BEFORE THE PUNJAB STATE ELECTRICITY REGULATORY COMMISSION

CHANDIGARH

PETITION NO. 6 of 2018

IN THE MATTER OF:

PETITION UNDER SECTION 23 OF THE ELECTRICITY ACT, 2003 FOR REGULATORY MEASURES TO BE TAKEN FOR THE TARIFF YEAR 2018-19.

AND

IN THE MATTER OF:

Punjab State Power Corporation Limited
The Mall,
Patiala - 147001

....Petitioner

PETITION UNDER SECTION 23 OF THE ELECTRICITY ACT, 2003 SEEKING REGULATORY GUIDANCE FOR MEASURES TO BE TAKEN IN CASE OF EXIGENCIES LEADING TO POWER CUTS FOR THE TARIFF YEAR 2018-19

MOST RESPECTFULLY SHOWETH:

1. The present petition is being filed by the Petitioner, Punjab State Power Corporation Limited (hereinafter called **PSPCL**) under Section 23 of the Electricity Act, 2003 seeking regulatory guidance and concurrence of the Hon'ble Commission for the measures to be taken by PSPCL for load regulation and imposing power cuts in case of exigencies and system requirements.

2. PSPCL is hereby providing the basis, assumptions and projections of the elements constituting the determination of demand/Supply gap, the prevalent regulations being undertaken and their constraints, the extent of power regulatory measures required to be imposed on various categories of consumers in an equitable manner with an objective of ensuring quality power in the most economical and reliable manner and in compliant to National/State grid code during the year 2018-19.

3. The endeavor of PSPCL as a distribution licensee is to ensure uninterrupted power supply to all its consumers and regulate the supply only in case of unavoidable exigencies. The details of the anticipated demand and availability of electricity as also provided in the petition for approval of the Annual Revenue Requirements (ARR) for the year 2018-19 is provided in the attachment marked as **Annexure A**. PSPCL is presently expected to be surplus in power availability for the year during 2018-19. The details of the applicable category of feeders - PR Circular 5/2003 dated 05.06.2003 is attached hereto and marked as **Annexure B**.

4. It is stated that from the details in Annexure-A, it is evident that there would be a surplus availability of electricity to PSPCL during the year 2018-19. In the circumstances, it is expected that the requirement to regulate supply to consumers and imposing power cuts would be minimal and only to take care of unexpected events and circumstances.

5. It is pertinent to mention that post grid collapse of 30 & 31.7.2012, the frequency profile of the power system has significantly improved and now the frequency is running in a close range of 50 Hz ± 0.05 Hz and in the scenario / real time operation of power system, the availability of power has to be matched with the running load at all the times otherwise the surplus power is bound to be dumped to the grid at a very nominal cost, which with the running frequency profile may not be economical to the utility. Moreover, the security of the grid may also get affected.

   It is however stated that even in the surplus scenario, the eventualities as mentioned below cannot be ruled out in the power system which may require regulation of load and supply:

   - Till now, all the three no. IPPs viz NPL, Rajpura (2x700=1400 MW), TSPL, Talwandi Sabo (3x660 = 1980 MW) & GVK, Goindwal Thermal plant (2x270=540 MW) have been synchronized with the grid. The forced outage of the generating units especially these larger capacity IPPs for longer duration may necessitate the imposition of regulatory measures on the consumers.

- Any downward revision in the Central Sector schedule due to longer duration on account of forced outage of Central Sector Generating Units, in which the State of Punjab has a major stake.
- A maximum unrestricted demand of 2672 LUs on 10.7.2017 and a peak demand of 11705 MW have been recorded during the year 2017-18 on 11.7.2017. During the year 2018-19, a projected unrestricted demand of 12500 MW is being envisaged. With a restricted internal generation due to any unforeseen reasons and any limitation of the transmission/ sub transmission network, may also necessitate imposition of Regulatory Measures.
- At present, the existing ATC/ TTC of Punjab has been fixed by NRLDC as 6100 / 6700 MW respectively **(Annexure-C)**. With any reduction of internal generation due to forced outage may require the emergent imposition of Power Regulatory Measures during the year 2018-19 to keep the system running within the limitations of grid code.
- Any restrictions due to overloading of inter regional lines may also necessitate load shedding within the state.
- The operating frequency band has since been narrowed down with the implementation of deviation settlement mechanism w.e.f. 17.2.2014 and operating frequency band has been narrowed down to the range between 49.90 to 50.05 Hz. The violation beyond the specified limit attracts severe penalties for over/ under drawl from the system in real time operation within the grid code limitations as such the regulation of load through the implementation of the power regulatory measures may be necessitated on real time basis.
- In addition, the scheduled commissioning of the new generating units i.e. 1 unit (9 MW) of Mukerian Hydel Project Stage-II in the state sector and Bokaro, Meja, Tanda thermal plants , Kishanganga, Parbati-II and KarchamWangtoo Hydro electric plants under the central sector may also get delayed and the energy which is envisaged to remain available

during the year 2018-19 become uncertain, on account of which situations may arise for the imposition of power regulatory measures.

