

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 133/MP/2014

**Coram:
Shri Gireesh B. Pradhan, Chairperson
Shri A.K. Singhal, Member
Shri A.S. Bakshi, Member**

Date of Order : 28th of February, 2017

In the matter of

Petition under Regulation 55 "Power to Remove Difficulties" of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and under Regulation 111 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999

AND

In the matter of

Power Grid Corporation of India Ltd.
Saudamini, Plot No. 2, Sector 29,
Gurgaon-122 001, Haryana

....**Petitioner**

Vs

1. Bihar State Electricity Board
Vidyut Bhawan, Bailey Road
Patna-800 001
2. West Bengal State Electricity Distribution Company Ltd.
Bidyut Bhawan, Bidhan Nagar
Block DJ, Sector-II, Salt Lake City
Calcutta-700 091
3. Grid Corporation of Orissa Ltd.
Shahid Nagar, Bhubaneswar-751 007
4. Damodar Valley Corporation
DVC Tower, Maniktala
Civic Tower, VIP Road
Calcutta-700 054

5. Power Deptt.
Govt. of Sikkim, Kazi Road
Gangtok-737 101
6. Jharkhand State Electricity Board
In Front of Main Secretariat
Doranda, Ranchi-834002
7. Maithan Power Ltd.
MA-5, Gogna Colony
Maithan Dam Post Office
DISTT: Dhanbad, Jharkhand-828207
8. Power Grid Corporation of India Ltd.
ER-I, 5TH Floor, Alankar Palace, Boring Road,
Patna-800 001
9. Assam State Electricity Board
Bijulee Bhawan,
Paltan Bazar
Guwahati-781 001, Assam
10. Meghalaya State Electricity Board
Short Round Road "Lumjingshai", Meecl
Shillong-793 001
11. SLDC Division, Department of Power,
Govt. of Arunachal Pradesh,
Vidyut Bhawan,
Itanagar-791111
12. Power and Electricity Deptt.
Govt. of Mizoram
Mizoram, Aizwal
13. Electricity Department
Govt. of Manipur, Keishampat
Imphal
14. Department of Power
Govt. of Nagaland
Kohima, Nagaland
15. Tripura State Electricity Corporation Ltd.
Banamalipur, Agartala-799001

16. Ajmer Vidyut Vitran Nigam Ltd.
Old Power House, Hathi Bhata, Jaipur Road
Ajmer, Rajasthan
17. Jaipur Vidyut Vitran Nigam Ltd.
Vidyut Bhawan, Janpath, Jaipur-302 005
18. Jodhpur Vidyut Vitran Nigam Ltd.
400 kV GSS Building
Ajmer Road, Heerapura, Jaipur, Rajasthan
19. Himachal Pradesh State Electricity Board
Vidyut Bhawan
Kumar House Complex Building II, Shimla
20. Punjab State Power Corporation Ltd.
Shed No. T-1 A, Thermal Design
Near No. 22, Phatak, Patiala, Punjab
21. Haryana Power Purchase Centre
Shakti Bhawan, Energy Exchange,
Room No. 446, Top Floor,
Sector-06, Panchkula-134109, Haryana
22. Power Development Deptt.
Govt. of Jammu & Kashmir
SLDC Building, 1st Floor
Gladani Power House, Narwal, Jammu
23. U.P. Power Corporation Ltd.
Import Export and Payment Circle
11th Floor, Shakti Bhawan Extn. Building,
14, Ashok Marg, Lucknow
24. UTC-Chandigarh
DIV-11, Opposite Transport Nagar,
Indl. PH-I, Chandigarh
25. Uttaranchal Power Corporation Ltd.
Urja Bhawan, Kanwali Road,
Near Balli Wala Chowk, Dehradun
26. BSES Yamuna Power Ltd.
2nd Floor, B-Block, Shakti Kiram Building,
(Near Karkadooma Court),
Karkadooma, Delhi

27. BSES Rajdhani Power Ltd.
BSES Bhawan,
2nd Floor, B-Block
Behind Nehru Place Bus Terminal
Nehru Place, New Delhi-110019
28. TPDDL
33 IV S/STN, Building,
Hudson Lane, Kinsway Camp, New Delhi-110019
29. New Delhi Municipal Corporation
Palika Kendra, Sansad Marg,
New Delhi-110001
30. North Central Railway
DRM Office,
Nawab Yusuf Road, Allahabad
31. HVDC Dadri,
Power Grid Corporation of India Ltd.
NR-I, B-9, Qutub Institutional Area,
Katwaria Sarai,
New Delhi-110 016
32. HVDC Rihand
Power Grid Corporation of India Ltd.
NR-I, B-9, Qutub Institutional Area, Katwaria Sarai,
New Delhi-110 016
33. Lanco Anpara Power Ltd.
Plot No. 397
Udyog Vihar, Phase 3
Gurgaon, Haryana-122016
34. PTC (Everest)
PTC India Ltd., 2nd Floor
15, Bhikaji Cama Place, New Delhi-110 066
35. AD Hydro
Bhilwara Towers
A-12, Sector-1
Noida-201 301, Uttar Pradesh
36. Jaiprakash Power Ventures Ltd.
A Block, Sector-128
Noida, Uttar Pradesh-201304

