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CIN - U40109PB2010SGCO33814

Memo No. 338 P-1/275

Dated: 26-7-21

To

CAO/F&A,
PSTCL, Patiala

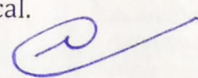
**Subject: PSERC Directives in the Tariff Order for FY-2021-22:-
Quarter ending June- 2021**

**Reference:- Your Office memo no: 1419/FA/Comml.-23/Vol.11 Dated:-
02.07.2021.**

Enclosed please find herewith compliance status of PSERC directives 5.3 (Loading Status of PSTCL Transmission Lines and sub-stations) and 5.5(Reactive Compensation) as Annexure-A, B respectively. Annexure A&B shall be uploaded on PSTCL website www.pstcl.org.

This issues with the approval of Director/Technical.

DA: As Above.


Sr.XEN/Planning-1,
PSTCL, Patiala.

CC:

339/40

1. Chief Engineer/TS, PSTCL, Patiala.
2. Sr.XEN(Tech. to Director/Tech., PSTCL, Patiala

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Annexure-A

PSERC Directives Sr. No. 5.3 (Loading Status of PSTCL Transmission lines and sub-stations).

Sr. No.	P&M Circle	Name of Transmission Line	% loading as compared with the standard design Parameters of conductors i.e. 45° C ambient temperature and 75°C conductor temperature	Remarks of P&M Organization	Proposal/Remedial Action by Planning
A) Loading status of PSTCL Transmission Lines					
1.	Patiala	220kV Faggan majra-Bahadurgarh	651 A at 31°C Ambient temperature (116.25%)	Load due to Paddy Season/ Peak load	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 700.87 A at 31°C). Also the loading is expected to reduce with the advent of Rajpura-Bassi Pathana link. No remedial action required
		220 KV Patran- Banvala ckt1	600 A at 31°C Ambient temperature (107.14%)	Load due to Paddy Season/ Peak load	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 700.87 A at 31°C) No remedial action required
		220 KV Patran- Banvala ckt2	600 A at 31°C Ambient temperature (107.14%)	Load due to Paddy Season/ Peak load	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 700.87 A at 31°C) No remedial action required
		220 KV Sunam-Bhalwan-ckt 1	563 A at 36°C Ambient temperature (100.54%)	Load due to Paddy Season/ Peak load	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 668.72 A at 36°C) No remedial action required
		220 KV Sunam-Bhalwan-ckt 2	560A at 36°C Ambient temperature (100%)	Load due to Paddy Season/ Peak load	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 668.72 A at 36°C) No remedial action required
2.	Jalandhar	NIL			
3.	Ludhiana	220kV Gobindgarh 01 - Rajpura Ckt 01	570 A at 32°C Ambient temperature (101.79%)	Regular Loading pattern	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 694.44 A at 32°C). Also, replacement of existing conductor of 220kV Gobindgarh- 400kV Rajpura with HTLS of suitable capacity already planned in MYT 2020-23.

		220kV Gobindgarh 01 - Rajpura Ckt 02	650 A at 32°C Ambient temperature (116.07%)	Regular Loading pattern	-do-
		220 kV Sahnewal-Lalton	681 A at 37°C Ambient temperature (107.92%)	Load due to paddy/Peak load	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 749.85 A at 37°C) No remedial action required
		220 kV Sahnewal- PGCIL	688 A at 41°C Ambient temperature (109.03%)	Load due to paddy/Peak load	High loading is not within permissible thermal limit corresponding to ambient temperature (i.e. 668.86A at 41°C). Further LILO of 220 kV Sahnewal- Kohara transmission line at 400 kV Dhanansu has been planned which will give relief to 220 kV Sahnewal-PGCIL transmission line.
		220 kV Ajitwal-PGCIL Moga	622 A at 39°C Ambient temperature (111.07%)	Load due to paddy. Further as telephonically confirmed from sub-station 220 kV Ajitwal, 220 kV Ajitwal-Himatpura line was out of circuit as instructed by PC	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 649.43 A at 39°C) No remedial action required
4.	Bathinda	220 kv Muktsar – Katorewala Ckt. (From 400 KV S/S Shri Muktsar Sahib)	583.35 A at 35°C Ambient temperature (104.17%)	High load occurs during peak evening period when solar power is off.	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 675.15 A at 35°C). Work of 220 KV katorewala (Malout)-Abhor transmission line is near completion. Commissioning of this transmission line shall provide relief to 220 kv Muktsar–Katorewala Ckt.
		132 KV Balluana-Bathinda	444 A at 24°C Ambient temperature (116.54%)	Temporary Due to permit on 132 kv Malout-Muktsar Line	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 479.08 A at 24°C) No remedial action required
5.	Amritsar	220 kV Balachak-Khassa ckt –I & II	575 A at 34°C Ambient temperature (102%)	As telephonically confirmed by SSE of 220 kv Khassa Due to damage of breaker &CT of	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 681.58 A at 34°C) No remedial action required