- Any other contingency, where availability of power is not able to meet with the demand may also be required in regulating the load on the system on real time basis.

6. In the scenarios and circumstances as mentioned above, PSPCL may be required to bridge the demand / supply gap within Punjab control area on real time basis by imposing various regulatory measures.

7. Under the Electricity Act, 2003 while the management of load is to be taken care of by the licensees, a provision in Section 23 enables the Hon'ble Commission to decide the principles and basis on which the regulation in power can be done, to the extent possible in case of exigencies and circumstances that may arise. Further, having a guiding principle for imposing regulatory measures in case of exigencies result in greater regulatory certainty.

8. In the circumstances mentioned above, PSPCL proposes the following regulatory measures to be taken in case it becomes imperative to impose power regulatory measures and impose power cuts:

- To regulate the supply by imposing power cut on feeders controlling supply to the 24 hours UPS/Urban-Industrial Cat-1/Main cities / District. Head Quarters.

- To impose weekly off day(s) on LS & MS category of industrial consumers fed from category 2 & 3 industrial feeders.

- To restrict the drawl of the LS & MS category consumers (fed from category 2&3 feeders) to the extent required for keeping the system running within the grid code limitations during peak load hours as well as off-peak hours, who are availing time of the day tariff.

- To restrict the drawl of power by continuous process (category 4) consumers to the extent of their continuous process load allowed to them during peak/ off peak load hours, as per the policy approved by the Hon'ble PSERC.

- To regulate power supply to AP consumers.

- Any other additional regulatory measures to the left out category of consumers in case of exigencies of outage of own / central sector generating units or transmission/ sub transmission network of ISTS/ STU or any of the major grid elements ICTs etc.

9. It is stated that in the year 2018-19, the regulatory measures shall be imposed on the real time basis depending upon the real time gap in the demand and supply of power and other system constraints. The national/ state grid code limitations shall also be kept in view while imposing these regulatory measures.

10. PSPCL shall however make its best endeavor not to impose any regulatory measures and shall on its part:

(a) Impose minimum Scheduled Power Regulatory Measures / Scheduled Power cuts for which the consumers will be informed in advance about the schedule of power cuts and regulatory measures.

(b) Unscheduled load shedding, if any, shall only be imposed during sudden outage of generating units or exigencies in the grid. Duration of such load shedding shall be kept to be as minimum as possible.

11. The Hon'ble Commission had for the year 2017-18 passed orders dated 29.3.17 & 25.5.2017 against Petition No. 01 of 2017 dealing with the regulatory measures to be taken when situation arises. The said order dated 25.5.17 is effective for the period till 31.03.2018.

PRAYER:-

In the facts and circumstances mentioned above, it is respectfully prayed that the Hon'ble Commission may be pleased to:

(a) Admit and take on record the present petition filed by PSPCL on the regulatory measures proposed to be taken for the purpose of maintaining equitable distribution of power supply throughout the State of Punjab and to operate the grid in a most economical and efficient manner in compliance to the IEGC/State Grid Code Provisions.

(b) Provide guidance on the regulatory measures proposed by PSPCL as detailed hereinabove and make such modifications in the proposal of PSPCL as the Hon'ble Commission may deem just.

(c) Pass such other further order(s) as the Hon'ble Commission may deem just in the facts of the present case.

Sd/-
SE/ Power Regulation,
For Chief Engineer/PP&R
PSPCL, Patiala.

