing								
2	DWG, Design, Calculation Document	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	DWG, Calculation book	H	R	A	-
3	Switchgear Resistance Test Procedure	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	Procedure	H	R	A	
4	Switchgear Withstand Voltage Test (Dielectric Test) Procedure	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	Procedure	H	R	A	
5	Switchgear Sequence Test Procedure	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	Procedure	H	R	A	
6	Switchgear Characteristics Test of Protection Relays Procedure	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	Procedure	H	R	A	
7	Switchgear Mechanical Operation Test Procedure	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	IEC, NEC, NEMA, FDF, ISO ANSI, CI, IPCEA	Procedure	H	R	A	
Materials								

8	Raw Material Inspection	ASTM	ASTM	Original Material Certificates	H	H	-	-
9	Review of Certificates	ASTM	ASTM	Certificates	H	H	-	-
10	Material Identification	ASTM	ASTM	Report	H	H	-	
During Fabrication								
11	Fabrication Inspection	DWG/Spec	DWG/Spec	Report	H	SW	-	
12	Outline Dimensions, Interface Dimensions, Busbar Dimensions and Clearances and other Specified Dimensions Inspections	DWG/Spec	DWG/Spec	DWG/Spec	H	W	-	
13	Tightness / Torque Inspection of Terminals	DWG/Spec	DWG/Spec	Report	H	SW	-	
14	Control for Degree of Protection	DWG/Spec	DWG/Spec	Report	H	H	-	

15	Inspection to Confirm that Instruments, Compartments, Control Switches, protective relays, fuses and etc. are Correctly Rated and are Correctly Located, with Specified Labeling.	DWG/Spec	DWG/Spec	DWG/Spec	H	H	-	
16	Inspection to Confirm Earthing Arrangements for Continuity in Circuit	DWG/Spec	DWG/Spec	Report	H	SW	-	
17	Checking to Confirm Wiring Correct Grade and Size, Wiring Tightness in Terminations.	DWG/Spec	DWG/Spec	Report	H	SW	-	
18	Checking for Incoming and Outgoing Cable Boxes and Glands.	DWG/Spec	DWG/Spec	Report	H	SW	-	
19	Checking all Circuit Breakers for Fit up and Fitting Ease of Operation	DWG/Spec	DWG/Spec	Report	H	SW	-	
20	Range and Setting of Meters and Relays, Correct Fitting of Doors, Circuit Labels and Dimensions to	DWG/Spec	DWG/Spec	Report	H	SW	-	
21	Checking Complete Boards for Finish, Lines Out of Units	DWG/Spec	DWG/Spec	Report	H	SW	-	

22	Checking all Shutters and Interlock Operation	DWG/Spec	DWG/Spec	Report	H	SW	-	
23	Welding Inspection on Welded Component	WPS	WPS	Report	H	SW	-	
24	Switchgear Resistance Test	Procedure	Procedure	Report	H	H	-	
25	Switchgear Withstand Voltage Test (Dielectric Test)	Procedure	Procedure	Report	H	H	-	
26	Switchgear Sequence Test	Procedure	Procedure	Report	H	H	-	
27	Switchgear Characteristics Test of Protection Relays	Procedure	Procedure	Report	H	H	-	
28	Switchgear Mechanical Operation Test	Procedure	Procedure	Report	H	H	-	
Final Inspection								
29	Final Visual & Dimensional Check	DWG	DWG	Report	H	H	-	-
30	Check of Final Book	Spec.	Spec.	DWG/ P.O	H	R	-	
Documentation								
31	Inspection Reports	Spec./DWG	Spec./DWG	Report	H	R	-	-
32	NCR	Spec./DWG	Spec./DWG	Report	H	R	-	-
33	Review Final Data Report	Spec./DWG	Spec./DWG	Report	H	R	-	-
Pre-Shipment Inspection								

www.inspection-for-industry.com

34	Preservation and Packing	Spec.	Spec.	Report	H	H	-	-
35	Marking	Spec.	Spec.	Report	H	H	-	-
36	Loading Inspection	Spec.	Spec.	Report	H	H	-	-
37	Shipping Document Control	Procedure	Spec.	Packing List	H	H	-	-

Abbreviations:

H: Hold Point = Hold on the production till TPI Inspector performs inspection and supervise the required test

W: Witness Point = Manufacture shall notify client and TPI Inspector but there is no hold on the production;
Client can waive this inspection based on his discretion and informs TPI Inspector accordingly.

R: Document Review = Review means Review document, which includes of material test certificates, WPS, PQR, NDT Procedures and etc.

A: Approval

SW: Spot Witness = for items with spot witness manufacture shall notify TPI inspector as fulfilling the monitoring;
For example one random visit for whole UT tests or one or two visits for whole surface preparation works for painting.

MOM: Minute of Meeting

P.O: Purchase Order

for more information review following articles:

<http://www.inspection-for-industry.com/third-party-inspection-for-switchgear.html>

<http://www.inspection-for-industry.com/inspection-and-test-plan-for-switchgear.html>