CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 184/MP/2020

Coram:
Shri P.K. Pujari, Chairperson
Shri I.S. Jha, Member
Shri Arun Goyal, Member

Date of Order: 21st August, 2020

In the matter of

Submission under sub-section (4) of section 28 of Electricity Act 2003 read with Regulation 6 & Regulation 29 of Central Electricity Regulatory Commission (Fees & charges of Regional Load Despatch Centre and other related matters) Regulations, 2015 for approval of Performance Linked Incentive for SRLDC for the financial year 2018-19 with reference to SRLDC Charges for the control period 1.4.2014 to 31.3.2019.

And
In the matter of

Southern Regional Load Despatch Centre,
No. 29, Race Course Cross Road, Bengaluru-560009
Power System Operation Corporation Ltd. (POSOCO)
(A Govt. of India Enterprise) **....Petitioner**

Vs.

1. The CMD
APTRANSCO, Vidyut Soudha
Hyderabad-500082, Telangana

2. The CMD
TSTRANSCO, Vidyut Soudha
Hyderabad-500082, Telangana

3. The Managing Director
PCKL, KPTCL Building
Cauvery Bhavan, Bangalore-560009
Karnataka,

4. The Chairman
KSEB, Vaidyuthi Bhavanam
Pattom, Trivandrum-695004

Kerala

5. The Chairman
TNEB, 144, Anna Salai
Chennai-600002, Tamil Nadu

6. The Superintending Engineer
Puducherry, Electricity Dept. of Pondicherry
Pondicherry-605001

7. The Chief Engineer (Electrical)
Goa Electrical Board, Office of Chief Electrical Engineer (Electrical)
Govt. of Goa, Vidyuth Bhavan
3rd Floor, Panaji, Goa-403001

8. The Executive Director
Powergrid HVDC,
Southern Regional Transmission System-II
Near RTO Driving Test Track
Singanayakanhalli, Yelahanka
Bangalore-560064, Karnataka

9. The General Manager
Ramagundam STG I & II
NTPC, RSTPS, Jyothui Nagar
Dist. Karim Nagar
Telangana-505215

10.The General Manager
Ramagundam STG III
NTPC, RSTPS, Jyothui Nagar
Dist. Karim Nagar
Telangan-505215

11.The General Manager
Simhadri STG-II, NTPC, District-Viskhakhapatnam
Simhadir-531020, Andhra Pradesh

12.The General Manager
Simhadri STG-I, NTPC, District-Viskhakhapatnam
Simhadir-531020, Andhra Pradesh

13.The Executive Director
NTPC, Talcher Stg-II
NTPC, Kaniha, Deepshikha
P.O., District-Angul-759147
Orissa

14.The DGM (O&M)
Kudgi STPP, NTPC, T.K. Basavana Bagewadi
Bijapur, Dist. 586121
Karnataka

15.The Chief General Manager
NLC TPS II STG I, Neyveli Lignite Corporation Ltd.
Thermal Power Station II
Neyveli-607801
Tamil Nadu

16.The Chief General Manager
NLC TPS II STG II, Neyveli Lignite Corporation Ltd
Thermal Power Station II
Neyveli-607801
Tamil Nadu

17. The Chief General Manager
NLC TPS I Expansion
Neyveli Lignite Corporation Ltd
Thermal Power Station I (Expn.)
Neyveli-607801
Tamil Nadu

18.The Chief General Manager
NLC TPS II Expansion
Neyveli Lignite Corporation Ltd
Thermal Power Station II (Expn.)
Neyveli-607801
Tamil Nadu

19.The Chief General Manager
New Neyveli Thermal Power Project
Neyveli-6078807, Cuddalore
Tamil Nadu

20.The Station Director (MAPS)
Nuclear Power Corporation of India Ltd.
Madras Atomic Power Station
Kalpakkam-603102
Tamil Nadu

21. The Station Director (KGS Units 1& 2)
Nuclear Power Corporation of India Ltd
Kaiga Generating Station
Kaiga-581400, Karwar, Karnataka

22.The Station Director (KGS Units 3 & 4)
Nuclear Power Corporation of India Ltd
Kaiga Generating Station
Kaiga-581400, Karwar, Karnataka

23.The Station Director (KNPP Unit-1)
Kudankulam Nuclear Power Project
Nuclear power Corporation of India Ltd
Kudankulam Post, Radhapuram Taluk-627106
Tamil Nadu

24. The Station Director (KNPP Unit-2)
Kudankulam Nuclear Power Project
Nuclear power Corporation of India Ltd
Kudankulam Post, Radhapuram Taluk-627106
Tamil Nadu

25.The Executive Director
NTPC Tamil Nadu Energy Company Ltd
Vallur Thermal Power Project
Vellivoyalchavadi Post
Poneri Taluck
Tiruvallur Dist, Chennai-600013, Tamil Nadu

26.The Executive Director
NLC Tamil Nadu Power Limited
2*500 MW JV Thermal Power Project
Harbour Estate
Tuticorin-628004, Tamil Nadu

27.The Executive Director
Lanco Kodapalli St-II
Lanco Kondapalli Power Pvt. Ltd
Kondapalli, Ibrahimpatna Mandal-521228
Telangana

28. The Executive Director
Lanco Kodapalli St-III
Lanco Kondapalli Power Pvt. Ltd
Kondapalli, Ibrahimpatna Mandal-521228
Telangana

29.The CMD
Meenakshi Energy Pvt. Ltd (Phase-I)
405, Saptagiri Towers,
1-10-75/1/1 to 6, Begumpet,

Secunderabad-500016, Telangana

30.The CMD
Meenakshi Energy Pvt. Ltd (Phase-II)
405, Saptagiri Towers,
1-10-75/1/1 to 6, Begumpet,
Secunderabad-500016, Telangana

31.The General Manager
Simhapuri Energy Limited
Madhucon Green Lands
6-3-866/2, 3rd Floor, Begumpet
Hyderabad-560016, Telangana

32.The President and CEO
Coastal Energen Pvt. Ltd
7th Floor, Buhari Towers
No. 4, Moores Road
Chennai-600006, Tamil Nadu

33.The Chief Commercial Officer (CCO)
Sembcorp Energy India Ltd.,
6-3-1090, A-Block, 5th Floor,
T.S.R Towers, Raj Bhavan Road,
Somajiguda, Hyderabad 500082, Telangana

34.The AGM-Electrical
IL&FS Tamil Nadu Power Company Limited
C. Pudhupettai (Post), Parangipettai (Via)
Chidambaram (TK), Cuddalore-608502
Tamil Nadu

35.The Chief Commercial Officer (CCO)
Sembcorp Energy India Ltd.,
6-3-1090, A-Block, 5th Floor,
T.S.R Towers, Raj Bhavan Road,
Somajiguda, Hyderabad 500 082, Telangana

36.Associate Director-Business Development
FRV Andhra Pradesh Solar Farm-I Pvt. Ltd.,
Aria Tower - Unit 5 C, 5th Floor,
JW Marriott Hotel, Aerocity Asset Area 4,
Hospitality District,
Near Indira Gandhi International Airport, New Delhi 110 037

37.Associate Director-Business Development
FRV Andhra Pradesh Solar Farm-II Pvt. Ltd.,

Aria Tower - Unit 5 C, 5th Floor,
JW Marriott Hotel, Aerocity Asset Area 4,
Hospitality District,
Near Indira Gandhi International Airport, New Delhi 110 037

38.General Manager,
Azure Power thirty six private limited,
3rd floor, Asset 301-304,
World mark 3, Aerocity,
Delhi, 110037

39.Group Head Commercial,
Tata Power Renewable Energy Limited,
2nd Floor, Block B, Corporate Centre,
34, Sant Tukaram Road,
Carnac Bunder, Mumbai 400 009

40.The Manager
ACME Karnal Solar Power Pvt. Ltd.,
Plot No. 152, Sector-44,
Gurugram, Haryana 122 003

41.The Manager
ACME Bhiwadi Solar Power Pvt. Ltd.,
Plot No. 152, Sector-44,
Gurugram, Haryana 122 003

42.The Manager,
ACME Hisar Solar Power Pvt. Ltd.,
Plot No. 152, Sector-44,
Gurugram, Haryana 122 003

43.The GM (Commercial)
NTPC Ananthapuramu Ultra Mega Solar park,
Southern Region Head Quarters,
NTPC Bhavan, Kavadiguda Main Road,
Secunderabad 500 080, Telangana

44.General Manager - Projects
Green Infra Renewable Energy Limited,
5th floor, Tower C, Building No.8, DLF Cyber city,
Gurugram, Haryana 22 002

45.Chief operating officer (Wind & Solar)
Mytrah Energy (India) Energy Pvt Ltd, 8001,
S NO 109 Q city, Nanakramguda, Gachibowli,
Hyderabad, Telangana -500032

46.The Assistant General Manager (Electrical)
Orange Sironj Wind Power Pvt Ltd, F-9,
1st Floor, Manish Plaza-1, Plot No 7,
MLU Sector-10, Dwarka, New Delhi- 110075

…..Respondents

Parties Present:
1. Shri Venkateshan M, SRLDC
2. Shri Sunil Kumar Jaiswal, SRLDC

ORDER

The Petitioner, Southern Regional Load Despatch Centre (hereinafter referred to as "SRLDC"), has filed the present petition under Section 28(4) of the Electricity Act, 2003 (hereinafter referred to as 'the Act') read with Regulations 6 and 29 of Central Electricity Regulatory Commission (Fees and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2015 (hereinafter referred to as the "Fees and Charges Regulations 2015") for approval of Performance Linked Incentive (hereinafter referred to as "PLI") for SRLDC for the financial year 2018-19 of the control period 1.4.2014 to 31.3.2019.