37. Lanco Budhil Power Pvt. Ltd.
Plot No. 397, Udyog Vihar Phase-III
Gurgaon, Haryana
38. PTC (Budhil)
PTC India Ltd., 2nd Floor
15, Bhikaji Cama Place
New Delhi, Delhi-110 066
39. Adani Power Ltd.
Mundra, 3rd Floor, Achalraj
Opposite Mayors Bungalow, Law Garden
Ahmedabad, Gujarat-380006
40. Himachal Sorang Power Pvt. Ltd.
D-7, Sector-I, Lane-1, 2nd Floor
New Shimla, Himachal Pradesh-171009
41. Bangalore Electricity Supply Company Ltd.
Power Purchase, 2nd Block,
2nd Floor, Corporate Office, KR Circle,
Bangalore-560 001, Karnataka
42. Gulbarga Electricity Supply Company Ltd.,
Corporate Office, Station Main Road,
Gulbarga-585 102, Karnataka
43. Hubli Electricity Supply Company Ltd.
Navanagar, PB Road
Hubli, Karnataka
44. Managalore Electricity Supply Company Ltd.
Corporate Office, Paradigm Plaza AB Shetty Circle,
Mangalore-575001, Karnataka
45. Chamundeshwari Electricity Supply Corporation Ltd.
927, Ljavenue, GF New Kanthraj URS Road
Saraswthipuram,
Mysore-570009 Karnataka
46. Andhra Pradesh Power Co-Ordination Committee
Room No. 547, 5th Floor, Block-A,
Vidyut Soudha, Somajiguda,
Khairathabad
Hyderabad-500 082, Andhra Pradesh

47. Kerala State Electricity Board,
Cabin No. 817, 8th Floor
Vaidyuthi Bhavanam, Pattom,
Thiruvananthapuram-695004, Kerala
48. Tamil Nadu Generation And Distribution Company
7th Floor, Eastern Wing,
Npkrr Maligai, Tneb,
144, Anna Salai
Chennai-600 002, Tamil Nadu
49. Puducherry Electricity Department,
Govt. of Puducherry, No. 137,
Nethaji Subhash Chandra Bose Salai,
Puducherry- 605 001
50. Goa Electricity Department,
Govt. Of Goa, Curti-Ponda,
Goa-403 401
51. Lanco Kondapalli Power Ltd.,
Lanco House, Plot No.-4,
Software Units Layout, Hitec City,
Madhapur, Hyderabad-500 081,
Andhra Pradesh
52. Power Grid Corporation of India Ltd.
Pragati Maha Laxmi, South Block (2nd, 3rd Floor)
No. 63, 3rd Cross, Mei Road,
Industrial Suburb, Yashyatpur,
Bangalore, 560 022 (Karnataka)
53. Madhya Pradesh Trade Co
Shakti Bhawan, Vidyut Nagar, Rampur,
Jabalpur-482 008 (MP)
54. Madhya Pradesh Audyogik Kendra Vikas Nigam (Indore) Ltd.,
Free Press House, 1st Floor, 3/54,
Press Complex,
Agra-Bombay Road
Indore-452 008
55. Maharashtra State Electricity Distribution Co. Ltd.
Prakashgad, 4th Floor
Bandra (East), Mumbai-400 052

56. Gujarat Urja Vikas Nigam Ltd.
Vidyut Bhawan, Race Course, Baroda-390 007
57. Electricity Department
Administration of Daman & Diu
Daman-396 210
58. Electricity Department
Administration of Dadra Nagar Haveli
U.T., Silvassa-396 230
59. Chhattisgarh State Electricity Board
P.O. Sunder Ngr, Dangania, Raipur
Chhatisgarh-492013
60. M/S Jindal Power Ltd.
2nd Floor, DCM Building,
Plot No. 94, Sector No. 32,
Gurgaon (Haryana)
61. Adani Power Ltd.
Sambhav Press Building,
6th Floor, B Wing,
Judges Bungalow,
Ahmedabad-380 015
62. PTC India Ltd.
2nd Floor, NBCC Tower,
15, Bhikaji Cama Place,
New Delhi-110066
63. Torrent Power Generation Ltd.,
Sugen Mega Power Project,
Off National Highway No. 8,
Taluka: Kamrej, Dist.: Surat-394155
64. Heavy Water Board,
Vikram Sarabhai Bhavan,
5th Floor, Anushaktinagar,
Mumbai-400 094
65. HVDC Bhadrawati, WR-I,
Power Grid Corporation of India Ltd.,
Sampriti Nagar, Nari Ring Road,
PO: Uppalwadi, Nagpur-440 026

