

BHEL RANIPET	CHECK LIST FOR DISCONNECTING SWITCH MEANT FOR ESP APPLICATION	
REF.NO.	REVISION NO.	EFFECTIVE DATE
CKL:E:803	05	15 04 2007
RECORD OF REVISION		
REV.NO	Effective Date	Remarks
00	15 08 96	Original Issue
01	10 12 96	Impulse test level has been changed from 170 KV (P) to 150 KV based on the discussion with Engineering.
02	29 05 97	Clause No. 2 (b) on paint shade revised to refer TEP.
03	20 08 97	Typographical error in III (e) corrected. PO/Enquiry referring CKL:E:803 Rev.02 can also refer CKL:E:803 Rev.03 as there is no change in the content read with record of revision.
04	18 06 98	Revised based on second PCM dt 14 06 1998.
05	15 04 2007	Revised to include more clarity on Lightning Impulse and Dry PF type tests and Included that Dry PF and Impulse values shall be as per BHEL drg (or) BHEL approved sub vendor drgs
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The following tests/checks are to be done:-

I) Routine Test (Sample size: IS 2500/Part I, IL-I, AQL 4%)

- a) Visual Inspection for make, sl.No. Damage if any on the insulator.
- b) Dimensional checks as per drawing on randomly selected sample.

Following dimensions Should be measured and recorded in dimensional report (DR).

- Flange dimensions
 - PCD
 - No. of holes
 - Box overall size
 - Hole size
- c) Operational checks – Operate the disconnecting switch 10 times observe the operation of knife edge – satisfactory / not satisfactory.
 - d) Ensure perfect matching of knife with knife contact as per drawing (i.e. stopper plate to be welded in position only after ensuring perfect matching).
 - e) Review of TC for following:-
 - Insulator as per drawing – Make of insulator: BHEL /WS insulator / Jayashree
 - Raw material as per TEP
 - Routine and acceptance test
 - f) IR and HV Test

II) Special Requirements: with reference to surface treatment and painting .

- a) Enclosures are to be pre-treated as per IS 6005 and painted as per Purchase specification (Phosphated to Min class B as per IS 6005).
- b) Paint shade and thickness as per Drgs/TEP/PO conditions shall be ensured.
- c) Adhesion test for painting: As per IS 101

This shall be checked by cross cut tape to ensure that the paint shall not be peeled off at the squares and sides formed by scratches on representative sample.

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III) Type tests (Review of Type test certificates for test conducted on identical design)

The following valid type tests reports as per BHEL/Ranipet approved drgs (not older than five years from BHEL/Ranipet Purchase Order date) shall be submitted by Disconnecting Switch manufacture during final inspection to BHEL/Ranipet or BHEL Ranipet authorized Inspection Agencies. If Disconnecting Switch Manufactures not in a position to submit the valid type tests , then they have to organize for all the type tests without any cost implication to BHEL/Ranipet within reasonable time without affecting the project schedules. Acceptance Levels / values shall be as per BHEL/Ranipet drgs/ Sub vendor BHEL approved drgs .

- a) Torsion and tensile test for bonding between metal inserts and insulators.
- b) Mechanical Endurance test
- c) Degree of protection test (IP 55)
- d) One Minute Dry Power Frequency Test for one minute.
- e) Lightning Impulse Test (with 1.2/50Micro second wave) for 15 shots with maximum of 2 flashover allowed) on negative polarity. This is to be done on both open and closed conditions. (Generally as per IS 9921/IS 2071 shall be done)

No of shots: : 15 Shots in Negative Polarity generally as per clause no: 3.1.6 of IS 9921 Part-4 .

ACCEPTANCE CRITERIA

Disconnecting Switch has passed the test successfully if the number of the disruptive discharges shall not exceed two for each test condition.

IV. Acceptance Test

1. Routine HV Test at 2.5 KV for 1 minute
2. IR Test after HV test: IR > 10 Mega Ohm when checked with 500 V meggar.