2. Brief facts of the case leading to filing of the petition and subsequent developments after the filing of the petition are as under:

(a) The Petitioner, Southern Region Load Despatch Centre (SRLDC), is a statutory body setup under Section 27 of the Act and performs functions specified in Section 28 of the Act. NLDC (National Load Despatch Centre) and RLDCs (Regional Load Despatch Centres) are operated by Power System Operation Corporation Limited (POSOCO) in accordance with Government of India, Ministry of Power's notification dated 27.9.2010.

(b) As per Regulation 29(1), 29(2) and 29 (3) of the Fees and Charges Regulations 2015, the recovery of performance linked incentive by NLDC and RLDCs shall be based on the achievement of Key Performance Indicators (KPIs) as specified in Appendix V of the Fees and Charges Regulations 2015 or other such parameters as specified by the Commission.

(c) As per Regulation 29(6) of the Fees and Charges Regulations 2015, RLDCs or NLDC are required to compute the KPIs on annual basis for the previous year ending 31st March and submit to the Commission for approval as per Appendix V and VI of the Fees and Charges Regulations.

(d) As per methodology specified in Appendix-V and VI of the Fees and Charges Regulations 2015, KPI score for SRLDC for the year 2018-19 ending 31.3.2019 has been submitted by the Petitioner as under:

Sl. No	Key Performance Indicators	Weightage	Previous Year (as allowed by CERC (2017-18)	Current Year (2018-19)
1	Interconnection Meter Error	10	10.00	10.000
2	Disturbance Measurement	10	10.00	10.000
3	Average processing time of shutdown request	10	10.00	10.000
4	Availability of SCADA system	10	10.00	10.000
5	Voltage Deviation Index (VDI)	10	10.00	10.000
6	Frequency Deviation Index (FDI)	10	10.00	10.000
7	Reporting of System Reliability	10	10.00	10.000
8	Availability of Website	10	10.00	10.000
9	Availability of Standby Supply	5	5.00	5.000
10	Variance of Capital expenditure	5	3.701	3.669
11	Variance of Non-Capital expenditure	5	4.897	5.00
12	Percentage of Certified Employee	5	5.00	5.00
	Total	**100**	98.599	98.669

(e) As per the methodology provided in the Regulation 29(5) of the RLDC Fees and Charges Regulations 2015, SRLDC is allowed to recover 7% of annual charges for

aggregate performance level of 90%. The incentive shall increase by 1% of annual charges for every 5% increase of performance level above 90%.

(f) Accordingly, as per the Petitioner, recovery of Performance Linked Incentive comes at 16.734% as in the following table (For 90-95% additional 1% and for 95% to 98.669% additional 0.734%) of the Annual charges for the year 2018-19:

	Score		
Slabs	>85%	90-95 %	95-98.599 %
% age Incentive (Slab wise)	7	1	0.734
As Per Order in 344/M/2018	15	1	0.734
Net Incentive as %age of Annual Charges	**16.734**		

3. Against the above background, the Petitioner has filed the present petition with the following prayers:

(a) Approve the proposed performance linked incentive based on the KPIs computed by SRLDC for the year ending 31.03.2019 given at para 5, the KPI score given at para 6 and PRP percentage of Annual Charges of the year 2018-19 as per para 8 of the petition.

(b) Allow the Applicant to recover the fund for PLI from the users for the year 2018-19 as approved by the Hon'ble Commission.

(c) *Pass such other order(s) as the Hon'ble Commission deems fit and appropriate in this case and in the interest of justice."*

4. The petition was heard on 25.2.2020 and notices were issued to the Respondents to file their replies. However, none of the Respondents filed reply. Vide Record of Proceedings of hearing dated 25.2.2020, the Petitioner was directed to submit the following on affidavit, by 16.3.2020:

(a) Detailed note on methodology followed by POSOCO as per DPE OM dated 3.8.2017, for yearly Performance Linked Incentive claimed/ recovered from users;

(b) As per above methodology, detailed calculations showing limiting amount as per DPE OM and its annexures, with audited actual data for 2014-18 period for Performance Linked Incentive; and

(c) Annual Reports/Financial Statements for the year 2018-19.

5. The Petitioner, vide affidavit dated 16.3.2020 has submitted the aforementioned information. Petitioner has submitted the PRP (performance related pay) as paid and PRP payable as per OM (office memorandum) dated 3.8.2017 of the Department of Public Enterprises, Government of India (DPE) for the FY 2016-17 and FY 2017-18. Further, Petitioner has submitted that POSOCO commenced functioning as a separate Schedule-A CPSE (Central Public Sector Enterprise) with effect from 03.01.2017. Prior to that, POSOCO was a wholly owned subsidiary of Powergrid Corporation of India Ltd. (in short, PGCIL). During the financial years 2014-15 and 2015-16, when POSOCO was a subsidiary of PGCIL, all the calculations of performance linked incentive/ performance related pay (PLI/PRP) and approvals thereof from the competent authority were being taken by PGCIL. As no calculation was made by POSOCO for PRP/PLI payment for these years, same is not available with POSOCO and is, therefore, not submitted. The Petitioner has submitted following figures of PLI/PRP for SRLDC:

SRLDC	2014-15	2015-16	2016-17	2017-18	Total
Maximum PRP payable as per DPE OM	-	-	236.23	503.62	
PLI actually disbursed/ paid to employees	99.14	160.66	202.5	486.15	948.44
PLI recovered from users	184.42	134.65	175.43	410.69	905.19

6. The petition was further heard on 29.5.2020. Vide Record of Proceedings of hearing dated 29.5.2020, the Petitioner was directed to submit copy of approval of Board of

POSOCO on PRP/PLI payments for each year (2014-15 to 2018-19) of the 2014-19 tariff period.

7. In compliance with directions vide RoP of hearing dated 29.05.2020. the Petitioner vide affidavit dated 26.6.2020 has submitted the copy of approval of Board of POSOCO on PRP/PLI payments.

Analysis and Decision

8. The present petition has been filed under Regulations 6 and 29 of the Fees and Charges Regulations 2015 for approval of Performance Linked Incentive for the financial year 2018-19. Regulations 6 and 29 of the Fees and Charges Regulations 2015 are extracted as under:

"6. Application for determination of fees and charges:

(1) The RLDCs and NLDC shall make application in the formats annexed as Appendix I to these regulations within 180 days from the date of notification of these Regulations, for determination of fees and charges for the control period, based on capital expenditure incurred and duly certified by the auditor as on 1.4.2014 and projected to be incurred during the control period based on the CAPEX and the REPEX.

(2) The application shall contain particulars such as source of funds, equipments proposed to be replaced, details of assets written off, and details of assets to be capitalized etc.

(3) Before making the application, the concerned RLDC or NLDC, as the case may be, shall serve a copy of the application on the users and submit proof of service along with the application. The concerned RLDC or NLDC shall also keep the complete application posted on its website till the disposal of its petition.

(4) The concerned RLDC or NLDC, as the case may be, shall within 7 days after making the application, publish a notice of the application in at least two daily newspapers, one in English language and one in Indian modern language, having circulation in each of the States or Union Territories where the users are situated, in the same language as of the daily newspaper in which the notice of the application is published, in the formats given in Appendix II to these regulations.

(5) The concerned RLDC or NLDC, as the case may be, shall be allowed the fees and charges by the Commission based on the capital expenditure incurred as on 1.4.2014

and projected to be incurred during control period on the basis of CAPEX and REPEX duly certified by the auditor in accordance with these Regulations:

Provided that the application shall contain details of underlying assumptions and justification for the capital expenditure incurred and the expenditure proposed to be incurred in accordance with the CAPEX and REPEX.