66. HVDC Vindhyachal, WR-I,
Power Grid Corporation of India Ltd.,
Sampriti Nagar, Nari Ring Road,
PO : Uppal Wadi, Nagpur-440 026
67. Goa Electricity Department,
Govt. of Goa, Curti-Ponda,
Goa-403 401
68. ACB India Ltd.
7th Floor, Corporate Tower
Ambience Mall, Nh8
Gurgaon-122 001, Haryana

Parties Present:

For the Petitioner: Shri M.G. Ramachandran, Advocate
Ms Anushree Bardhan, Advocate
Ms Poorva Saigal, Advocate
Shri A.M. Pagvi
Shri J. Mazumder
Shri Shashi Bhushan

For the Respondent: Nemo

ORDER

The petitioner, Power Grid Corporation of India Limited (PGCIL), has filed the present petition seeking the following prayers:

“(i) To entertain the present petition and direct that POWERGRID be given allocation of power from any one or more of the Central Sector Generating Station for AC sub-stations of POWERGRID in line with HVDC stations for meeting the auxiliary power requirements of the substations and housing colonies/townships etc of POWERGRID and increase it on projected basis for each year for the new substations to be commissioned. POWERGRID shall pay only the energy charges against the allocation from Central Sector Generating Station on its ex-bus basis;

(ii) Direct that till the time allocation for auxiliary power supply from Central Sector Generating Station is made for AC substations, payment of energy drawn through tertiary winding of ICTs to DISCOMS shall be the energy charges at the applicable rate of energy but without considering the capacity charges for the tertiary connection as no utility system is utilized for drawing the power through tertiary;

(iii) Direct that the Respondent - except CSGS from where the allocation has been made, other utilities shall not be entitled to raise any bill on POWERGRID for utilization of power

through tertiary of ICTs in the substation and no transmission charges shall be applicable, however payment for HT connections taken from State Power Utility will be made as capacity charge as per the contract agreement and energy charge as per the actual consumption, and

(d) Pass such further order or orders as the Hon`ble Commission may deem just and proper in the circumstances of the case.”

Submission of the Petitioner

2. The petitioner has submitted that it is undertaking activities of owning and operating transmission network and systems having 1,06,803 ckt km of EHV transmission lines, 184 EHVAC and HVDC sub-stations with transformation capacity of about 2,05,323 MVA as on 31.3.2014. The transmission system of the petitioner is consistently maintained at an availability of more than 99% with reliability. The petitioner has submitted that sub-stations are the critical part of the transmission network which involves smooth functioning of various assets of the sub-stations for the purpose of maintaining transmission system with safety and security. The petitioner has submitted that reliable auxiliary power supply is an absolute necessity for smooth operation of all sub-systems of the sub-station including the protection system. The petitioner has submitted that inaccurate/mal-operation of protection systems not only run the risk of damage of the equipment but also has the potential of leading to grid disturbance. According, to the petitioner, the auxiliary power supply feeders need to be very reliable with high availability so that all the auxiliaries including protective gears operate correctly in case of their requirement in any exigencies.

3. The petitioner has further submitted that considering the importance of reliable auxiliary power source in EHV sub-stations, Central Electricity Authority vide notification dated 21.2.2007 has notified the Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations, 2007 (hereinafter “CEA Grid Connectivity Regulations”). Regulation 6 of Part III of the Grid Connectivity Regulations deals with “Grid

Connectivity Standards applicable to the transmission lines and sub-stations". In accordance with the said regulation, for auxiliary supply to the sub-station, two high tension supplies are to be made available from two independent sources i.e. the auxiliary power supply connections are to be sourced from two different sub-stations of respective State Utilities/other sources. Generally, these supplies are made available from the respective utilities of the State where sub-stations of PGCIL are established. In addition, operation of the sub-station and transmission system requires housing the operating staffs in the premises in the interest of satisfactory operation of the sub-station. Such housing colonies or township for the residence of the staff also requires electricity. The consumption of electricity at the staff colonies is an integral part of the activity of transmission of electricity by a transmission licensee and is also deemed to a part of the auxiliary consumption of the sub-station.

