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Memo No. 562 /P-1/275

Dated: 15-12-2021

To

CAO/F&A,
PSTCL, Patiala

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

Reference:- Your Office memo no: 214/FA/Comml.-23/Vol.11 Dated:- 27.10.2021

Enclosed please find herewith compliance status of PSERC directives Sr. Nos. 5.3(Loadng 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.

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15/12/21
Sr.XEN/Planning-I,
PSTCL, Patiala.

CC:

- 563/64*
15-12-2021
1. Chief Engineer/TS, PSTCL, Patiala.
 2. Sr.XEN(Tech. to Director/Tech., PSTCL, Patiala

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	648 A at 31°C Ambient temperature (115.71%)	Regular loading during Paddy/ 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 augmentation of 220kV Faggan majra-Bahadurgarh with HTLS of suitable rating is being planned .
		220KV Nalagarh-Mohali1-Ckt-I	578 A at 28°C Ambient temperature (103.21%)	Regular loading during Paddy / Peak load	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 720.16A at 31°C). No remedial action required
		220KV Nalagarh-Mohali1-Ckt-II	578 A at 28°C Ambient temperature (103.21%)	Regular loading during Paddy / Peak load	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 720.16A at 31°C). No remedial action required
		220 KV Patran- Banvala ckt1	608 A at 37°C Ambient temperature (108.57%)	Regular loading during Paddy / Peak load	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 662.29 A at 31°C) No remedial action required
		220 KV Patran- Banvala ckt2	608 A at 37°C Ambient temperature (108.57%)	Regular loading during Paddy / Peak load	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 662.29 A at 31°C) No remedial action required

		220 KV Sunam-Bhalwan-ckt 1	609 A at 34°C Ambient temperature (108.75%)	Regular loading during Paddy / Peak load	High loading is within permissible thermal limit corresponding to ambient temperature. 681.58 A at 34°C) Loading is expected to reduce with LILO of both circuits of Sunam-Mansa at 400kV Patran which is under execution.
		220 KV Sunam-Bhalwan-ckt 2	609A at 34°C Ambient temperature (108.75%)	Regular loading during Paddy / Peak load	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 681.58 A at 36°C) Loading is expected to reduce with LILO of both circuits of Sunam-Mansa at 400kV Patran which is under execution.
		220 KV Sunam-Mansa ckt	582A at 33°C Ambient temperature(103.93%)	Regular loading during Paddy / Peak load	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 688.01 A at 33°C). Mansa will be fed from 400kV Behman Jasssa Singh(BJS) after installation of 400/220 KV T/Fs at 400kV Behman Jasssa Singh(BJS) which will provide relief to this circuit.
2.	Jalandhar	220kV PGCIL - Kartarpur Ckt 01	603A at 32°C Ambient temperature(107.68%)	Regular loading during Paddy / Peak load	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 694.44 A at 32°C) . Augmentation of existing conductor of both circuits with HTLS conductor of 1200 A capacity already included in MYT 2020-23
		220kV PGCIL - Kartarpur Ckt 02	592A at 32°C Ambient temperature(105.71%)	Regular loading during Paddy / Peak load	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 694.44 A at 32°C) Augmentation of existing conductor of both circuits with HTLS conductor of 1200 A capacity already included in MYT 2020-23
		220kV Kotla Janga - Kartarpur Ckt 01	580A at 35°C Ambient temperature(103.57%)	Regular loading during Paddy	High loading is within permissible thermal limit corresponding to ambient