(6) If the application is inadequate in any respect as required under Appendix-I of these regulations, the application shall be returned to the concerned RLDC or NLDC for resubmission of the petition within one month after rectifying the deficiencies as may be pointed out by the staff of the Commission.

(7) If the information furnished in the petition is in accordance with the regulations and is adequate for carrying out prudence check of the claims made the Commission shall consider the suggestions and objections, if any, received from the respondents and any other person including the consumers or consumer associations. The Commission shall issue order determining the fees and charges order after hearing the petitioner, the respondents and any other person permitted by the Commission.

(8) During pendency of the application, the applicant shall continue to bill the users on the basis of fees and charges approved by the Commission during previous control period and applicable as on 31.3.2014, for the period starting from 1.4.2014 till approval of the Fees and Charges by the Commission, in accordance with these Regulations.

(9) After expiry of the control period, the applicant shall continue to bill the users on the basis of fees and charges approved by the Commission and applicable as on 31.3.2019 for the period starting from 1.4.2019 till approval of fees and charges under the applicable regulations."

"29. Performance linked incentive to RLDCs and NLDC:

(1) Recovery of incentive by the Regional Load Despatch Centre shall be based on the achievement of the Key Performance Indicators as specified in Appendix V or such other parameters as may be prescribed by the Commission.

(2) Each Regional Load Despatch Centre shall submit its actual performance against each of the key performance indicators to the Commission on annual basis as per the format specified in Appendix V.

(3) NLDC shall submit the details in regards to each Key Performance Indicator in the format specified in Appendix V along with the methodology for approval of the Commission.

(4) The Commission shall evaluate the overall performance of the RLDCs or NLDC, as the case may be, on the basis of weightage specified in Appendix V. The Commission, if required, may seek advice of the Central Electricity Authority for evaluation of the performance of system operator.

(5) The RLDCs or NLDC, as the case may be, shall be allowed to recover incentive of 7% of annual charges for aggregate performance level of 85% for three years commencing from 1.4.2014 and for aggregate performance level of 90% from

1.4.2017. The incentive shall increase by 1% of annual charges for every 5% increase of performance level above 90%: Provided that incentive shall be reduced by 1% of annual charges on prorata basis for the every 3% decrease in performance level below 85%.

(6) The RLDCs or NLDC, as the case may be, shall compute the Key Performance Indicators on annual basis for the previous year ending on 31st March and submit to the Commission along with petitions for approval of the Commission as per Appendix V and Appendix VI of these Regulations:

Provided that the key performance indicators of previous year ending on 31st March shall be considered to recover incentive on each year and shall be trued up at the end of the control period."

9. In light of the above provisions, we have considered the Petitioner's claim for PLI. The Petitioner has submitted that the Commission has notified the various performance indicators and their weightage for determination of fees and charges in the Fees and Charges Regulations 2015 and performance on these KPIs has been quantified to make it measurable. The Petitioner has submitted KPI-wise details which have been dealt with in the succeeding paragraphs.

KPI-1: Reporting of Inter-connection metering error:

10. The Petitioner has submitted that the meter readings are processed on weekly basis and an error could only be detected after processing the same and after going through the validation process. According to the Petitioner, RLDCs are reporting the meter errors on weekly basis and these are made available on websites as per the provisions in the Regulation. Therefore, the possible number of reports in a year is 52 which have been converted to percentage based on the actual reporting. Percentage performance has been proportionately converted to marks scored.

11. The total weightage given for this parameter is 10. The Petitioner has submitted performance-wise details as under:

Performance during financial year 2018-19 (In %) A* =	100
Marks scored (In proportion of the percentage performance above)	10
*Formula for performance calculation	[No. of weekly reports issued /52 (Total no. of Weeks)]*100

12. The Petitioner has submitted that as per Regulation 2.3.2 of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 (hereinafter referred to as the "Grid Code"), RLDCs are responsible for meter data processing. Accordingly, problems related to meters including those installed at inter-regional/ international tie points are reported by concerned RLDCs to the utilities for corrective action. It has submitted that as per Regulation 6.4.22 of the Grid Code, computations on metering data are to be made available to the regional entities for checking/ verifications for a period of 15 days. Accordingly, the data on inter-connection meter error is made available in public domain on regular basis for checking/ verifications of regional entities. This information on inter-connection meter error is published on the website (https://www.srldc.in/Weekly%20Sem%20Data%202018-19.aspx?yr=2018-19) on weekly basis.

13. We have considered the submission of the Petitioner. Since the Petitioner has complied with the provisions of Regulation 6.4.22 of the Grid Code, the claims of the Petitioner for weightage factor for reporting of inter-connection meter error is allowed for the purpose of incentive. As per Appendix VI of the Fees and Charges Regulations 2015, the weightage factor for reporting of inter-connection meter error is considered 10 out of 10.

KPI-2: Reporting of Grid Incidents and Grid Disturbance:

14. The Grid incidents and grid disturbances are reported by the RLDCs to NLDC on monthly basis. The same are then compiled and independently verified by National Load

Despatch Centre. Afterwards the same is reported to the Commission on monthly basis as a part of monthly operational report issued by National Load Despatch Centre in accordance to the Grid Code. As the reporting on grid incidents and grid disturbances are generated on monthly basis, target reports to be generated have been considered to be 12. Percentage performance has been measured based on the actual number of reports generated, which has been proportionately converted to marks scored.

15. The Petitioner has submitted that as against the total weightage of 10 for parameter reporting of grid incidents and grid disturbances, actual incidents of such events during the financial year 2018-19 are as under:

Grid Incidents and Grid Disturbances for financial year 2018-19			
Category	Count (Nos)	Recovery period (Hrs)	Loss of Energy (MUs)
GI-1	16	36:03:00	1.07
GI-2	5	11:18:00	0.00
GD-1	38	76:23:00	3.90
GD-2	0	0:00:00	0.00
GD-3	0	0:00:00	0.00
GD-4	0	0:00:00	0.00
GD-5	0	0:00:00	0.00
All	59	123:44:00	4.97

16. A copy of the report is also available on public domain on POSOCO website (https://posoco.in/reports/monthly-reports/monthly-reports-2018-19/). The details for the report as well as the relevant page numbers for the financial year 2018-19 are as follows:

Sl. No.	**Month**	**Date of Reporting**	**Concerned Page Numbers**
1	April 2018	23rd May 2018	Page 51 – 52
2	May 2018	22nd June 2018	Page 52
3	June 2018	23rd July 2018	Page 51
4	July 2018	23rd August 2018	Page 47
5	August 2018	23rd September 2018	Page 51
6	September 2018	23rd October 2018	Page 48
7	October 2018	22nd November 2018	Page 47

8	November 2018	21st December 2018	Page 49
9	December 2018	23rd January 2019	Page 49
10	January 2019	22nd February 2019	Page 49
11	February 2019	22nd March 2019	Page 48 – 49
12	March 2019	23rd April 2019	Page 50

17. The Petitioner has submitted performance-wise details as under:

Performance during financial year 2018-19 (In %) * =	100
Marks scored (In proportion of the percentage performance above)	10
***Formula for performance calculation :**	(No. of Monthly reports issued /12)*100

18. We have considered the submissions of the Petitioner. Perusal of the above reveals that the Petitioner is reporting incident of grid disturbance every month to the Commission. Accordingly, as per Appendix VI of the Fees and Charges Regulations 2015, the weightage factor for reporting of grid incidents and grid disturbance is considered 10 out of 10 and the claims of the Petitioner for weightage factor for reporting of grid incidents and grid disturbance is allowed for the purpose of incentive.

KPI-3: Average processing time of shut down request:

19. The Petitioner has submitted that the shutdown coordination process, uniform across all the RLDCs, has been discussed and approved at Regional Power Committee (RPC) level. Time allowed to NLDC for approval of shut-down requests is 26 Hours and RLDCs is 50 Hours (including NLDC Time). This methodology has been devised considering primarily the planned outages approved in the monthly Operation Coordination Committee (OCC) meetings of RPCs which are processed by RLDCs on D-3 basis (3-day ahead of actual day of outage) based on confirmation from the shutdown requesting agency and the then prevailing grid conditions. The procedure to streamline the process of transmission outage coordination between SLDCs, RLDCs, NLDC and RPCs and

Indenting Agencies was developed by NLDC in 2013 and approved in OCC forum of different regional power committees (RPCs). As per the approved process, RLDC approves the shutdown requests of inter-State transmission lines and NLDC approves the shutdown requests for inter-regional and all 765KV transmission lines. It may be noted that RLDCs after processing the shut down requests at regional level forward the list to NLDC for impact assessment at national level. After clearance from NLDC, the final list of cleared shut down requests is intimated by respective RLDCs to the requesting agencies on D-1 (i.e. one day ahead of the proposed date of outage). The NLDC procedure is adopted/ referred in approved Operating Procedure of Southern Region.