4. The petitioner has submitted that the Electricity (Removal of Difficulties) Seventh Order, 2005 notified by the Central Government, provides that "supply of electricity by a transmission licensee to the housing colonies of the operating staff located in the premises of that substation, will be deemed to be an integral part of the activity of transmitting electricity and such licensee shall not be required to obtain licence under the Act for such supply of electricity". Since all consumption of electricity at the sub-stations including the staff or housing colonies located in the premises of sub-stations are part of the auxiliaries of the sub-station, the petitioner is entitled to consume as incidental to the activities of transmission of electricity in terms of Section 38 of the Act. The petitioner has submitted that the Operation and Maintenance of the transmission systems necessarily involve the consumption of electricity for auxiliary system including housing the colonies and

townships.

5. The petitioner has submitted that at present, about 91% of PGCIL's sub-stations have only one feeder connection from State power utility as there is no second independent source available either at 33 kV or 11 kV level nearby. Further, out of balance 9% sub-stations, some are having two connections from the same source which is equivalent to one source only. If the main source of the sub-station fails, there will be no auxiliary power supply to PGCIL's sub-station from the sub-station of the utility. The petitioner has submitted that due to non-availability of 2nd independent source for auxiliary power supply, the petitioner has not been able to effectively comply with the CEA Grid Connectivity Regulations which has an impact on the safety and security of equipment affecting reliability and stability of the grid.

6. The petitioner has submitted that the following major issues are being encountered on the source of auxiliary power supply:

(i) Some of these single source feeders are having multiple tapplings taken by the State Utility for supplying power to their adjoining locality making the same unreliable.

(ii) Large number of trippings take place because of faults resulting in very low reliability and availability ranging from 20% to 40%.

(iii) Due to non-availability of 2nd source of supply, EHV sub-stations remain vulnerable i.e. in case of any break down of the auxiliary power source, there will be no auxiliary power supply till restoration of single source.

(iv) Frequent tripping and low availability of HT feeder is forcing the petitioner to depend on DG sets which are neither reliable nor environment friendly. DG sets are meant for taking care of exigencies only, and not for frequent operations lasting for long duration.

(v) Disputes arise due to unreasonable claims by State Utilities resulting into unilateral disconnections of auxiliary power supply to the sub-stations of the petitioner by the State Utilities.

(vi) Interruption of auxiliary power supply has been experienced during employee unrest in Utility.

(vii) Because of poor quality of auxiliary power supply, inter-regional tripping may not be avoided in future.

7. The petitioner has submitted the status of availability and reliability of auxiliary power sources in ten of its sub-stations in Bihar in Eastern Region, namely 220/132 kV Ara sub-station, 400/220 kV Bihar sheriff sub-station, 400/220 kV Patna sub-station 400/220 kV Banva sub-station, 400/220 kV Muzaffarpur sub-stations, 765/400/220 kV Gaya sub-station, 220/132 kV Purnea sub-station, 400/220 kV New Purnea sub-station, 400/220 kV Jamshedpur sub-station, and 400/220 kV Ranchi sub-station. While no source is available for 400/220 kV Banva sub-station, BSEB supplies are not available at 400/220 kV Purnea sub-station. In 230/132 kV Agra sub-station, feeder has been unilaterally disconnected by the distribution company. In the sub-stations, availability of power ranges from 40% to 90% while the number of tripping ranges from 25 to 600 in a

month. The petitioner has submitted that there were several rounds of discussions on TCC/ERPC forum for restoration of power supply to these sub-stations, but the State power utility did not comply with the decision of the forums.

8. The petitioner has submitted that the matter regarding poor availability and reliability of auxiliary power supply in various sub-stations of PGCIL in NER was taken up in the 91st OCC meeting of NERPC held on 15.11.2013. As per the minutes of meeting dated 15.11.2013 (Annexure III of the petition), the availability of auxiliary power supply from ASEB is low at most of the sub-stations and is as low as 20% at Misa sub-station. In the said minutes, the availability of HT power supply for Bongaigaon sub-station and Salakati sub-station was also discussed. During the said meeting, the sub-committee advised PGCIL to pursue with concerned constituents for getting supply from 2nd source so that the work could be completed at the earliest for the benefit of the grid. The sub-committee advised PGCIL to go for 2nd DG set only in sub-stations where there is no 2nd reliable source. The sub-committee further advised that wherever 2nd transformers with tertiary is available and is designed for loading on tertiary, PGCIL should install 2nd station/auxiliary Transformer, fed from tertiary. The petitioner has also placed on record the stations of auxiliary power supply in other regions including number of trippings during last one year (Annexure-IV) to the petition and has submitted that number of trippings for AT Feeder is high for some sub-station and annual availability is low for same sub-stations.