ANTICIPATED DEMAND AND AVAILABILITY FOR 2018-19 (Without Surrender) as per the ARR 2018-19

Annexure-A

Sr. No.	Month	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Total
	No. of Days	30	31	30	31	31	30	31	30	31	31	28	31	365
	Figures in Mus	Mus	Mus	Mus	Mus	Mus	Mus	Mus	Mus	Mus	Mus	Mus	Mus	Mus
1	Net Hydro(including RSD and Shanan Share)	197.72	378.89	492.47	517.22	517.80	441.03	326.44	282.35	284.50	253.11	254.04	303.47	4249.05
2	Net Thermal Generation	1200.48	1239.83	1200.48	1237.08	1237.08	1200.48	979.05	1022.97	1179.44	1210.55	1006.50	1237.08	13951.01
3	Total Own Gen Net (1 + 2)	1398.20	1618.72	1692.95	1754.30	1754.88	1641.51	1305.49	1305.32	1463.94	1463.66	1260.54	1540.55	18200.06
4	BBMB (Net)	188.01	312.11	388.08	412.96	450.80	389.47	264.46	210.57	204.90	195.24	189.42	215.87	3421.88
5	NHPC	264.11	358.63	347.55	358.89	363.88	289.86	151.79	109.46	94.37	81.95	91.77	172.20	2684.46
6	Nathpa Jhakri(SJVNL)	35.76	87.58	99.86	107.40	107.40	69.41	47.13	34.96	22.19	19.79	14.92	23.38	669.77
7	Tehri(THDC)	15.71	18.11	12.54	6.89	33.84	18.52	12.55	12.97	22.36	23.43	19.41	18.95	215.28
8	Koteshwar(THDC)	6.11	7.59	6.02	3.06	10.87	5.42	3.65	3.74	6.60	7.25	6.34	6.79	73.45
9	DVC RTPS 1&2	163.68	169.13	163.68	169.13	169.13	163.68	169.13	163.68	169.13	169.13	152.78	169.13	1991.41
10	DVC -Durgapur	100.39	102.27	113.74	117.50	117.50	113.74	117.50	113.74	117.50	108.10	87.23	117.50	1326.72
11	Bokaro TPS -A (DVC)	106.56	110.26	106.56	110.26	110.26	106.56	110.26	106.56	110.26	110.26	99.53	110.26	1297.59
12	NTPC	575.98	678.29	653.03	670.61	646.59	622.81	620.96	594.23	628.89	605.86	556.17	633.91	7487.33
13	NTPC (ER)	118.53	94.39	114.94	99.79	122.48	118.53	122.48	118.53	122.48	122.48	110.63	122.48	1387.73
14	NPC	114.85	118.45	114.85	118.45	118.45	67.54	118.45	114.85	118.45	118.45	109.02	118.45	1350.29
15	Long Term (Traders & IPPs)	2971.79	3509.16	3428.76	3514.47	3456.00	3482.97	3508.07	2877.85	3218.21	3514.56	3164.24	3259.70	39905.77
16	Short Term	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	Banking (Import)	0.00	0.00	0.00	223.20	223.20	216.00	0.00	0.00	0.00	0.00	0.00	0.00	662.4
18	Banking (Export)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	Purchase within punjab (NRSE & PEDA)	234.19	234.19	234.19	234.19	234.19	234.19	234.19	234.19	234.19	234.19	234.19	234.19	2810.24
20	Unsheduled Interchange (UI)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	Gross Power Purchase (Sum - Sr. No. 5 to 20)	4707.66	5488.04	5395.72	5733.84	5713.79	5509.23	5216.16	4484.76	4864.63	5115.45	4646.23	4986.94	61862.45
22	Inter State Transmission Losses	70.75	78.15	78.18	85.99	86.96	79.88	71.29	67.53	69.37	68.13	62.50	71.83	890.57
23	Net Power Purchase (21 - 22)	4636.91	5409.89	5317.54	5647.84	5626.83	5429.35	5144.87	4417.23	4795.26	5047.32	4583.73	4915.11	60971.88
24	Common Pool Share	18.77	31.16	38.75	41.23	45.01	38.88	26.40	21.02	20.46	19.49	18.91	21.55	341.64
25	Net Availability for PSPCL in MUs (3+4+23+24)	6241.89	7371.87	7437.31	7856.34	7877.53	7499.22	6741.23	5954.14	6484.55	6725.70	6052.60	6693.08	82935.46
26	Net Availability (in Lus/Day)	2080.63	2378.02	2479.10	2534.30	2541.14	2499.74	2174.59	1984.71	2091.79	2169.58	2161.64	2159.06	2272.20
27	Expected Requirement as per the ARR (in Mus)	3883.39	5214.96	6675.41	7351.40	7065.72	6913.02	4731.30	3207.35	3630.87	3393.57	3358.53	3852.24	59277.76
28	Average Expected Requirement (in Lus/Day)	1294.46	1682.24	2225.14	2371.42	2279.26	2304.34	1526.23	1069.12	1171.25	1094.70	1199.47	1242.66	1624.05
29	Surplus (+) /Deficit (-) (in Mus) (25 - 27)	2358.51	2156.91	761.90	504.94	811.81	586.20	2009.93	2746.80	2853.69	3332.12	2694.07	2840.84	23657.70
30	Surplus (+) /Deficit (-) in Lus/Day	786.17	695.78	253.97	162.88	261.87	195.40	648.36	915.60	920.54	1074.88	962.17	916.40	648.16
31	Average Surplus (+) / Deficit (-) in MW	3275.70	2899.08	1058.20	678.68	1091.14	814.16	2701.52	3815.00	3835.60	4478.66	4009.03	3818.33	2700.65
32	Generation (MW) from Stage-1 of RTP (2x 210=440 MW)	440.00	440.00	440.00	440.00	440.00	440.00	440.00	440.00	440.00	440.00	440.00	440.00	440.00
33	Generation (MW) from Bathinda Thermal (4x110=440 MW) already assumed to be Zero	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
34	Net Surplus (+) / Deficit (-) in MW after deducting generation from Bathinda & Ropar Stage-1 (31-32-33)	2835.70	2459.08	618.20	238.68	651.14	374.16	2261.52	3375.00	3395.60	4038.66	3569.03	3378.33	2260.65

