

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 54/MP/2017**

**Coram:**

**Shri Gireesh B. Pradhan, Chairperson**

**Shri A.K. Singhal, Member**

**Shri A.S. Bakshi, Member**

**Dr. M.K. Iyer, Member**

**Date of Order : 31.07.2017**

**In the matter of**

Petition 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 2015-16 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,  
Power System Operation Corporation Ltd. (POSOCO),  
(A Govt. of India Enterprise),  
No 29, Race Course Cross Road,  
Bengaluru-560009

**..... Petitioner**

Vs

1. Andhra Pradesh Power Co-ordination Committee,  
4<sup>th</sup> Floor, Room No: 451, Vidyut Soudha,  
Khairatabad, Hyderabad-500 082
  
2. Power Company of Karnataka Ltd.  
KPTCL Building, Kaveri Bhavan,  
Bangalore - 560 009



3. Kerala State Electricity Board  
Vydyuthi Bhavanam,  
Pattom, Thiruvananthapuram - 695 004
4. TANGEDCO, 7th Floor, Eastern Wing  
NPKRR Maaligai, TNEB Ltd., 144,  
Anna Salai, Chennai - 600 002.
5. Electricity Department  
Government of Puducherry  
Puducherry 605001
6. Electricity Department,  
Division No: III, Curti,  
Ponda, Goa 403 401
7. Powergrid HVDC  
Powergrid Southern Regional Transmission System – II,  
Near RTO Driving Test Track  
Singanayakanhalli, Yelahanka, Bangalore – 560 064
8. Telangana Power Co-ordination Committee,  
4<sup>th</sup> Floor, Vidyut Soudha, Khairatabad,  
Hyderabad-500 082
9. Ramagundam STG I & II  
NTPC, RSTPS, Jyothi Nagar  
Dist. Karim Nagar
10. Ramaguntam STG III  
NTPC, RSTPS, Jyothi Nagar, Dist. Karim Nagar  
Telangana - 505 215
11. SIMHADRI STG II  
NTPC, Southern Region Head Quarters, II & V Floors,  
MCH Complex, R.P. Road Secunderabad, Telangana – 500003
12. NTPC, Talcher STG II  
Angul, Orissa – 7591011



13. Kudgi STPP NTPC, Southern Region Head Quarters,  
II & V Floors, MCH Complex,  
R.P. Road Secunderabad, Telangana – 500003
  
14. NLC TPS II STG I  
Neyveli Lignite Corpn. Ltd, Thermal Power Station II  
Neyveli 607 801, Tamil Nadu
  
15. NLC TPS II STG II  
Neyveli Lignite Corpn. Ltd  
Thermal Power Station II  
Neyveli 607 801, Tamil Nadu
  
16. NLC TPS I EXPANSION  
Neyveli Lignite Corpn. Ltd.  
Thermal Power Station I (Exp.)  
Neyveli 607 801, Tamil Nadu
  
17. NLC TPS II EXPANSION  
Neyveli Lignite Corpn. Ltd.  
Thermal Power Station II (Expn.)  
Neyveli 607 801, Tamil Nadu
  
18. MAPS  
Nuclear Power Corpn. Of India Ltd  
Madras Atomic Power Station  
Kalpakkam – 603 102, Tamil Nadu
  
19. KGS UNITS 1&2  
Nuclear Power Corpn. of India Ltd  
Kaiga Generating Station,  
Kaiga – 581 400, Karwar, Karnataka
  
20. KGS UNIT 3&4  
Nuclear Power Corpn. of India Ltd,  
Kaiga Generating Station, Kaiga – 581 400  
Karwar, Karnataka
  
21. Kudankulam Nuclear Power Project Unit-1,  
Nuclear Power Corporation of India Ltd.,  
Kudankulam Post, Radhapuram Taluk – 627106,  
Tamil Nadu