9. The petitioner has submitted that it is important for PGCIL to have a reliable source of power supply for auxiliary consumption to the sub-stations and also a need to adopt a

uniform approach across all constituents of Indian Grid for rationalization of payments towards auxiliary power consumption. The petitioner has submitted that Regulation 39 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (2014 Tariff Regulations) deals with the auxiliary energy consumption for the AC and HVDC sub- stations. In Regulation 39 (b) of the 2014 Tariff Regulations, there is a stipulation that in respect of HVDC sub-stations, the Central Government may allocate appropriate share from one or more of the inter-State generating stations for auxiliary consumption and charges for the same shall be borne by the transmission licensee and the same shall form part of the O&M expenses. The petitioner has submitted that since there is no specific reference to such allocation in case of AC sub-station, it may be clarified that Regulation 39 of the 2014 Tariff Regulations permits the petitioner to get allocation from one or more of the generating stations by the Central Government. The petitioner has further requested for a clarification that in terms of Removal of Difficulties, Seventh Order, 2005, the allocated power may be made use of by the petitioner for meeting the requirements of staff colonies and township etc. where the staff of the petitioner is stationed to operate and maintained the sub-station and associated facilities. According to the petitioner, allocated power would be drawn through the tertiary winding of ICTs installed in the sub-stations of PGCIL as the reliability of the auxiliary power through tertiary would be very high. The petitioner has enumerated the following advantages for availing power from tertiary winding of ICT:

- (i) Minimum interruption or auxiliary power supply due to higher availability of the ICT;

- (ii) Running of DG set will also be minimum leading to less oil consumption and hence lower O&M cost and minimum pollution level;
- (iii) Auxiliary power supply from ICT tertiary winding would provide quality power;
- (iv) No effect of external disturbances i.e. disturbance in utility or due to breakdown of utility system.

10. The petitioner has submitted that in case of any difficulty in availing auxiliary power supply in the sub-station due to outage of the related system, auxiliary power would be availed through the 2nd source i.e. HT feeder connected to the sub-station from the State Power Utility and payment to the concerned State Power Utility for the HT feeder connection would be made consisting of (a) Capacity Charge as per the contract agreement of HT feeder; and, (b) energy charge as per the actual energy consumption through HT feeder.

11. The petitioner has submitted that auxiliary power for HVDC station is met through the allocation from the Central Generating Stations. For the AC sub-stations, the present peak requirement is about 30 MW for 174 nos. of existing sub-stations. However, the allocation may be increased each year on projection basis for new sub-stations. The petitioner has submitted that the matter of availing the auxiliary power supply through tertiary winding of ICTs was taken up with CEA who vide letter dated 21.3.2014 clarified that 'CEA Regulations do not debar a user/requester using tertiary of the ICT on main source of supply to the auxiliaries of the sub-station and as such amendments were not required.'

12. The petitioner has submitted that on 30.4.2014, a meeting was held with Member (GO&D), CEA and officials of PGCIL and Bihar's State power utilities on the issue of auxiliary power consumption in PGCIL's sub-stations. The petitioner has placed on record a copy of the record of discussion (Annexure VB to the petition). The petitioner has submitted that CEA in the above said meeting opined that reliable auxiliary power can be sourced through tertiary winding of the ICT installed in the sub-stations. Since, tertiary of the ICT installed in the sub-stations can be utilized for auxiliary power supply, this will not only ensure compliance of the Grid Connectivity Regulations on auxiliary power but also will ensure high reliability of the transmission system with cost efficiency due to less running of DG sets in the sub-stations during frequent outage of HT feeder of the distribution companies.

13. The petitioner has submitted that 74% of the sub-stations of PGCIL have tertiary installed and in 55% cases, auxiliary power is being availed from tertiary winding till filing of the present petition. All the ICTs where tertiary winding is in use for auxiliary power supply have been operating without any problem as adequate protection system has been put in place. The petitioner has submitted that in order to extend the facility of availing auxiliary power from tertiary of the ICT (where provision of tertiary tapping is available in transformer), a sum of ₹95 lakh (approximately) would be required for installation of auxiliary power transformer along with switchgear for each sub-station. The petitioner has stated that as energy meter is also installed in the system taken out from the tertiary, energy accounting can be determined. Further, power drawn from tertiary is the power directly drawn from the grid without utilizing the network of State Utility i.e. no infrastructure is built by State Power Utility.

14. The petitioner, with regard to payment of charges towards auxiliary consumption in the various AC sub-stations spread over length and breadth across the country, has stated that energy charges towards said auxiliary consumption shall be accounted for the allocation made from CSGS in the respective regions. However, levy of the transmission charges shall be practically difficult on account of large number of sub-stations spread at different locations. The petitioner has submitted that the prevailing PoC mechanism is not amenable for treatment of meager quantum of power availed at large number of needs spread across the country for smooth operation of the National Grid. The petitioner has submitted that it may be levied energy charges on ex-bus basis of the Central Generating Stations.