				transformer at 220 kV S/S Verpal temporary shutdown occurred at 220 kV S/S Verpal and the load of 220 Wadala Granthian was being fed from 220 kV S/S Khassa	
		132 kV Sarna-Gurdaspur	330 A at 38°C Ambient temperature (103.13%)	Line is overloaded and is being operated by opening of 132 KV Dhariwal-Batala D/C Link.	High loading is within permissible thermal limit corresponding to ambient temperature (i.e.374.356 A at 38°C). Upgradation of 132 kV Gurdaspur to 220 kV is covered in MYT 2020-23
B) Loading status of Power Transformers of PSTCL Sub-stations					
Sr. No.	P&M Circle	Name of Substation/Transformer Identification	% loading as compared with the standard design Parameters of conductors	Remarks of P&M Organization	Proposal/Remedial Action by Planning
1.	Patiala	NIL			
2.	Jalandhar	NIL			
3.	Ludhiana	NIL			
4.	Bathinda	220 KV S/S MOGA / T-2(132/11 KV, 20 MVA)	101.70%	Existing (overloading station)	Addl. 100 MVA 220/66 KV T/F is covered in CWIP in MYT 2020-23 at 220 KV S/S Moga (Singhawala). PSPCL has been requested to plan new 66 kV sub-station at 220 kV S/S MOGA (Singhawala). Some of load of 11 kV feeders shall be transferred to proposed 66 kV sub-station. Thereby providing relief to 132/11 KV Transformers.
		220 KV S/S Ferozepur/ T-4 (132/66 KV, 40/50 MVA)	100.60%	66KV System is overloaded	Up gradation of 66 KV Jhoke-Harihar to 220 kV has been planned vide amendment no. 11 dated 08.07.21 which shall provide relief to 220 kV Ferozepur.
5.	Amritsar	NIL			

Regarding the response to Progress of creation of 220 kV grid sub-station at Jhoke-Harihar to tackle the overloading of 220 kV sub-station Ferozepur, it is submitted that after carrying out requisite load flow studies. Up gradation of 66 KV Jhoke-Harihar to 220 kV has been planned vide amendment no. 11 dated 08.07.21 with 1 no. 100 MVA , 220/66 KV T/F &

LILO of 220 kV Sadiq-Talwandi Bhai line at proposed 220 kV Jhoke Harihar shall be covered in MYT 2020-23 whereas 1 no. additional 100 MVA , 220/66 KV T/F planned at proposed 220 kV Jhoke Harihar shall be got included in MYT 2023-26.

**PSERC Directive Sr. No. 5.5 (Reactive Compensation)
System Study for Capacitor requirement in NR for the year 2019-20.**

It is submitted that the CPRI has submitted their report dated 16.10.2020 regarding Capacitor Requirement for Northern Region. In its report the CPRI has recommended the installation of 136.58 MVAR capacitor banks at 66 KV & 220 KV Bus-Bar of the three nos. substations namely 220 KV S/Stn. Kohara , 220 KV S/Stn Ghulal and 220 KV S/Stn Gaunsgarh.

In view of the above , recently consolidated comments of Planning & SLDC organization have been submitted to NRLDC by Addl. SE/SLDC (op.), PSTCL vide his email dated 05.05.2021. Further NRLDC has given its feedback on CPRI and suggested as follow:-

“All India base case especially Northern region may first tuned to real time snapshot of Jul-18 scenario. Further, as this study is focus on reactive power/voltage improvement, all reactive assets should be chosen carefully as it used to do in real time operation i.e. reference points of SVC, STATCOMs, tap of transformer etc. Moreover, the MVAR supports of generating units are dynamics and should not be exploited for steady state. The MVAR support limit for all generating units (State as well as regional entity should be checked). Load MVAR of all the states of NR need review and should be corrected as per State feedback.”

However, reply of CPRI is awaited in this regard.

Further, PSTCL has started the installation/planning of available 132 kV Capacitor Banks at various S/Stations of PSTCL.