20. Therefore, SRLDC consults NLDC for approval of outage requests. Relevant extract of Operating procedure of Southern Region (section 4.2.2) is as under:

> *"e) The Detailed outage procedure will be as per NLDC "Procedure for Transmission Elements Outage Coordination" as amended from time to time enclosed at Annexure 20*

21. The relevant extracts of NLDC Outage Procedure is as under:

> ***"6. Procedure for approval of outage on D-3 basis***
>
> *6.1. Planned Outages which have been approved in the OCC meeting of a region shall be considered for approval by RLDCs/NLDC on D-3 basis. This practice is necessary to realize the seriousness and readiness of the agency which indented the outage request in the first place as it is observed that many outages are not availed as per the monthly scheduled. IN case the agency indenting the shutdown does not plant to avail the outage, RLDCs must be informed at least 3 days in advance.*
>
> *6.2. Request for outage which are approved by OCC must be sent by the owner of the transmission asset at least 3 days in advance to respective RLDC by 1000 hours. If an outage is to be availed on say 10th of the month, the indenting agency would forward such requests to the concerned RLDC on 7th of the month by 1000 hours.*
>
> *6.3. In case the owner is not availing the OCC approved outage, the same shall be intimate to the respective RLDC at least 3 days in advance.*
>
> *6.4. Any planned outage which is not approved in OCC shall not be considered.*

22. As per above outage procedure, shutdown processing time for NLDC/ RLDCs is as tabulated below:

Sl. No.	Activity	Day	Time (hrs.)
1	Request of shutdown from indenting agency to concerned RLDC.	D-3	1000
2	Forwarding request of shutdown requiring NLDC approval from RLDC to other concerned RLDCs and NLDC (along with the recommendations and study result)	D-2	1000
3	Comments of other RLDCs or NLDC	D-2	1600
4	Approval or Rejection of Request	D-1	1200

As per table above:
Shutdown Processing Time for NLDC is Calculated as: Sr. No (4) - Sr. No (2) = 26 hrs
Shutdown Processing Time for RLDC is Calculated as: Sr. No (4) - Sr. No (1) = 50 hrs

23. The total weightage for the parameter "average processing time of shut down request is 10. The Petitioner has submitted average processing time of shut down request during the financial year 2018-19 as under:

S.No.	Month	Total No of shutdown request in a month (B)	Total time (hrs) taken to approve the shutdown in a month(A)	Total time(hrs) taken to approve the shutdown in a month/Total No of shutdown requests in a month(C=A/B)
1	April'18	196.00	5866.00	29.93
2	May'18	231.00	6222.00	26.94
3	June'18	214.00	5751.00	26.87
4	July'18	232.00	6417.00	27.66
5	August'18	187.00	6324.00	33.82
6	September'18	169.00	5474.00	32.39
7	October'18	145.00	4869.00	33.58
8	November'18	158.00	5593.00	35.40
9	December'18	189.00	5916.00	31.30
10	January'19	196.00	6823.00	34.81
11	February'19	190.00	6210.00	32.68
12	March'19	120.00	3945.00	32.88
	Total	2227.00	69410.00	31.17

For SRLDC

Performance during the financial year 2018-19 (In %)	100
Marks scored (In proportion of the percentage performance above)	10
*Formula for performance calculation	IF((A-B*50)>0,(1-(A-B*50)/(B*50))*100,100)

24. We have considered the submission of the Petitioner. As per Appendix VI of the Fees and Charges Regulations 2015, weightage for average processing time of shut down request is considered as 10 out of 10 and the claim of the Petitioner for weightage factor for “Average processing time of shut down request” is allowed for the purpose of incentive.

KPI-4: Availability of SCADA:

25. SCADA systems installed in RLDCs and NLDC is a collection of software and hardware modules which provide essential functions like (i) real time data reporting from field; (ii) real time data exchange between various Load Despatch Centres; (iii) historical data archiving & retrieving; (iv) network analysis studies; (v) grid dispatcher training; (v) document management system; and (vi) MIS reporting.

26. SCADA system at NLDC acquires real time data from RLDCs through dedicated communication links either on communication network implemented through Unified Load Despatch & Communication Scheme (ULDC) or through POWERTEL’s communication network provided by the CTU.

27. Similarly, SCADA system at RLDC acquires real time data from Remote Terminal Unit (RTU)/ Sub-Station Automation System (SAS) for central sector stations and IPP stations installed in respective region through ULDC communication network (in case, link is not available, POWERTEL’s communication network is used). Real time data from the various SLDCs of the Region is fetched through ICCP protocol on dedicated communication links provided through ULDC network with redundancy and communication network under POWERTEL network of PGCIL.

28. Main reasons of outages of real-time data are listed below:

a. Failure of critical SCADA servers (hardware level)
b. Failure of critical SCADA applications (software level)
c. Communication failure

29. Critical infrastructure of SCADA is redundant at server and network level to ensure standby operation and availability in case of any contingency. In case, data at main control centre is not available, then Back-up control centre is utilized to visualize the real-time data.

30. SCADA systems are covered under long term maintenance contract by System Integrator/ OEM having financial implications in case of outages even in the component level. The System Integrator is required to attend the issues as per timelines defined in the maintenance contract, failing which a portion of the maintenance charges can be deducted as penalty measure. Records of all incidences are maintained along with resolution details. Measures for maintenance contract have been kept stringent so that it does not affect the overall SCADA system availability to the grid operators. The records for KPI are generated in line with above philosophy.

The methodology followed for calculation of SCADA system availability

31. Both Main and Back-up SCADA systems have two SCADA servers working in redundant mode with one of the servers in master role and the other in standby role. Consequently, services of SCADA system is considered available when at least one of the redundant servers is up. In the event of failure of both the SCADA servers at Main control centre (CC), monitoring of regional grid can be done through SCADA system of Back-up. Accordingly, for the purpose of computation of SCADA availability, the status of

main and standby SCADA servers at Main and Backup control centres is checked. If any one of the servers is working at any instant and real time SCADA data is available to the control room, SCADA system is considered to be available.

32. The SCADA system at Main and Back-up control centres is checked for healthiness on daily basis based on server logs and system alarms of SCADA system in hardware and software levels. Daily check on healthiness of SCADA system components such as servers, networks, and processes etc. is made by the System Integrator and kept in record.

Measurement & Computation of SCADA Availability

33. There are different levels of severities depending upon the criticality of the failures. Loss of SCADA system to control room is categorised as Severity 1. The severity matrix as per maintenance contract is given below:

Category	Definition
Severity 1 - Urgent	Complete system failure, severe system instability, loss or failure of any major subsystem or system component such as to cause a significant adverse impact to system availability, performance, or operational capability
Severity 2 - Serious	Degradation of services or critical functions such as to negatively impact system operation. Failure of any redundant system component such that the normal redundancy is lost Non-availability of System Integrator's Man-power at Control Centre during working hours, non-availability of spares
Severity 3 – Minor	Any other system defect, failure, or unexpected operation
Severity 4 - General/ Technical Help	Request for information, technical configuration assistance, "how to" guidance and enhancement requests

34. If due to any fault or malfunctioning, the real time grid operations get affected, downtime is recorded for the period for which the malfunctioning persisted. For example,

if both Main and Back-up servers of SCADA system are down and grid operators are not getting any data through SCADA system, the incident is considered with highest severity and contributes to unavailability.

35. As Communication networks are provided by ULDC/ POWERTEL/ third party lease lines, RLDC does not have direct control over the availability of each links. As such, data outage due to communication network is not considered under SCADA availability calculation.

36. The downtime for all such incidents reported in a month are accumulated to arrive at the total system downtime in that month based on the status of servers stored in SCADA database, month-wise %age availability in terms of hours & percentage is calculated. The same is compiled for computation of monthly/ quarterly availability of the SCADA system.

37. The downtime for all such incidents reported in a month are accumulated to arrive at the total system downtime in that month and month-wise percentage availability in terms of hours and percentage is calculated. Formula for monthly availability computation is as below:

Monthly system availability is computed as:
*% Monthly system availability = (THM -D)*100/THM*
Where,
THM = Total no. of hours in that Month
D = Downtime recorded in that Month (In hours)

38. The total weightage for this parameter is 10. The Petitioner has submitted percentage availability of 12 months (April 2018 to March 2019) as 100. The marks claimed by the Petitioner is as follows:

Performance during the financial year 2018-19*	**100**
Marks scored (in proportion of the percentage	**10**

performance above)	
* Average of 12 months	

39. We have considered the submission of the Petitioner. We have worked out the average of 12 months as 100. Accordingly, as per Appendix VI of the Fees and Charges Regulations 2015, the marks scored for availability of SCADA has been allowed as 10 out of 10.