Annexure-B

PUNJAB STATE ELECTRICITY BOARD
PR Circular No. 05/2003
Dated: 5.6.2003

Memo No. 3096/3317/LD/PC-260 Dated 5.6.2003

Subject: Proper implementation of Power Cuts to be imposed by Power Control Centre.

In supersession of PR Circular No. 3/99 dated 12.05.99 and PR Circular No. 21/2002 dated 25.11.2002, the revised instructions on the cited subject depicting the scope of each category shall now be as under:-

Category-I
URBAN/INDUSTRIAL FEEDERS

"The feeders which are feeding mixed load of domestic, commercial, industrial consumers including Arc/Induction Furnaces and Essential Industries fed through mixed feeders irrespective of the fact whether or not availing peak load exemption on payment of PLEC".

Category-II

(a) 11/33/66/132/220KV Separate/Independent Feeders of consumers which have not been declared as continuous process by CE/SO&C and declared continuous process/Essential Industries which are not availing Peak Load Exemption on payment of PLEC.

(b) All Mixed Industrial Feeders having sanctioned Industrial load of 90% or more of the total connected load on the feeder with no Agriculture Connection (AP).

Further, it was desired vide PR Circular No. 21/2002 dated 25.11.2002 to review the status of all the Category-II Industrial Feeders/Predominantly Industrial Feeders and the Feeders not fulfilling the above said scope stand ceased to hold the status the category-II Industrial Feeders w.e.f. Ist, February, 2003. Some of the operation circles have got the eligible feeders declared as Category-II feeders from this office and the remaining concerned Dy.CEs/SEs/Op. are requested to get the needful done by furnishing the following information:

Sr. Name of the Sub-Stn.	Name of the feeder along Industrial with voltage class	Name of S/Divn./ Division	Total Connected Load on the	Connected feeder (KW) load (KW)
1.	2.	3.	4.	5.
Percentage of Industrial Load of the total connected load	Connected GSC Load (KW)	Percentage of GSC Load of total connected load	Agricultural Load (AP Category)if any (KW)	Load of any other type (KW)
6.	7.	8.	9.	10.

No. & date by which the feeder is declared as Category-II by this office shall be displayed on the concerned out going breaker at the Grid Sub-Station. Since release of new G.S.C. connections from declared Category-II feeder shall change the percentage of Industrial load so the status of these feeders may be reviewed regularly (at least ending March and September every year) and appropriate action (for changing to Category-I) be taken accordingly under intimation to this office. The responsibility for running ineligible feeders (as per the said scope) under Category-II feeders during power cut shall rest with the field organization.

Category-III: ARC/INDUCTION FURNACE CONSUFMERS FED THROUGH SEPARATE / INDEPENDENT FEEDERS.
"Separate/Independent feeders feeding only Arc/Induction furnace consumers"

CATEGORY-IV FEEDERS FEEDING ONLY CONTINUOUS PROCESS / ESSENTIAL INDUSTRIES

"Separate/Independent feeders of those Continuous Process/Essential Industries which have been declared as Continuous Process/Essential Industry and are availing exemption during Peak Load Hours Restrictions with the permission of this office and are paying Peak Load Exemption Charges (PLEC).