15. The Commission directed the staff to examine the issues after seeking further information, if any from the petitioner and submit a proposal to the Commission after consultation with CEA to address the problem. CEA was directed to submit its report on the proposal of the petitioner.

16. CEA, vide its letter dated 16.4.2015, has submitted a report on the proposal of the petitioner. The summary of report is as under:

- (a) Reliable auxiliary power supply is of absolute necessity for smooth operation of control and protection system. Inaccurate/mal-operation of control and protection system and switchgear equipment not only run the risk of damage of the equipment but also has the potential of leading to grid disturbance.

- (b) Proposal of PGCIL to utilize tertiary winding of the ICTs at its substation as the primary source to feed auxiliary equipment reliability is considered in the interest of the grid security and hence, it is in order, subject to due care for necessary protections to safeguard the adverse impact arising from faults at tertiary winding and its downstream network.
- (c) PGCIL shall continue with HT feeder connection from State utility as secondary source of supply to its sub-stations, payment of which will be as per the contract agreement with the States.
- (d) PGCIL needs to arrange at least one dedicated feeder from the nearby utility substation to its stations where no feeder is currently available and it is solely dependent upon its tertiary transformer and DG sets to meet the auxiliary power requirement. Similarly, there are sub-stations of PGCIL, where there are two dedicated feeders from State's sub-stations, DG sets as well as arrangement of supply from tertiary winding of the ICTs, for meeting auxiliary power requirement. At such substations, PGCIL may consider to surrender one of the feeders to the state utility to economize on the O&M cost.
- (e) Disconnection of feeders to EHV AC substations meant for meeting auxiliary power requirement by any state utility due to commercial disputes is considered as an act of threat to the grid security and should not be used to resolve such disputes. There is a need to issue suitable directions in this regard to all the state utilities in the country.

(f) Proposal for allocating power from one or more CGSs to EHV AC substations of PGCIL in the country to meet the auxiliary consumption through tertiary winding of the ICTs is not considered practicable and appropriate. It is not considered appropriate in view of the following:

(i) Auxiliary power requirement at HVDC substations is substantial due to valve cooling systems against very small consumption at an EHV AC substation. Due to this, each HVDC substation has been allocated power from a CGS (out of unallocated quota) individually and its accounting is being done like any other regional drawee utility. Allocation of a few kW to each EHV AC substation of PGCIL- numbering 174 at present - from a CGS is not considered practicable. It is, therefore, not appropriate to compare allocation from CGS to HVDC sub-stations with that to AC substations.

(ii) If a number of substations located across several States are allocated power from a CGS, the scheduling and accounting (including DSM) of such power would be avoidably complex as modalities for the same would have to be evolved in consultation with RPCs, RLDCs, SLDCs and DISCOMs of the country.

- (iii) Other inter-state transmission licensees may also raise demand for allocation of power from CGSs to their substations for meeting auxiliary consumption.
- (iv) Unallocated quota of CGSs is limited and is meant for allocation by the Central Government to the States/UTs in distress or emergency situations from time to time.
- (g) There should be uniformity in billing of energy drawn through tertiary transformers at its EHV AC substations across all states in the country.
- (h) For the energy drawn at PGCIL sub-stations through tertiary transformers, State utility should not raise any bill towards capacity charges as the infrastructure for drawal of such power has been created by PGCIL and the State utility has not incurred any expenditure therein. State utility may raise bill on PGCIL towards energy charges for meeting auxiliary energy consumption.
- (i) CEA has suggested that the issue of uniform method of charging in the States for the energy drawn at EHV AC sub-stations through tertiary winding for auxiliary consumption purposes be taken up at Forum of Regulators (FoR) for early implementation by SERCs.

17. None of the respondents have filed their replies despite notice.

Analysis and Decision:

18. We have considered the submission of the petitioner and report of the CEA. The main issue for consideration is that whether the petitioner is entitled for allocation of power from any one or more of the Central Sector Generating Stations for its AC sub-stations in line with HVDC stations for meeting the auxiliary power requirements of its sub-stations.