KPI-5: Voltage Deviation Index:

40. The total weightage for the parameter Voltage Deviation Index (VDI) is 10. The Petitioner has submitted the details of VDI as under:

KPI-5: Voltage Deviation Index (VDI)				
Name of the Region: Southern Regional Load Despatch Centre				
S. No.	**Name of the 400/765 kV substation**	**Intimation to utilities through Daily reports for corrective action or not**	**Intimation to utilities through weekly reports for corrective action or not**	**Intimation to utilities through monthly reports for corrective action or not**
A	B	C	D	E
1	400 kV ARASUR	Yes	Yes	Yes
2	400 kV BIDADI	Yes	Yes	Yes
3	400 kV BHADRAVATHI	Yes	Yes	Yes
4	400 kV CUDDPAH	Yes	Yes	Yes
5	400 kV GAZUWAKA	Yes	Yes	Yes
6	400 kV GHANAPUR	Yes	Yes	Yes
7	400 kV GOOTY	Yes	Yes	Yes
8	400 kV HASAN	Yes	Yes	Yes
9	400 kV HIRIYUR	Yes	Yes	Yes
10	400 kV HOSUR	Yes	Yes	Yes
11	400 kV KAIGA	Yes	Yes	Yes
12	400 kV KARAIKUDI	Yes	Yes	Yes
13	400 kV KUDANKULAM	Yes	Yes	Yes
14	400 kV KHAMMAM	Yes	Yes	Yes
15	400 kV KALIVINDAPATTU	Yes	Yes	Yes
16	400 kV KOCHI	Yes	Yes	Yes
17	400 kV LANCO	Yes	Yes	Yes
18	400 kV MADURAI	Yes	Yes	Yes
19	400 kV MEPL	Yes	Yes	Yes

KPI-5: Voltage Deviation Index (VDI)				
Name of the Region: Southern Regional Load Despatch Centre				
20	400 kV MUNIRABAD	Yes	Yes	Yes
21	400 kV MYSORE	Yes	Yes	Yes
22	400 kV NELLORE	Yes	Yes	Yes
23	400 kV NELLORE PS	Yes	Yes	Yes
24	400 kV NYVELI ST2	Yes	Yes	Yes
25	400 kV NYVELI 1 EXP	Yes	Yes	Yes
26	400 kV NYVELI 2 EXP	Yes	Yes	Yes
27	400 kV NARENDRA	Yes	Yes	Yes
28	400 kV NAGARJUNASAGAR	Yes	Yes	Yes
29	400 kV NUNNA	Yes	Yes	Yes
30	400 kV PALAKKAD	Yes	Yes	Yes
31	400 kV PONDY	Yes	Yes	Yes
32	400 kV PUGULUR	Yes	Yes	Yes
33	400 kV RAMAGUNDAM	Yes	Yes	Yes
34	400 kV SALEM	Yes	Yes	Yes
35	400 kV SEPL	Yes	Yes	Yes
36	400 kV SIMHADRI ST2	Yes	Yes	Yes
37	400 kV SRIPERAMBUDUR	Yes	Yes	Yes
38	400 kV TALRC	Yes	Yes	Yes
39	400 kV TRICHUR	Yes	Yes	Yes
40	400 kV TRICHY	Yes	Yes	Yes
41	400 kV TIRUNELVELI	Yes	Yes	Yes
42	400 kV TRIVENDAM	Yes	Yes	Yes
43	400 kV UDUMALPET	Yes	Yes	Yes
44	400 kV VALLUR	Yes	Yes	Yes
45	400 kV WARANGAL	Yes	Yes	Yes
46	400 kV YELHANKA	Yes	Yes	Yes
47	400 kV MADAKADRA	Yes	Yes	Yes
48	400 kV ALAMATHY	Yes	Yes	Yes
49	400 kV METT	Yes	Yes	Yes
50	400 kV NCTPS ST2	Yes	Yes	Yes
51	400 kV SALEM TN	Yes	Yes	Yes
52	400 kV SRIPERAMBUDUR TN	Yes	Yes	Yes

KPI-5: Voltage Deviation Index (VDI)				
Name of the Region: Southern Regional Load Despatch Centre				
53	400 kV SVCHATRAM	Yes	Yes	Yes
54	400 kV BOOPALPALLY	Yes	Yes	Yes
55	400 kV CHITTOOR	Yes	Yes	Yes
56	400 kV DICHIPALLY	Yes	Yes	Yes
57	400 kV GAJWEL	Yes	Yes	Yes
58	400 kV GMR	Yes	Yes	Yes
59	400 kV GOUTHAMI	Yes	Yes	Yes
60	400 kV GVK	Yes	Yes	Yes
61	400 kV KONASEEMA	Yes	Yes	Yes
62	400 kV KONASEEMA	Yes	Yes	Yes
63	400 kV KTPS	Yes	Yes	Yes
64	400 kV MAHABOOBNAGAR	Yes	Yes	Yes
65	400 kV MALKARAM	Yes	Yes	Yes
66	400 kV MAMIDIPALLI	Yes	Yes	Yes
67	400 kV NARNOOR	Yes	Yes	Yes
68	400 kV NELLORE AP	Yes	Yes	Yes
69	400 kV SHANKARAPALLI	Yes	Yes	Yes
70	400 kV SIMHADRI ST1	Yes	Yes	Yes
71	400 kV SRISAILAM	Yes	Yes	Yes
72	400 kV VEMAGIRI	Yes	Yes	Yes
73	400 kV VTPS	Yes	Yes	Yes
74	400 kV VTSO2	Yes	Yes	Yes
75	400 kV KRISHNAPATNAM	Yes	Yes	Yes
76	400 kV BTPS	Yes	Yes	Yes
77	400 kV GUTTUR	Yes	Yes	Yes
78	400 kV HOODY	Yes	Yes	Yes
79	400 kV JINDAL	Yes	Yes	Yes
80	400 kV NEELAMANGALA	Yes	Yes	Yes
81	400 kV RTPS	Yes	Yes	Yes
82	400 kV TALAGUPPA	Yes	Yes	Yes
83	400 kV UPCL	Yes	Yes	Yes
84	400 kV TALAC	Yes	Yes	Yes
85	400 kV SOMANAHALLI	Yes	Yes	Yes

KPI-5: Voltage Deviation Index (VDI)				
Name of the Region: Southern Regional Load Despatch Centre				
86	400 kV COASTAL ENERGN	Yes	Yes	Yes
87	400 kV TPCIL	Yes	Yes	Yes
88	400 kV NTPL	Yes	Yes	Yes
89	400 kV TIRUVALLAM	Yes	Yes	Yes
90	400 kV KARNOOL	Yes	Yes	Yes
91	400 kV RAICHUR PG	Yes	Yes	Yes
92	400 kV SATTENAPALLI	Yes	Yes	Yes
93	400 kV KOLAR	Yes	Yes	Yes
94	400 kV TIRUVALLAM TN	Yes	Yes	Yes
95	400 kV KAYATHAR	Yes	Yes	Yes
96	400 kV TUTICORAN PS	Yes	Yes	Yes
97	400 kV ILFS	Yes	Yes	Yes
98	400 kV NIZAMBAD	Yes	Yes	Yes
99	400 kV SRIKAKULAM	Yes	Yes	Yes
100	400 kV NAGAPATANAM	Yes	Yes	Yes
101	400 kV YTPS	Yes	Yes	Yes
102	400 kV SEIL	Yes	Yes	Yes
103	400 kV IL&FS	Yes	Yes	Yes
104	400 kV NAGAPATANAM_PG	Yes	Yes	Yes
105	400 kV KUDGI_PG	Yes	Yes	Yes
106	400 kV KOZHIKODE	Yes	Yes	Yes
107	400 kV KUDGI	Yes	Yes	Yes
108	400 kV JAMMALAMADUGU	Yes	Yes	Yes
109	400 kV MADUGIRI	Yes	Yes	Yes
110	400 kV GMR	Yes	Yes	Yes
111	400 kV HINDUJA	Yes	Yes	Yes
112	400 kV NCC	Yes	Yes	Yes
113	400 kV SINGARENI	Yes	Yes	Yes
114	400 kV SURYAPET	Yes	Yes	Yes
115	400 kV NP KUNTA	Yes	Yes	Yes
116	400 kV URAVAKONDA	Yes	Yes	Yes
117	400 kV DHAR	Yes	Yes	Yes
118	400 kV KARAMADAI	Yes	Yes	Yes