CATEGORY-V 24 HOURS URBAN PATTERN SUPPLY 3-PHASE 3-WIRE FEEDERS

This category shall cover all the 11KV 3-Phase 3-Wire feeders erected to give 24 Hours supply on Urban pattern to villages.

CATEGORY-VI 24 HOURS URBAN PATTERN SUPPLY 3-PHASE 4-WIRE FEEDERS

This category shall cover all the 11KV 3-Phase 4-Wire feeders erected to give 24 Hours supply on Urban pattern to villages.

NOTE: It is to be noted that such consumers who have obtained Peak Load Exemption under P.R.Circular No. 2/98 & are being fed through Separate/Independent feeders shall be subjected to Power Cut as per their Category, as & when announced by Power Controller.

Keeping in view the System conditions, the Power Controller, Patiala shall give the message(s) of Power Cut category-wise as & when required.

The above instructions shall come into force with immediate effect.

Sd/
Director/P.R.& C,
for Chief Engineer/SO&C,
PSEB, Patiala.

Annexure-C

PUNJAB STATE TRANSMISSION CORPORATION LTD.
(Regd. Office: PSEB Head Office, The Mall, Patiala)
SLDC Building, 220KV Grid Sub-Station, Ablowal, (Patiala) – 147001.
Tel No. 0175-2366074, Fax No. 0175-2365340 e-mail: se-sldcop@pstcl.org

To

CE /PP&R
PSPCL, Patiala.

Memo No. 395 Dated: 04/07/2017

Sub: **Revision of TTC/ATC of Punjab control area due to revival of Talwandi Sabo and Goindwal TPS**

Ref: **NRLDC Letter No. TS-03 B-564 dated 03.07.2017**

NRLDC vide above referred (copy attached) has revised the ATC/TTC of Punjab Control Area as 6100/6700 MW for July-Sept 2017 due to revival of Talwandi Saboo and Goindwal TPS.

It is submitted, that the above calculation has been carried out by considering full generation at RTP and GHTP thermal plants. Further, NRLDC in its above referred letter has mentioned that the ATC/TTC limit of Punjab Control Area shall vary accordingly to its own generation at 220 KV level.

Accordingly, the minimum generation at different pockets of Punjab in comparison to total state load may be maintained as intimated earlier through various letters from this office. As per system studies, the required minimum generation at RTP and GHTP in comparison to total state load is as follows:-

Sr. No.	Load in Punjab Control Area in (MW)	Min. No. of Generating units required to be operational from RTP	Min. No. of Generating units required to be operational from GHTP
1.	Up to 7500	1	Nil.
2.	7500-8500	2	Nil.
3.	8500-9500	3	1
4.	9500-10,500	4	2
5.	10,500-11000	5	3
6.	More than 11,000	Full generation	Full generation

As such, it is requested that ratio of generating units from RTP & GHTP thermal plants in comparison to load may be maintained for secure operation of Grid.

Sd/-
Chief Engineer/SLDC,
PSTCL, Patiala.

CC: 1. Sr. PS to CMD, PSTCL, Patiala
2. Sr. PS to CMD, PSPCL, Patiala
3. Sr. PS to Principal Secretary/Power, Punjab
4. Dy/Secretary to Director/Technical, PSTCL, Patiala
5. Sr. PS to Director /Distribution, PSPCL, Patiala

पावर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Govt. of India Enterprise)
NORTHERN REGIONAL LOAD DESPATCH CENTRE
18/A, Shaheed Jeet Singh Sansanwal Marg, Katwaria Sarai, New Delhi - 110 016
Tel: 2685 4585, 2685 4015, Tele Fax: 011- 2685 2747 e-mail: nrldc@posoco.in

CIN: U40105DL2009GOI188682.

संदर्भ: उ क्षे भा प्रे के \ पंजाब\टी ऐस-03 बी -564 दिनांक: 03 जुलाई, 2017

सेवा में,
मुख्य अभियंता, एसएलडीसी
पंजाब स्टेट ट्रांसमिशन कार्पोरेशन लिमिटेड
220/66 केवी अबलोवल उपकेंद्र,
पटियाला पंजाब

विषय : **Revision of ATC /TTC limit of Punjab control area for Summer/Monsoon 2016-17 due to revival of Talwandi Saboo Power Plant and Goindwal TPS**

Sir,
This has reference to your letter no. 377 of SLDC Punjab dated 28.06.2017 (copy enclosed as Annex-I) vide which SLDC Punjab has shared revised computation of Total Transfer Capability (TTC)/ Available Transfer Capability (ATC) for import of power by Punjab state control area considering **revival of Talwandi Saboo Power Plant and Goindwal TPS**. The Quantum worked out by Punjab SLDC for the period of July'17-Sept'17 is as given below:

Duration	Total Import Capability(MW)	Reliability Margin (MW)	ATC/ Available Transfer Capability (MW)
July'17-Sept'17	6700	600	6100

220kV network has been reoriented by splitting 220kV buses at no. of locations and some other changes such as new lines commissioned (details in report as Annexure-II) were suggested/ provided by Punjab SLDC, which have been incorporated in NRLDC base case.