22. KNPP Unit-2 Kudankulam Nuclear Power Project,  
Nuclear Power Corporation of India Ltd.  
Kudankulam Post,  
Radhapuram Taluk – 627 106
23. NTPC Tamilnadu Energy Company Ltd.,  
Vallur Thermal Power Project,  
Vellivoyalchavadi Post, Poneri Taluck,  
Tiruvallur Dist, Chennai – 600 013, Tamil Nadu
24. NLC Tamilnadu Power Limited,  
2 \* 500MW JV Thermal Power Project,  
Harbour Estate,  
Tuticorin – 628 004, Tamilnadu
25. LANCO, Kondapalli St II  
LANCO Kondapalli Power Pvt. LTD,  
Kondapalli, Ibrahimpatnam Mandal,  
PIN 521 228 (Telangana)
26. LANCO Kondapalli St III  
LANCO Kondapalli Power Pvt. Ltd,  
Kondapalli, Ibrahimpatnam Mandal,  
PIN 521 228, Telangana
27. Meenakshi Energy Pvt Ltd.,  
NSL ICON, Plot No. 1, 2, 3, 4,  
H-No-8-2-684/2/A, 2nd Floor, Road No. 12,  
Banjara Hills, Hyderabad 500034, Telengana
28. Simhapuri Energy Ltd.,  
Madhucon Green lands, 6 – 3 – 866 / 2,  
3rd Floor, Begumpet,  
Hyderabad – 560016, Telengana
29. Coastel Energen Pvt Limited,  
7th Floor, Buhari Towers,  
No.4 Moores Road, Chennai – 600006, Tamil Nadu
30. Thermal Powertech Corporation India Ltd.,  
6-3-1090, A-Block, 5th Floor,  
T.S.R Towers, Raj Bhavan Road,  
Somajiguda,  
Hyderabad 500082



31. IL&FS Tamil Nadu Power Company Ltd,  
C. Pudhupettai (Post),  
Parangipettai (Via), Chidambaram (TK),  
Cuddalore 608502
32. SEMBCORP Gayatri Power Limited,  
TP Gudur Mandal,  
Nellore - 524344
33. POWERGRID ISTS,  
Southern Regional Transmission System – II,  
Near RTO Driving Test Track,  
Singanayakanhalli, Yelahanka,  
Bangalore – 560 064
34. Raichur Sholapur Transmission Company Limited,  
Patel Estates,  
S.V.Road,  
Jogeshwari (West),  
Mumbai 400102
35. Kudgi Transmission Ltd.,  
Building No 3, Second Floor,  
Sudeep Plaza, MLU Sector - 11,  
Pocket - 4, Dwarka,  
New Delhi – 110 075
36. Powergrid Vizag Transmission Ltd.,  
CM (TLC),  
Vizag 400kV SS, Sector 10,  
Ukkanaguram,  
Vishakapatnam 530032

.....**Respondents**

**For Petitioner:-** Shri Venkateshan. M, SRLDC

**For Respondents:-** None



## ORDER

The petitioner, Southern Regional Load Despatch Centre, has filed the present petition under Section 28 (4) of Electricity Act 2003 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 "Fees and charges Regulations") for approval of Performance Linked Incentive for Southern Regional Load Despatch Centre for the financial year 2015-16 during the control period 1.4.2014 to 31.3.2019.

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

(a) The petitioner, Southern Regional Load Despatch Centre (SRLDC) set up under Section 28 of the Electricity Act, 2003 performs functions specified in Section 28 of the Electricity Act, 2003 and the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010. NLDC and RLDCs are operated by Power System Operation Corporation Limited (POSOCO) w.e.f. 1.10.2016.