KPI-5: Voltage Deviation Index (VDI)				
Name of the Region: Southern Regional Load Despatch Centre				
119	400 kV KAMUDHI	Yes	Yes	Yes
120	400 kV VEMAGIRI_PG	Yes	Yes	Yes
121	400 kV SRIKAKULAM_PG	Yes	Yes	Yes
122	400 kV KV KOTA	Yes	Yes	Yes
123	400 kV GHANI	Yes	Yes	Yes
124	400 kV KANARPATTI	Yes	Yes	Yes
125	400 kV NIZAMABAD	Yes	Yes	Yes
126	400 kV NARSAPUR	Yes	Yes	Yes
127	400 kV PALVADI	Yes	Yes	Yes
128	400 kV DINDI	Yes	Yes	Yes
129	400 kV RTPP	Yes	Yes	Yes
130	400 kV ASUPAKA	Yes	Yes	Yes
131	400 kV MAHESHWARAM_PG	Yes	Yes	Yes
132	400 kV MAHESHWARAM	Yes	Yes	Yes
133	400 kV PAVAGADA	Yes	Yes	Yes
134	400 kV MANALI	Yes	Yes	Yes
135	400 kV BELLARY PS	Yes	Yes	Yes
136	400 kV NNTPP	Yes	Yes	Yes
137	400 kV RASIPALYAM	Yes	Yes	Yes
138	400 kV ANNAIKAVADU	Yes	Yes	Yes
139	400 kV JAGURUPADU	Yes	Yes	Yes
140	400 kV SHOLINGANALLUR	Yes	Yes	Yes
141	400 kV KTPS 7	Yes	Yes	Yes
142	400 kV TTGS	Yes	Yes	Yes
143	765 kV NELLORE	Yes	Yes	Yes
144	765 kV KURNOOL	Yes	Yes	Yes
145	765 kV RAICHUR	Yes	Yes	Yes
146	765 kV TIRUVALLAM	Yes	Yes	Yes
147	765 kV NIZAMBAD	Yes	Yes	Yes
148	765 kV SRIKAKULAM	Yes	Yes	Yes

41. The Petitioner has submitted that VDI is calculated in line with the methodology specified in Appendix VI of CERC (Fees and Charges of Regional Load Despatch Centre

and other related matters) Regulations, 2015. Voltage deviation index of important substations is calculated on daily, weekly as well as monthly basis and same is intimated to utilities via daily, weekly and monthly reports. VDI for each important station is calculated as the percentage of time the voltage was outside the range specified in the Grid Code (380-420 kV at 400 kV level, 728-800 kV at 765 kV level). For this purpose, data recorded by SCADA is used. The percentage of samples lying outside the Grid Code specified range constitutes VDI for the station. A sample calculation is shown below:

Sub-Station	**%age of time Voltage below 728 / 380kV**	**%age of time Voltage between 728 /380 kV & 800/420kV**	**%age of time Voltage above 800/420kV**	**Voltage deviation index (%age of time voltage is outside IEGC band)**	**Maximum Voltage (kV)**	**Minimum Voltage (kV)**
Ghanapur	0.00%	69 %	31%	31 %	427	407

42. Accordingly, corrective actions are being taken in real-time grid conditions, by SRLDC. Apart from these, based on feedback from RLDCs, region-wise persistent high voltage and low voltage issues are being reported in 'NLDC Operational feedback' every quarter. As an example, the web link for NLDC operational feedback for the quarter Jul'18-Sept'18 quarter is https://posoco.in/download/nldc-operational-feedback_october_2018_q2-2/?wpdmdl=20373

43. Nodes in Southern Region experiencing low/ high voltage are listed on page no 142-149 of the above quarterly 'Operational Feedback'. This information is being discussed in meetings of the Standing Committee (SCM) on Power System Planning with all the stakeholders. Corrective action is also being discussed in Operation Coordination Committee (OCC) meetings of SRPC and minutes of these meetings are available in

SRPC website. SRLDC also uploads the information on Voltage Deviation Index (VDI) on its website on daily, weekly and monthly basis as a part of its Daily, Weekly and Monthly reports. The relevant web links are given under:

KPI-5 (VDI)	Web Link on SRLDC website	Remarks
Daily VDI	http://www.srldc.org/DailyReport.aspx	Select VDI drop down
Weekly VDI	http://www.srldc.org/WeeklyReport.aspx	Select VDI/FDI drop down
Monthly VDI	http://www.srldc.org/MonthlyReport.aspx	

44. The Petitioner has submitted that persistent problems of low/ high voltage are identified in the quarterly operational feedback submitted to CTU and CEA. The total weightage given for this parameter is 10. The Petitioner has submitted performance-wise details as under:

Performance during financial year 2018-19*	**100**
Marks scored (In proportion of the percentage performance above)	**10**
* Formula for performance calculation	[((No. of daily reports issued (to be derived from column C/365 (Total no. of days in financial year 2018-19)*100)+(No. of weekly reports issued (to be derived from column D)/ 52 (Total no. of weeks in financial year 2018-19)*100)+(No. of monthly reports issued (to be derived from column E/12)*100))]/3

45. The Petitioner has submitted that Clause 3.11 of the SRLDC Operating Procedure, 2017 provides the corrective actions to be taken in the event of high voltage and low voltage. The relevant extract of the Clause 3.11.1 of the SRLDC Operating Procedure, 2017 is extracted as under:

"3.11.1 High voltage
On observing the High voltage at sub-stations (e.g. 400 kV bus voltages going above 410 kV), the following specific steps would be taken by the respective grid substations/generating station in their own, unless specifically mentioned by SLRDC otherwise:

a) The bus reactors be switched in
b) The manually switchable capacitor banks be taken out

c) The switchable line/tertiary reactors are taken in.
*d) Optimize the filter banks at HVDC terminal. ****
e) All the generating units connected on bar shall absorb reactive power within capability limits of the respective generating units.
f) Operate synchronous condensers wherever available, for VAR absorption.
g) Operate hydro generators/gas turbines as synchronous condenser for VAR absorption wherever such facility is available.
h) Re-route the power flows between HVDC links to control voltage rise.
i) *Open one of the lightly loaded double circuit and single circuit lines in consultation with SRLDC, keeping in view the security of the balance network. Line Opening would be the Last Resort by SRLDC after receipt of message from the constituents. Details of measures taken needed to be communicated in the line opening request message. The request for line opening should be as per format enclosed at Annexure 12.*

3.11.2 Low voltage

On observing low voltage (e.g. 400 kV bus voltages going down below 390 kV), the following specific steps would be taken by the respective grid substations/generating station at their own, unless specifically mentioned by SRLDC otherwise:

a) Close the lines which were opened to control high voltage, in consultation with SRLDC.
b) The bus reactors be switched out.
c) The capacitor banks be switched in.
d) The switchable line/tertiary reactors are taken out.
*e) Optimize filter banks at HVDC terminal. ****
f) All the generating units shall generate reactive power within capability limits of the respective generating units.
g) Operate synchronous condensers wherever available, for VAR generation.
h) Operate hydro generators/gas turbines as synchronous condenser for VAR generation, wherever such facility is available.
i) Re-route the power flows between HVDC links to improve voltages."

46. The Petitioner has submitted that corrective actions are being taken in real time grid conditions by SRLDC. The Petitioner has submitted that apart from these, persistent high voltage and low voltage are being reported every quarter to the NLDC operational feedback.

47. We have considered the submission of the Petitioner. As per Appendix VI of the Fees and Charges Regulations 2015, the weightage for VDI is considered as 10 out of 10.

KPI-6: Frequency Deviation Index:

48. The Petitioner has submitted that Frequency Deviation Index (FDI) is calculated as the percentage of time frequency is outside band prescribed in the Grid Code. The total weightage for FDI is 10. The Petitioner has submitted month-wise details of FDI for the period from April 2018 to March 2019.

49. Ten second synchro-phasor data is used for the calculation of FDI. The percentage of samples lying below 49.90 Hz and above 50.05 Hz together constitutes FDI. The sample is shown below:

Date	Percentage of time frequency is			Freq. Deviation Index (FDI)	Average Frequency (Hz)
	<49.90 Hz	49.90 - 50.05 Hz	>50.05 Hz		
1.5.2018	1.98	78.74	19.28	21.26	50.00

50. The frequency deviation indices are being reported on daily basis for the critical nodes along with weekly and monthly reporting as per Regulations. The possible no. of reports which could be generated (365 for daily, 52 for weekly and 12 for monthly) has been converted to KPI scores based on the actual reporting. SRLDC uploads the information regarding FDI on its website on daily, weekly and monthly basis as a part of its daily, weekly and monthly reports for which the relevant web links are as under:

KPI-6 (FDI)	Web Link on SRLDC website	Remarks
Daily FDI	http://www.srldc.org/DailyReport.aspx	Select Frequency Graph
Weekly FDI	http://www.srldc.org/WeeklyReport.aspx	Select VDI/FDI drop down
Monthly FDI	http://www.srldc.org/MonthlyReport.aspx	

51. The weightage for this parameter i.e. reporting of frequency deviation index (FDI) is 10. The Petitioner has submitted that it has issued daily, weekly and monthly Reports for the months of April 2018 to March 2019.