19. The petitioner has submitted that it is facing difficulty in implementation of the CEA Grid Connectivity Regulations as two independent sources of supply are not available for its various sub-stations. The petitioner has submitted that Regulation 39 of the 2014 Tariff Regulations should be clarified that PGCIL shall be entitled to an appropriate allocation of power from any one or more generating stations, wherein the power is allocated by the Central Government. CEA has submitted that since the auxiliary power requirement at HVDC sub-stations is substantial due to valve cooling systems, each HVDC sub-station has been allocated power from the Central Sector Generating Station (out of unallocated quota) individually and its accounting is being done like any other regional drawee utility. CEA has stated that allocation of a few kW to each EHV AC sub-station of PGCIL - numbering 174 at present- from the Central Sector Generating Stations is not considered practicable and it is not appropriate to compare allocation from the Central Sector Generating Stations to HVDC sub-stations with AC sub-stations. CEA has also submitted that if a number of sub-stations located in several States are allocated power from the Central Sector Generating Stations, the scheduling and accounting (including DSM) of such power would be avoidably complex as modalities

for the same would have to be evolved in consultation with RPCs, RLDCs, SLDCs and DISCOMs of the country. CEA has submitted that other inter-State transmission licensees may also raise demand for allocation of power from the Central Sector Generating Stations to their sub-stations for meeting auxiliary consumption.

20. We have considered the submissions of the petitioner and the CEA. Regulation (6) under Part III of Grid Standard Regulations provides as under:

“(6) Power Supply to sub-station Auxiliaries, shall:

- (a) For alternating current (AC) supply (Applicable to new sub-station):
 - 220 kV and above: Two high tension (HT) supplies shall be arranged from independent sources. One of the two high tension supplies shall be standby to the other. In addition, an emergency supply from diesel generating (DG) source of suitable capacity shall also be provided.
 - 66kV and below 220 kV : There shall be one HT supply and one diesel generating source.
 - 33kV and below 66 kV : There shall be one HT supply.
- (b) For direct current (DC) Supply (Applicable to new sub-stations) : Sub-stations of transmission system for 132 kV and above and sub-stations of all generating stations: There shall be two sets of batteries, each equipped with its own charger.
For sub-stations below 132 kV : there shall be one set of battery and charger.”

It is thus seen that as per the Grid Standard specified by CEA, AC sub-stations of 220 kV and above shall have two high tension supplies from independent sources in addition to an energy supply arrangement from diesel generating sets. The Commission in the Statement of Objects and Reasons on 2014 Tariff Regulations observed that the CEA in exercise of powers under Section 73 of the Act has specified the Grid Standards Regulations and transmission licensees are required to comply with provision of Grid Standards of CEA. However, petitioner approach of seeking removal of difficulty in CEA Grid Connectivity Regulations through the CERC Regulations and that too under Tariff

Regulations is not a correct approach. In our view, the power from Central Generating Stations is allocated by Ministry of Power, Government of India in accordance with set Procedure & Guidelines. The petitioner may approach the Ministry of Power, Government of India for allocation of power from any one or more of the Central Sector Generating Stations for its AC sub-stations.

21. Further, CEA has submitted that the petitioner's sub-stations have only a single feeder for meeting its auxiliary power requirement. Even if second feeder is arranged from a remote utility sub-station, it may not provide reliable supply because it is likely to be prone to frequent tripping due to its passage through villages, forest areas, etc. Under such circumstances, proposal of the petitioner to utilize tertiary winding of the ICTs at its sub-station as the primary source to feed auxiliary equipment reliably is considered in the interest of the grid security. Therefore, it is in order, subject to due care for necessary protections to safeguard the adverse impact arising from faults at tertiary winding and its downstream network. CEA has also suggested that the petitioner needs to arrange at least one dedicated feeder from the nearby utility sub-station to its those stations where no feeder is currently available and it is solely dependent upon its tertiary transformer and DG sets to meet the auxiliary power requirement. Similarly, there are sub-stations of PGCIL, where there are two dedicated feeders from State's sub-stations, DG sets as well as arrangement of supply from tertiary winding of the ICTs for meeting auxiliary power requirement. At such sub-stations, the petitioner may consider to surrender one of the feeders to the State utility to economize on the O&M cost. CEA has submitted that this arrangement would also ensure compliance of the

relevant provision in CEA Grid Connectivity Regulations. We have considered the submission of petitioner and suggestion of CEA. We are in agreement with the CEA's suggestions. The petitioner may draw auxiliary power requirement through tertiary winding of the ICTs at its sub-stations. The petitioner shall arrange one dedicated feeder from the State Utility where no feeder is currently available and it is solely dependent upon its tertiary of the ICTs and DG sets to meet the auxiliary power requirement. We direct that the petitioner should take steps to surrender one of the dedicated feeders to the State utilities as suggested by CEA above.

22. The petitioner in its second prayer has sought direction that till the time of allocation for auxiliary power supply from the Central Sector Generating Stations is made for AC sub-stations, payment of energy drawn through tertiary winding of ICTs to the distribution companies shall be the energy charges at the applicable rate of energy without considering the capacity charges for the tertiary connection.