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



(c) As per Regulation 29 (6) of the Fees and Charges Regulations, NLDC and RLDCs are required to compute the KPIs on annual basis for the previous year ending 31<sup>st</sup> March and to 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 of the Fees and Charges Regulations, KPI score for SRLDC for the year 2015-16 has been computed as under:

Sl. No.	Key Performance Indicators	Weightage	Financial Year 2015-16
1	Reporting of Interconnection meter	10	10.00
2	Reporting of Grid Incidents and Grid	10	10.00
3	Average processing time of shut down	10	10.00
4	Availability of SCADA System	10	9.998
5	Voltage Deviation Index (VDI)	10	10.00
6	Frequency Deviation Index (FDI)	10	10.00
7	Reporting of System Reliability	10	7.778
8	Availability of Website	10	10.00
9	Availability of Standby Supply	5	5.00
10	Variance of Capital expenditure	5	5.00
11	Variance of Non Capital expenditure	5	5.00
12	Percentage of Certified Employee	5	5.00
	<b>Total</b>	<b>100</b>	<b>97.776</b>

(e) As per the methodology provided in the Regulation 29(5) of the Fees and Charges Regulations, SRLDC shall be allowed to recover 7% of annual charges for aggregate performance level of 85% for three years commencing from 1.4.2014. The incentive shall increase by 1% of annual charges for every 5% increase of performance level above 90%. Accordingly, recovery of Performance Linked Incentive comes at 8.555% (For the range of 85-90% of performance, an incentive of 7%, for the range of 90-95%, additional incentive of 1% and for the balance range of



95% to 97.776%, an additional incentive of 0.555%) of the Annual charges for the year 2015-16.

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 31.03.2016 given at para 5, the KPI score given at para 6 and PLI percentage of Annual Charges of the year 2015-16 as per para 7 above.
- (b) Allow the Applicant to recover incentive from the users for the year 2015-16 as approved by the Hon'ble Commission.
- (c) Pass such other order as the Hon'ble Commission deems fit and appropriate in this case and in the interest of justice.”

4. The matter was heard on 25.5.2017 and notices were issued to the respondents to file their replies. No reply has been filed by the respondent despite notice.

5. The present petition has been filed under Regulations 6 and 29 of the Fees and Charges Regulations for approval of PLI for the financial year 2014-15. Regulations 6 and 29 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, equipment 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.”

6. The Key Performance Indicators (KPIs) has been specified in Appendix V of the RLDC Fees and Charges Regulations. The Commission may also specify such other parameters.

7 In the light of above provisions, we have examined petitioner’s claim for PLI. The Petitioner has submitted that the Commission has notified KPIs and their weightage in



the Fees and Charges Regulations, and performance on these KPIs has been quantified to make it measurable. The petitioner has submitted the KPI-wise details in the petition:

**a) KPI-1: Reporting of Interconnection metering error**

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. RLDCs are reporting the meter errors on weekly basis. These are made available on web sites as per the recommendations in the Regulation. Hence the possible no. of reports in a year is 52 which has been converted to percentage based on the actual reporting. Percentage performance has been proportionately converted to marks scored.

**b) KPI - 2 Reporting of Grid Incidents and Grid Disturbance**

The Grid Incidents and Grid disturbances are compiled on monthly basis and the same is sent to NLDC for further compilation on National basis for further reporting to CERC on consolidated basis. As the reporting on Grid incidences and Grid disturbances is 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.

**c) KPI-3: Average processing time of shut down request (RLDC/NLDC)**

The shut down process, uniform across all the RLDCs, has been discussed and approved at RPC level. Time allowed to NLDC for approval of the shut-down



requests is 26 Hours and to RLDCs is 50 Hours (including NLDC Time). This methodology has been devised considering primarily the planned outages approved in the monthly 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 & then prevailing grid conditions. 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). As per the formula used for calculating KPI Score for this parameter, performance will be considered 100%, if the time taken for processing shut down requests is less than the prescribed time i.e. 26 Hours for NLDC and 50 Hours for RLDCs. If the time taken is more than the prescribed time, then the performance will come down in the same proportion e.g. if the time taken in processing the request is more than 5% of the prescribed time then the percentage performance will be 95%. Percentage performance has been proportionately converted to marks scored.

**d) KPI-4: Availability of SCADA, KPI-8: Availability of website & KPI 9- Availability of Standby Power Supply**

Month wise percentage availability has been calculated. Then, percentage average availability of 12 months has been proportionately converted to marks scored.