Performance during financial year 2018-19*	**100**
Marks scored (In proportion of the percentage performance above)	**10**
*Formula for performance calculation	[((No. of daily reports issued /365(Total no. of days in financial year 2018-19))*100)+(No. of weekly reports issued/ 52 (Total no. of weeks in financial year 2018-19))*100)+(No. of monthly reports issued /12)*100))]/3

52. We have considered the submission of the Petitioner. Petitioner has provided FDI reports as per provisions of the Regulations. Accordingly, as per Appendix VI of the Fees and Charges Regulations 2015, weightage for FDI is allowed as 10 out of 10.

KPI-7: Reporting of System Reliability:

53. The Petitioner has submitted that deviation indices are being reported on daily basis for the critical nodes along with weekly and monthly reporting as per the Fees and Charges Regulations 2015. The Petitioner has submitted that the possible number of reports which could be generated (365 for daily, 52 for weekly and 12 for monthly) have been converted to KPI scores based on the actual reporting.

54. The weightage for this parameter i.e. Reporting of System Reliability (RSR) is 10. The Petitioner has submitted that it has reported (a) (N-1) violations; (b) ATC violations; and (c) Angle difference between important buses through daily, weekly and monthly reports for the months of April 2018 to March 2019. The Petitioner has submitted the following reports of system reliability:

(a) Reporting of (N-1) violations (To be reported to CERC)

X*	**100**
*Formula	[((No. of daily reports issued /365(Total no. of days in financial year 2018-19))*100)+(No. of weekly reports issued /52 (Total no. of weeks in financial year 2018-19))*100)+(No. of monthly reports issued /12)*100))]/3

(b) Reporting of ATC violations (To be reported to CERC)

Y*	**100**
*Formula	[((No. of daily reports issued /365(Total no. of days in FY 2018-19))*100)+(No. of weekly reports issued /52 (Total no. of weeks in FY 2018-19))*100)+(No. of monthly reports issued /12)*100))]/3

(c) Reporting of angle difference between important buses (to be reported to CERC)

Z*	**100**
*Formula	[((No. of daily reports issued 365(Total no. of days in FY 2018-19))*100)+(No. of weekly reports issued/52 (Total no. of weeks in FY 2018-19))*100)+(No. of monthly reports issued /12)*100))]/3

Performance during financial year 2018-19*=	**100**
Marks scored (In proportion of the percentage performance above)	**10**
*Formula	**(X+Y+Z)/3**

55. The Petitioner has submitted that violation of (N-1) and ATC in percentage of times in the inter-regional corridors and angle difference between important buses are being reported by SRLDC on daily, weekly and monthly basis on the following weblinks:

KPI-7	**Weblink on SRLDC website**	**Remarks**
Daily	http://www.srldc.org/DailyReport.aspx	Select Reliability Violation Report (Angular difference , ATC & N-1)
Weekly	http://www.srldc.org/WeeklyReport.aspx	
Monthly	http://www.srldc.org/MonthlyReport.aspx	Select Reliability Violation (Angular difference, ATC & N-1)

56. The Petitioner has placed on record the monthly reports (April 2018 to March 2019) indicating ATC and N-1 criteria violations and Angle difference between important buses.

57. The Petitioner has submitted that the score for KPI No-7 (Reporting of System Reliability) has come out to be 10 out of 10. We have considered the submission of the Petitioner. As per Appendix VI of the Fees and Charges Regulations 2015, weightage for reporting system reliability is allowed as 10 out of 10.

KPI-8: Availability of website:

58. In regard to the availability of websites the Petitioner has submitted the following:

(i)**Redundancy of ISPs & webservers:**

In order to maintain continuous availability of website, SRLDC maintains two websites (viz. srldc.org and srldc.in) which are identical to each other in all respects. The two websites are hosted from two different servers through two different internet service providers (ISP). Each ISP supports one of the two websites (srldc.org and srldc.in). The selection of two service providers has been done judiciously after scrutinizing their infrastructure up to SRLDC building. This ensures adequate redundancy necessary for uninterrupted access to SRLDC website.

(ii) **Checking the website availability:**

For evaluation of website availability, Each ISP availability is commercially linked to the quarterly payment through a service level agreement (SLA) mechanism. Further, each ISP link availability is verified from the firewall analyzer at SRLDC. Each website server generates its server logs, which automatically maintains the list of activities it performed. Thus, instances of server failure (if any) is captured through these server logs. These systems generated logs are used for calculation of monthly availability of SRLDC website. Depending upon the availability of website, month-wise %age availability has been calculated. Then, %age average availability of 12 months has been proportionately converted to marks scored.

59. The weightage for the parameter “availability of website” is 10. The Petitioner has submitted the details of percentage of availability of website for all 12 months (April 2018 to March 2019). The details of marks scored are as follows:

Performance during financial year 2018-19*	**100**
Marks scored (In proportion of the percentage performance above)	**10**
* Average of 12 months	

60. We have considered the submission of the Petitioner. The Petitioner has reported availability of website as 100%. Accordingly, the weightage for availability of website is allowed as 10 out of 10.

KPI-9: Availability of Standby power supply:

61. The Petitioner has submitted that power to all the critical infrastructures are supplied through redundant UPS system and battery system. Inputs to these UPS are being supplied either through incoming feeders or DG sets (in case of failure of main inputs). These auxiliary systems are also under AMC and are being checked/ tested on regular basis. The Petitioner has submitted that trial runs are carried out on weekly basis to check the DG set availability and daily records are being maintained at each of the locations. The Petitioner has submitted the month-wise percentage in line with the methodology of incentive calculation prescribed in Regulation 29(5) of the Fees and Charges Regulations 2015. The Petitioner has submitted that percentage performance has been proportionately converted to marks scored.

62. The Petitioner has submitted the details of percentage of availability of standby power supply for all 12 months (April 2018 to March 2019). The weightage for the parameter

"availability of standby power supply" is 5. The Petitioner has submitted availability of standby power supply as under:

Performance during financial year 2018-19*	**100**
Marks scored (In proportion of the percentage performance above)	**5**
* Average of 12 months	

63. We have considered the submission of the Petitioner. The Petitioner has claimed availability of standby power supply as 100%. Accordingly, weightage allowed for availability of standby power supply is 5 out of 5.

KPI-10: Variance of Capital expenditure:

64. The weightage for the parameter "Variance of capital expenditure" is 5. The Petitioner has submitted the details of Variance of Capital Expenditure as under:

(Rs.in lakh)

Capital Expenditure allowed by CERC (A)	Actual Expenditure incurred (B)	% Variation C= ABS (A-B)/A)*100
135.00	256.28	89.84
In column A, figures as per the RLDCs Fees and Charges orders by CERC for the control period 2014-19 have been considered. In Column B, value as per Balance Sheet of FY 2018-19 has been considered.		

65. The Petitioner has submitted that the amount considered in the column A above is for the control period 2014-19 as per the Fees and Charges Regulations 2015. The Petitioner has submitted that in Column B, value as per balance sheet for the year 2018-19 has been considered.

Performance during FY 2018-19*:	**73.39**
*** Formula**	**IF(C>10, 100-(C-10)/3,100)#**
Marks Scored (in proportion of the %age performance above)	3.669
* Average of 12 months	
# Up to 10% variation, performance is proposed to be considered 100% and for any	

additional 3% variation beyond initial 10%, performance shall be decrease by 1% in line with the methodology of the incentive calculation prescribed in Regulation 29(5) of the Fees and Charges Regulations 2015.

66. The Petitioner has submitted that figures indicated in the present petition have been considered as targets and the figure as per the balance sheet have been considered as actual performance. The Petitioner has submitted that upto 10% variation has been considered for claiming 100% performance and for any additional 3% variation beyond initial 10%, performance shall decrease by 1% in line with the methodology of the incentive calculation prescribed in the Regulation 29(5) of the Fees and Charges Regulations 2015. The Petitioner has submitted that percentage performance has been proportionately converted to marks scored.

67. We have considered the submission of the Petitioner. The weightage allowed for variance of capital expenditure as 3.669 out of 5.