23. According to the CEA, in case of energy drawn through tertiary transformers at its EHV AC sub-stations across all States in the country, State utility should not raise any bill towards capacity charges as the infrastructure for drawal of such power has been created by PGCIL and the State utility has not incurred any expenditure therein. CEA has suggested that State utility may raise bill on PGCIL towards energy charges for meeting auxiliary energy consumption. CEA has also suggested that the issue of uniform method of charging in the States for the energy drawn at EHV AC sub-stations through tertiary winding for auxiliary consumption purposes should be taken up at Forum of Regulators (FoR) for early implementation by SERCs.

24. We have considered the submission of petitioner and suggestions of CEA. It implies from the submission of the petitioner that drawal of energy by it from the tertiary winding of ICT would be part of schedule drawal of Discom of the State in which sub-station is situated. The concerned Discom would in any case be paying for its energy charges based on schedule and capacity charges based on its allocation. Further, the State Discom would also be bearing the transmission charges and losses of such drawal of state Discom at substation. In this back drop, question is what charges should be paid by the petitioner. We are of the view that the petitioner should pay for the power drawn through tertiary winding of ICTs as per the agreements entered with respective State Utilities Discom in accordance with relevant SERC Regulations. In the light of above, suggestion of CEA for charging only energy charges from PGCIL cannot be accepted. However, we direct Secretariat of FOR to take up the matter in FOR meeting for deliberation and arriving at a mechanism for uniform method of charging in the States for the energy drawn at EHV AC sub-stations through tertiary winding for auxiliary consumption purposes. The petitioner is directed to submit a proposal in this regard to FOR Secretariat within one month from the date of this order.

25. The petitioner has stated that the distribution companies of Bihar had disconnected the feeders to their Agra, Patna and Muzaffarpur sub-stations due to issues related to billing and payment of charges for the power drawn. We are of the view that a sub-station is a critical part of the transmission network and the operation of the sub-stations involves smooth functioning of various sub-station assets for the purpose of O&M of the transmission system with reliability, safety and security. Dis-connection of feeders to the petitioner's sub-stations meeting auxiliary power requirement by any State

utility due to commercial disputes is considered an act of threat to the grid security. Accordingly, the petitioner should have taken actions to prevent creating such threat to grid security. In case of any dispute in billing, the petitioner should have paid the bill (under protest) and resolved the matter later. Since, the payment withheld by the petitioner led to dis-connection of supply of auxiliary power by State utility and put grid security under threat, the petitioner should take all the commercial decisions considering grid security as top most priority, if so advised.

26. According to the petitioner, around 91% of EHV AC sub-stations of PGCIL have only one HT feeder connection from State power utility to meet their auxiliary power requirement as there is no second independent source available either at 33 kV or 11 kV level nearby. Balance 9% sub-stations have two feeders connections and some of them have not independent sources of power supply as they emanate from the same utility sub-station. At such sub-stations, if the main source of utility fails, there will be no auxiliary power supply to PGCIL's sub-station from the sub-station of the Utility. Therefore, only certain EHV AC sub-stations of PGCIL are able to comply with the provisions of the CEA Grid Connectivity Regulations. Perusal of the petition reveals that there are certain AC sub-stations like Muzaffarpur, Patna, Banka, Manesar, Kotputli, etc. which do not have even a single feeder from utility's sub-stations for meeting their auxiliary power consumption. CEA has also expressed concern on the above issue. According to the CEA, such a scenario is not conducive to safe and secure operation of the grid. We are in agreement with the CEA's concern. In our view, there is an urgent need to enforce the provision of two independent reliable sources of supply at the EHV

AC sub-stations of PGCIL in terms of the provisions of the CEA Grid Connectivity Regulations.

27. The petitioner in its third prayer has sought direction that the respondents except the Central Sector Generating Stations from where the allocation has been made and other utilities shall not be entitled to raise any bill on PGCIL for utilization of power through tertiary of ICTs in the sub-stations and no transmission charges shall be applicable. We have considered the prayer of the petitioner. CEA has suggested that for the energy drawn at PGCIL`s sub-stations through tertiary of ICTs, State utilities should not raise any bill towards capacity charges if they have not incurred any expenditure therein as the infrastructure for drawal of such power has been created by PGCIL. In our view, charges claimed by the utilities should be as per the agreements entered into with the utilities in accordance with the respective SERC`s Regulations.

28. The petition is disposed of with the above.

sd/-
(A.S. Bakshi)
Member

sd/-
(A.K. Singhal)
Member

sd/-
(Gireesh B. Pradhan)
Chairperson