				/ Peak load	temperature (i.e. 675.15 A at 35°C. Loading is expected to improve with augmentation of both circuits of 220kV PGCIL – Kartarpur with HTLS which is under progress.
		220kV Kotla Janga - Kartarpur Ckt 02	580A at 35°C Ambient temperature(103.57%)	Regular loading during Paddy / Peak load	High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 675.15 A at 35°C) .Loading is expected to improve with augmentation of both circuits of 220kV PGCIL – Kartarpur with HTLS which is under progress.
		132 KV Mahilpur-Banga	420A at 43°C Ambient temperature(110.23%)	Regular loading during Paddy / Peak load	High loading is not within permissible thermal limit corresponding to ambient temperature (i.e. =373.32 A at 43°C. Banga is connected to 220 KV & 132 KV Both network. So No remedial action required
		132 KV Hamirpur-Chohal	425A at 40°C Ambient temperature(111.54%)	Regular loading during Paddy / Peak load	High loading is not within permissible thermal limit corresponding to ambient temperature (i.e. 413 A at 40°C). Augmentation of conductor of this line is under consideration.
		132 KV Bhogpur-Hoshiarpur	404 A at 43°C Ambient temperature(106.03%)	Regular loading during Paddy / Peak load	High loading is not within permissible thermal limit corresponding to ambient temperature (i.e. 373.32 A at 43°C) No remedial action required
3.	Ludhiana	220kV Gobindgarh 01 - Rajpura Ckt 01	620A at 32°C Ambient temperature (110.71%)	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 is under progress.
		220kV Gobindgarh 01 - Rajpura Ckt 02	620A at 32°C Ambient temperature (110.71%)	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 is under progress..
220 kV Kohara - Sahnewal	655 A at 34°C Ambient temperature (103.80%)	Regular Loading pattern		High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 771.68 A at 34°C) Further LILO of 220 kV Sahnewal- Kohara transmission line at 400 kV Dhanansu has been planned which will give relief to 220 kV Kohara - Sahnewal transmission line.
220 kV Sahnewal- PGCIL	710A at 33°C Ambient temperature (112.52%)	Regular Loading pattern		High loading is not within permissible thermal limit corresponding to ambient temperature (i.e. 778.96 at 33°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. Further 2 nd direct link between 400kV PGCIL- Sahnewal has been completed which will provide relief to this Ckt.
220 kV Lalton - Hambran	678 A at 36°C Ambient temperature (120.86%)	Temporary. Due to shutdown at 220v Fzr. road-lalton ckt at 220kv Lalton Substation		High loading is due to temporary reason. MD in 2020-21 was 443 A(77.3%) which is within the permissible limits.
220 kV Ajitwal-PGCIL Moga	613 A at 40°C Ambient temperature (109.27%)	Existing.		High loading is within permissible thermal limit corresponding to ambient temperature (i.e. 643 A at 40°C). Further Mansa will be fed from 400kV BJS further providing relief this Ckt. Advent of 220kV Jhordan (new) will provide relief to 220kV Jagraon S/S which will relief 2 ckts. Of Jagraon-Ajitwal eventually relieving Ajitwal-PGCIL

4.	Bathinda	220 kv Muktsar – Katorewala Ckt. (From 400 KV S/S Shri Mukatsar Sahib)	599.97 A at 28°C Ambient temperature (107.14%)	Existing. High load occurs during peak evening period when solar power is off.	Moga line. High loading is within permissible thermal limit corresponding to ambient temperature (i.e.720.16A at 28°C). Work of 220 KV katorewala (Malout)-Aobhar transmission line is near completion. Commissioning of this transmission line shall provide relief to 220 kv Muktsar–Katorewala Ckt.
		132 KV Feroze Shah - Kotkaror	327 A at 34°C Ambient temperature (102.19%)	Temporary. Due to 132 KV Sukhbir Agro (Bio-mass plant)was out of circuit as confirmed telephonically from 220 KV substation Kotkaror.	High loading is within permissible thermal limit corresponding to ambient temperature (i.e.405.362 A at 24°C) No remedial action required
5.	Amritsar	132 kv Sarna-Gurdaspur	340 A at 32°C Ambient temperature (106.25%)	Line is overloaded and is being operated by opening of 132 KV Dhariwal-Batala D/C Link Still loading is 106.25%.	High loading is within permissible thermal limit corresponding to ambient temperature (i.e.418.36 A at 32°C). Upgradation of 132 kv Gurdaspur to 220 kv is under progress.

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	220 KV Mahilpur/ T-1(132/11 KV, 20MVA)	102.95%	Temporary. Due to Paddy	No remedial action required
3.	Ludhiana	NIL			

4.	Bathinda	220 KV S/S Ferozepur/ T-3 (132/66 KV, 40/50 MVA)	102.42%	66KV System is overloaded	Upgradation 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.
		220 KV S/S Ferozepur/ T-4 (132/66 KV,50 MVA)	101.51%		
5.	Amritsar	220 KV Wadala Granthian T-1 220/132 KV, 100 MVA	100%	Temporary. Due to fault in MPH-4 and load flow from wadala granthian	Addl. 220/132 KV, 100 MVA is being planned vide 2nd interim report of Committee constituted by Director Technical vide Letter no. SPL-1 dated:- 21- 07-2021.
		220 KV Wadala GranthianT-4 220/132 KV, 100 MVA	100%		

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

It is submitted that as per the agenda of 49th meeting of NRPC & 47th meeting of TCC, CPRI submitted the system study report, which was circulated among all SLDCs and STUs vide email dated 02.11.2020. Based on the preliminary comments, CPRI submitted the revised report on 24.02.2021. The report brought out the additional requirement of 137MVar for Punjab.

The matter was reviewed in meeting held under the chairman MS,NRPC on 06.08.2021. After weighing the merits of the original & revised reports, the following was decided:

- The first report submitted by CPRI in Sep 2020 shall be considered as reference report.
- Comments from all utilities and NRLDC on September 2020 report must be submitted to NRPC sect. latest by 24.08.2021.

CPRI September 2020 report was emailed to all sub-group members on 10.08.2021 requesting to submit comments/observations thereon latest by 24.08.2021. Till 27.08.2021, comments of Punjab, Himachal Pradesh and Rajasthan have been received by NRPC Sectt.

The matter has been deliberated in the 49th NRPC & 47th meeting of TCC held on 23,24 & 27 sept. 2021 . However, the minutes of the meeting are awaited.

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