KPI-11: Variance of Non-Capital expenditure:

68. The weightage for the parameter "variance of non-capital expenditure" is 5. The Petitioner has submitted the details of variance of non-capital expenditure as under:

(Rs.in lakh)

Non Capital Expenditure allowed by CERC (A)	Actual Expenditure incurred (B)	% Variation C= ABS(A-B)/A)*100
2676.06	2756.22	3.00
In the Non-Capital Expenditure, HR Expenses, O&M Expenses have been considered. In column A, figures as per the RLDCs Fees and Charges Orders by CERC for the control period 2014-19 and CERC order of Petition no. 344/MP/2018 Along with IA 26/2019, Dtd. 10.06.19 have been considered. In Column B, value as per Auditor Certificate for FY 2018-19 has been considered		

Performance during financial year 2018-19*	**100**

***Formula**	**IF(C>10,100-(C-10)/3,100)#**
Marks Scored (in proportion of the percentage performance above)	5
*Average of 12 months	
# Up to 10% variation, performance is proposed to be considered 100% and for any additional 3% variation beyond initial 10%, performance shall be decrease by 1% in line with the methodology of the incentive calculation prescribed in Regulation 29(5) of the RLDC Fees and Charges Regulations 2015.	

69. The Petitioner has submitted that for calculating the performance against KPI-11, the figures as per the RLDCs Fees and Charges Orders by CERC for the control period 2014-19 and CERC order in Petition no. 344/MP/2018 along with IA 26/2019, dated 10.06.19, have been considered as targets and the figures as per the Auditor Certificate have been taken as actual performance. Limit of up to 10% variation has been considered for claiming 100% performance and for any additional 3% variation beyond initial 10%, performance shall decrease by 1% in line with the methodology of the Incentive calculation prescribed in the Regulation 29(5) of the Fees and Charges Regulations 2015. Percentage performance has been proportionately converted to marks scored.

70. We have considered the submission of the Petitioner. Based on the percentage variance in the above table, the weightage for variance of non-capital expenditure is allowed as 5 out of 5.

KPI-12: Percentage of certified employees:

71. The Petitioner has submitted that the certification framework was introduced in 2011 based on recommendations of G.B. Pradhan Committee Report which called for "Introduction of a system of 'certification' of System Operators by an independent body such as the NPC/NPTI" and "Establishment of an Institute for training of system

operators. National Power Training Institute (NPTI) may be entrusted with the responsibility of training initially.

72. Accordingly, a framework was developed for system operators from the States and POSOCO for training and certification, with NPTI appointed as the certifying agency. The framework provides for Basic Level, Specialist Level and Management Level Courses. Till date, 7 (seven) Basic Level certification and 6 (six) specialist level certifications have been conducted (three on regulatory framework in power sector and two on power system reliability and one on power system logistics). The exams are held online on all-India basis. Basic Level Certification is a foundation level exam where all system operators in the country can appear, whereas, Specialist Level exams focus on a particular area of expertise. Validity of both certificates is three years, system operators are required to have at least one certificate still in its validity period to be qualified as certified. "Eligible" includes all executives who are in technical functions posted in the respective RLDC/ NLDC on the cut-off date (excluding HR, Finance, Legal, Company Secretariat, Executive Secretaries etc.). "No. of Employees Certified" is number of eligible employees who have at least one valid certificate (either basic level or specialist level) on the date specified.

73. The weightage for the parameter "percentage of certified employees" is 5. The Petitioner has submitted the details of percentage of certified employees as under:

No. of Employees for Certification as on 31.3.2019(A)	No. of Employees for Certification as on 31.3.2019(B)	Percentage of Employees Certified as on 31.3.2019 (C=B/A*100)
46	43	93.48

Performance during financial year 2018-19*	**100**
***Formula**	**IF [C<85,(100-(85-C)/3),100]#**
Marks Scored (in proportion of the %age performance above)	5.000
* Average of 12 months	
#Upto 85% certification, performance is proposed to be considered 100% and for certification below 85%, performance shall decrease by 1% for every 3 % decrease in the certification in line with the methodology of the Incentive calculation prescribed in the Regulation 29(5) of the RLDC Fees and Charges Regulations 2015	

74. As per the methodology of incentive specified in Regulation 29(5) of the Fees and Charges Regulations 2015, for certification up to 85%, performance would be considered 100% and for certification below 85%, performance would be decreased by 1% for every 3% decrease in the certification. Accordingly, the weightage for percentage of certified employees is considered as 5 out of 5.

Overall Achievement of KPIs:

75. The following KPIs are allowed as per the methodology specified in Appendix-V and VI of the Fees and Charges Regulations 2015:

Sl. No	**Key Performance Indicators**	**Weightage**	**Petitioner claimed for financial year 2018-19**	**Allowed**
1	Reporting of Interconnection meter error	**10**	10.00	10.00
2	Reporting of Grid Incidents and Grid Disturbance	**10**	10.00	10.00
3	Average processing time of shut down request	**10**	10.00	10.00
4	Availability of SCADA System	**10**	10.00	10.00
5	Voltage Deviation Index (VDI)	**10**	10.00	10.00
6	Frequency Deviation Index (FDI)	**10**	10.00	10.00
7	Reporting of System Reliability	**10**	10.00	10.00
8	Availability of Website	**10**	10.00	10.00
9	Availability of Standby Supply	**5**	5.00	5.00

10	Variance of Capital expenditure	**5**	3.669	3.669
11	Variance of Non Capital expenditure	**5**	5.000	5.000
12	Percentage of Certified Employee	**5**	5.000	5.000
	Total	100	98.669	98.669

Perusal of the above table reveals that the Petitioner has achieved 98.669% in Key Performance Indicators out of possible achievement of 100%.

76.The Commission, under sub-clause (1) of Regulation 21 of the Fees and Charges Regulations 2015 has allowed Performance Related Pay to be met from the incentive allowed in accordance with sub-clause (5) of Regulation 29 of the Fees and Charges Regulations 2015 that provides as follows:

> *"(5) The RLDCs or NLDC, as the case may be, shall be allowed to recover incentive of 7% of annual charges for aggregate performance level of 85% for three years commencing from 1.4.2014 and for aggregate performance level of 90% from 1.4.2017. The incentive shall increase by 1% of annual charges for every 5% increase of performance level above 90%: Provided that incentive shall be reduced by 1% of annual charges on pro rata basis for the every 3% decrease in performance level below 85%."*

77.The Commission, in its Order dated 10.06.2019 in Petition No. 344/MP/2018, has held as under:

> *"62. …….in exercise of provisions of "Power to Relax" under Regulation 35 of Fees and Charges Regulations, 2015 we hereby relax Regulation 29(5) of Fees and Charges Regulations, 2015 and direct that RLDCs or NLDC, as the case may be, shall be allowed to recover incentive of 15% of annual charges post implementation of pay revision w.e.f 1.1.2017 subject to ceiling as per DPE Guidelines in place of 7%, keeping other provisions of Regulation 29(5) same. In case of shortfall as per DPE Guideline, the balance amount shall be paid from the LDCD fund."*

78.In view of Regulation 29(5) of the Fees and Charges Regulations 2015 read with Order dated 10.06.2019 in Petition No. 344/MP/2018 and aggregate KPI level of 98.669%

for 2018-19, the Commission hereby allows the Petitioner to recover 16.734% of annual charges for the financial year 2018-19 to meet the Performance Related Pay for the financial year 2018-19 as detailed below:

Aggregate Performance Level	% of Annual charges
90%	15%
90%-95%	+1%
95% - 98.669%	+0.734 %
Total - 98.669%	Total - 16.734%

79.As provided in Regulation 21(1) of Fees and Charges Regulations 2015, the Commission directs that the Performance Related Pay be computed in accordance with DPE guidelines and shall be met from the incentive allowed above.

80.The Commission observes that Regulations 29(6) of the Fees and Charges Regulations 2015 provides as below:

> *"The RLDCs or NLDC, as the case may be, shall compute the Key Performance Indicators on annual basis for the previous year ending on 31st March and submit to the Commission along with petitions for approval of the Commission as per Appendix V and Appendix VI of these Regulations:*
> *Provided that the key performance indicators of previous year ending on 31st March shall be considered to recover incentive on each year and shall be trued up at the end of the control period."*

Accordingly, the Petitioner is directed to file true up petition for control period 2014-19 within three months of issue of this order, taking into account the amount recovered from users and actual pay-out to the employees.

81.We further observe that the Board approvals submitted by the Petitioner cover only the executives and supervisors for payment of PRP. However, as per the details submitted by Petitioner, it is observed that the Petitioner has disbursed PRP to workmen also. The Petitioner is, therefore, directed to submit appropriate Board approval for same with the true up petition.

82.The Petition No. 184/MP/2020 is disposed of in terms of the above.

sd/-	sd/-	sd/-
(Arun Goyal)	**(I. S. Jha)**	**(P.K. Pujari)**
Member	**Member**	**Chairperson**