Generation at Talwandi Saboo and Goindwal TPS has also been revived in NRLDC basecase.

NRLDC has reviewed the study data/information submitted by Punjab and found it generally in order, with following observations:

Observations:

1. NRLDC has reviewed the study at NR ISTS boundary. 220kV contingencies within Punjab system have not been studied assuming that Punjab SLDC has taken care of these contingencies in the study and would take appropriate actions.
2. N-1 contingency of 500MVA ICT at Amritsar (PG) will critically load other two 315MVA ICTs, N-1 contingency of 500MVA ICT at Ludhiana and N-1 contingency of 315MVA ICT at Makhu critically load other ICTs at Ludhiana and Makhu respectively and thus are limiting conditions for import capability of Punjab.
3. However, underlying network at Amritsar is also critically loaded. 220kV Amritsar-Verpal D/C & 220/132kV Verpal ICTs are critically loaded in basecase itself. Hence, N-1 contingency of these ckts. is critical and underlying system becomes unreliable.
4. The underlying network at 220kV Ludhiana (PG) is overloaded. N-1 contingency of one Ludhiana-Laltonkalan ckt or 220kV Sahnewal-Laltonkalan overloads other two ckts. (Ludhiana-Laltonkalan ckts. have different line loadings in basecase itself due to different line lengths)
5. 220kV Verpal-Patti and Patti-Rashiana have been considered as open i.e. Rashiana is radially fed from Verpal. Under normal demand conditions, these lines may be closed for enhancing reliability of supply (Amritsar ICTs loading to be strictly monitored). When these lines are closed loading of Amritsar ICTs increases considerably.
6. TTC/ATC of Punjab control area shall vary according to its own generation at 220kV level. Other critical observations are provided in the study report (attached as Annexure-II).

Suggestions:

- SLDC Punjab should monitor closely and control loading of likely highly loaded 400/220kV Amritsar, Ludhiana and Makhu ICTs and 220kV lines such as:
  - 220kV Amritsar-Verpal D/C, 220kV Dhuri-Dhanaula D/C, 220kV Jalandhar (BBMB)-Jamsher D/C, 220kV Makhu-Botianwala, 220kV Ludhiana-Laltonkalan etc.
- Enhancement in 220kV connectivity at 400/220kV Muktsar SS should be expedited to improve the reliability of 220kV Lehramohabbat & Bhatinda.
- Full generation at Ropar and Lehramohabbat TPS has been considered. Since, this generation is at 220kV, the reduced generation at these stations would be critical and would reduce the TTC/ATC figures of Punjab control area.
- Punjab SLDC needs to monitor continuously the voltage profile, load power factor and availability of shunt compensation. Punjab SLDC has to reassess its import capability for any change in the Punjab control area from the assumed scenario.

Detailed study report for TTC/ATC of Punjab is enclosed as Annexure-II.

Based on above TTC/ATC computation by SLDC, Punjab and NRLDC, the margins for Short-term Open Access (STOA) would be as under:

Duration	Time Period (in hours)	Total import capability of Punjab (MW)	Reliability Margin (MW)	ATC for open access and operating limit (MW)	Long term Access + Medium term open access (as on June 2017)	Margin for short term open access (MW)
July'17-Sept'17	00-24	6700	600	6100	4261	1839

In case of change in allocation or/and change in LTA, MTOA, these figures would change accordingly

*Detailed breakup of quantum

1. Allocation of Punjab from ISGS = 3836MW (As per data available with NRLDC).

a. Assume availability of ISGS plants @ 85%, the likely schedule — 3261MW.

2. Share of Punjab from BBMB = 1065MW (As per data available with NRLDC)

a. Typical schedule of Punjab from BBMB = 1000MW.

Thanking you,

भवदीय

(पी. के. अग्रवाल)

महाप्रबंधक

संलग्न: यथोपरि

प्रतिलिपि: Member Secretary, NRPC, New Delhi

: CEO, POSOCO