



**PUNJAB STATE TRANSMISSION CORPORATION LIMITED**  
(Punjab Govt. Undertaking, Regd. Office – PSEB Head office, The Mall, Patiala)

**OFFICE OF THE CHIEF ENGINEER/P&M, Ludhiana**  
(FAX – 0161-2457704, E mail – ce-pm@pstcl.org)

Office Order No: - 23 /

Dated: 22/01/2016.

**Subject:- To assign duties to Engineers incharge of sub-stations (SSE's) in PSTCL keeping in view the latest equipment/switchgear installed at sub-stations.**

It has been noticed that most of the new officers posted as Sr Sub-station Engineers at 400/220/ 132 KV sub-stations are not aware of their responsibilities and duties. Since a lot has changed in terms of manpower, equipment etc in sub-stations of PSTCL, so it has become important to circulate a set of instructions to sub-station incharge engineers for meticulous compliance as given below-

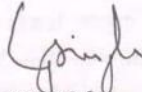
1. Single line diagram of sub-station should be displayed prominently in a sub-station and all SSE's should maintain a diary of all the equipment/ switchgear installed in a sub-station specifying its make, YOM, DOC etc
2. Possible sources of back-feeding in case of emergency should be displayed prominently in a sub-station.
3. SSE's should have knowledge of basic ferruling used in wiring such as for DC, AC, PT's, CT's etc
4. SSE's should personally monitor the maintenance work in a S/S and enter the work done in the EMR's. All EMR's should be properly maintained.
5. Circuit Breakers- If there is any leakage of air or SF<sub>6</sub> gas in a CB prompt action is required on part of SSE's. Trippings should be checked as per instructions already issued by C.E/P&M.
6. Isolators- Where ever they are working electrically, their working should be checked during periodic maintenance shutdown. After operations their AC supply should be switched off to avoid any mal-operation
7. NIFPES System- SSE's should keep a check on pressure of Nitrogen cylinder periodically. They should co-ordinate with protection staff to check the circuitry healthiness.

8. Double Bus arrangement- SSE's should keep a check on healthiness of PT selection relays periodically. If required contacts of isolators should be cleaned periodically. No wedging should be done at any cost.
9. Upkeep of batteries- SSE's should keep a check of healthiness of battery bank & battery charger. Battery should be charged at boost mode periodically. Capacity test by loading upto 25% by heaters after switching the battery charger off should be done at least once in six months under the guidance of Sr XEN/ ASE/ P&M.
10. If DC load is more than 10 to 13 Amps, matter should be brought in the notice of Sr XEN/ ASE/ P&M and a second set of Battery & battery charger should be installed as per instructions already conveyed by the office of CE/P&M.
11. SSE should have full DC circuit distribution layout of sub-station.
12. Number of circuits being fed from switches of DCDB should be as per instructions already issued by CE/P&M.
13. Bus- Bar Differential scheme- Should ensure that it is in circuit and in case of any alarm the matter should be brought in the notice of controlling officer & protection staff.
14. SSE should take a round of control room frequently and ensure that Green Healthy LED is glowing on all numerical relays and no VT fail block or any other un-wanted alarm LED is glowing on any relay.
15. SSE should have a brief and working knowledge of protection relays and equipment/ switchgear installed at their sub-stations.
16. Surge Arrestors- SSE should monitor the healthiness from surge counters & co-ordinate with ODTL for its LCM testing.
17. Oil Sampling- SSE's should ensure that oil sampling is done as per IS Standards and guidelines issued by CE/P&M in his presence.
18. Oil sample testing in case of "New/ First" charging and "IN" service power transformers should be done as per guidelines mentioned in oil testing reports.
19. SSE's should ensure proper follow up of results and take remedial action as per recommendation in testing reports.
20. SSE's should ensure that all periodical testing's by protection teams are done as per schedule and in case of any delay bring that in the notice of his ASE/Sr XEN.
21. Maintenance of sub-station equipments must be done as per maintenance schedule.

22. It should also be ensured that sub-station yard is clean and clear of any debris/ dismantled material. Non-gravel area should not have any wild growth.
23. Front & entrance lobby of a sub-station should present a good aesthetic look with a notice board and plantation etc.
24. Structures should be painted with aluminum/grey paint as per requirement, keeping in view their condition. While carrying out such a activity, purchase/ work order regulations of PSTCL should be adhered. Prevalent lowest rates of other divisions & circles should also be taken into consideration for a similar activity/work.
25. In case of power transformers, replacement of SILICA GEL and condition of AIR CELL are VERY IMPORTANT for the life of a transformer.
26. NCT's (Neutral CT's)- SSE's should ensure that connections from neutral of power transformer to NCT and then to earth should be cleaned & tightened to avoid mal-operation of REF relays periodically.
27. There is no place for temporary/adhoc-ism in relay circuitry. Proper ferrules for identification should be used in wiring.
28. No joints should be there in wiring. Proper termination with thimbles should be ensured. No twisting is allowed in control circuitry.
29. Copper leads should only be used in CT/PT/DC control circuitry. Single lead should never be used but only stranded type leads should be used in CT/PT/DC control circuitry.
30. CT secondary circuit should be properly closed/ shorted & Proper CT ratios should be displayed on panel. Core used shall be underlined, such as 400-200/0.577-1-1-1 etc
31. SSE's should randomly check the D.C healthy, T.C healthy etc and record the same on log sheet/EMR etc
32. A.C & D.C supply should be through different cables. DC emergency light of control room should be from separate cable & point of D.C distribution board. For new works, workmanship of grid construction organization should also be monitored.
33. Cables should be entered in marshalling boxes, panels, equipment through glands of proper sizes. This is also applicable on grid construction teams.
34. Control cables & power cables should be properly laid in cable trenches. There should be no jumbling of power cables in the yard of a sub-station. For new

- works it should be ensured that before closing the work grid construction teams or distribution offices follow the instructions.
35. Alumina should be replaced in thermo-siphons of power transformers after a fixed time as recommended by manufacturers.
  36. SSE's should check the working of temperature gauges & auto-working of fans of power transformers and ensure their proper functioning.
  37. Oil in pots housing gauge elements on top of power transformer should be checked periodically.
  38. After HSU operations of power transformers, matter should be taken with owner of feeders/ lines i.e concerned officer of distribution organization.
  39. Proper fault analysis for each tripping should be done. Any mal-operation should be discussed with protection officers and controlling officer.
  40. Drawings/ literature of C&R panels, CB's, other equipment installed at a S/S should be available in the room of SSE.
  41. SSE should ensure that operator on duty daily checks the healthiness of time synchronizing equipment. Necessary action must be taken as per requirement to ensure its proper functioning.


This carries the approval of Worthy Director/Technical.

  
C.E/P&M  
PSTCL, Ludhiana

Endst No- 987/1237

Copy of the above is forwarded in original to following for information & necessary action-

1. All SE's/Dy CE's/P&M
2. Dy CE/Grid Construction, PSTCL, Ludhiana
3. All ASE's/Sr XEN's/P&M/Protection, under P&M zone
4. All SSE's/AE's/AEE's/P&M/Protection, under P&M zone

  
ASE/W&A,  
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