**e) KPI-5: Voltage Deviation Index (VDI), KPI-6: Frequency Deviation Index (FDI), KPI 7- Reporting of System Reliability**

The deviation indices are being reported on daily basis for the critical nodes along with weekly and monthly as per Regulation. The possible no. of reports which could be generated (365/366 for daily, 52 for weekly and 12 for monthly) has been converted to KPI scores based on the actual reporting.

**f) KPI 10: Variance of Capital expenditure, KPI 11: Variance of Non-Capital expenditure**

The figures (Capital and non-Capital) filed in the Fees and Charges Petitions for the control period 2014-19 have been considered as targets and the figures as per the balance sheet 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 RLDC Fees and Charges Regulations 2015. Percentage performance has been proportionately converted to marks scored.

**g) KPI 12: Percentage of certified employees**

The target percentage of the certification is 85% of the eligible candidate has been assumed for calculating the KPI score. The actual achievement has been calculated against the target and the same has been converted to the KPI score.



8. The parameter-wise submissions made by the petitioner have been examined and dealt with in the succeeding paragraphs.

**A. Inter-connection meter error (Parameter 1)**

9. The total weightage given for this parameter is 10. The petitioner has submitted the details as under:

Performance during FY 2015-16(In %) A*	100
Marks scored(In proportion of the %age performance above)	10
*Formula for performance calculation	( No. of weekly reports issued /52)*100

52 represents the total no. of weeks in a year

10. The petitioner has submitted that as per Regulation 2.3.2 of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 (Grid Code), RLDCs are responsible for meter data processing. Accordingly, problems related to meters including those installed at inter-regional/inter-national tie points are reported by RLDCs concerned to the utilities for corrective action. The petitioner 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. The petitioner has submitted that information regarding inter-connection meter error is published on SRLDC (Website i.e. <http://srlc.org/Weekly%20Sem%20Data%202015-16.aspx?yr=2015-16>). a weekly



basis. The petitioner has submitted that the discrepancy reports are discussed in detail in the different forum at RPC level.

11. We have considered the submission of the petitioner. Since, the petitioner has complied with the provisions of the 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.

**B. Reporting of grid incidents and grid disturbances (Parameter 2)**

12. The petitioner has submitted that as against the total weightage of 10 for parameter reporting of grid incidents and grid disturbance, actual incidents of such events during the financial year 2015-16 as under:-

<b>Grid Incidents and Grid Disturbance for FY 2015-16</b>			
Category	Count (Nos)	Recovery period	Loss of Energy(MUs)
GI-1	6	29:33	0.012
GI-2	45	102:06	0
GD-1	44	41:33	3.83
GD-2	Nil	Nil	Nil
GD-3	Nil	Nil	Nil
GD-4	Nil	Nil	Nil
GD-5	Nil	Nil	Nil
<b>All</b>	<b>96</b>	<b>172:72</b>	<b>3.84</b>

13. The petitioner has submitted performance-wise details as under:

Performance during FY 2015-16(In %) * =	100
Marks scored(In proportion of the %age performance above)	10
<b>*Formula for performance calculation :</b>	<b>( No. of monthly reports issued /12 ) *100</b>

12 represents the total no. of months in a year



14. The petitioner has submitted that the incidences of grid disturbance/ incidences are being reported by the Regional Load Despatch Centers to National Load Despatch Centre on a monthly basis which are thereafter compiled and are independently verified by National Load Despatch Centre and reported to the Commission on a monthly basis as a part of monthly operational report issued by National Load Despatch Centre in accordance with the provisions of the Grid Code. The petitioner has submitted the details of the report for the Financial Year 2015-16 as under:

Sl. No.	Month	Date of Reporting
1	April 2015	22 <sup>nd</sup> May 2015
2	May 2015	24 <sup>th</sup> June 2015
3	June 2015	23 <sup>rd</sup> July 2015
4	July 2015	21 <sup>st</sup> August 2015
5	August 2015	23 <sup>rd</sup> September 2015
6	September 2015	21 <sup>st</sup> October 2015
7	October 2015	23 <sup>rd</sup> November 2015
8	November 2015	23 <sup>rd</sup> December 2015
9	December 2015	23 <sup>rd</sup> January 2016
10	January 2016	22 <sup>nd</sup> February 2016
11	February 2016	23 <sup>rd</sup> March 2016
12	March 2016	22 <sup>nd</sup> April 2016

15. We have considered the submissions of the petitioner. Perusal of the above reveals that the petitioner is reporting incident of grid disturbance each month to the Commission. As per our direction, the petitioner has placed on record the details of reporting to the Commission. Accordingly, the claims of the petitioner for weightage factor for reporting of grid incidents and grid disturbance is allowed for the purpose of incentive.





**C. Average processing time of shut down request (Parameter 3)**

16. 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 2015-16 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 2015	10	83.00	8
2	May 2015	12	25.50	2
3	June 2015	32	147.50	5
4	July 2015	43	76.00	2
5	August 2015	22	45.00	2
6	September 2015	24	110.20	5
7	October 2015	28	119.00	4
8	November 2015	9	54.00	6
9	December 2015	40	499.00	12
10	January 2016	41	86.50	2
11	February 2016	46	208.50	5
12	March 2016	76	563.23	7
		383	2017.43	5

Figures under column 'A' represents cumulative hours monthwise.

17. The petitioner has further submitted that the total time allowed to NLDC and RLDC for approval of the shutdown requests are 26 hours and 50 (Including NLDC Time) Hours respectively.

**For SRLDC**

Performance during FY 2015-16(In %)	100
Marks scored (In proportion of the %age performance above)	10
* Formula for performance calculation	IF((A-B*50)>0,(1-(A-B*50)/(B*50))*100,100)



18. The petitioner has submitted that the procedure to streamline the process of transmission outage coordination between SLDCs, RLDCs, NLDC, RPCs and Indenting Agencies was developed by NLDC in 2015 and approved in OCC fora. As per the approved process, RLDC approves the shutdown requests of inter-State transmission lines and NLDC approves the shut down requests for inter-regional and all 765 KV transmission lines. Therefore, RLDC consults NLDC for approval of outage requests.

Relevant extracts of NRPC approved procedure is as under:

“7.1. Request for outages which are approved by OCC must be sent by the indenting agency of the transmission asset at least 3 days in advance to respective RLDC by 1000 hours as per Format II.(For example, 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.)

7.3. Approval of Outage where Approving Authority is NLDC:

7.3.1. NRLDC shall forward the request for shutdown along with their consent and observation as per Format-III to NLDC/other concerned RLDCs with clear observations regarding possible constraints / contingency plan and consent including study results by 1000 hours of D-2 day. Other concerned RLDCs would forward their observations/ consent/reservations by 1600 hours of D-2.

7.3.2. NLDC shall approve the outage along with the clear precautions/measures to be observed during the shutdown and inform all concerned RLDCs.

7.3.3. The proposed outages shall be reviewed on day ahead basis depending upon the system conditions and the outages shall be approved/refused latest by 1200 Hrs of D-1 day. A suggested format for approval/refusal of outage is enclosed as Format IV.”

19. The petitioner has submitted that as per the above procedure, total time allowed for approval of the shutdown requests to RLDCs including NLDC is 50 hours (1000 hrs of D-3 to 1200 hrs of D-1). Out of these 50 hours, time allowed to NLDC is 26 hours (1000 hrs of D-2 to 1200 hrs of D-1).

20. We have considered the submission of the petitioner. Accordingly, weightage for average processing time of shut down request is considered as 10 out of 10.



**D. Availability of SCADA (Parameter 4)**

21. The total weightage for this parameter is 10. The petitioner has submitted average processing time of shut down requests during the financial year 2015-16 as under:-

S.No.	Month	% Availability
1	April, 2015	100.00
2	May ,2015	100.00
3	June, 2015	100.00
4	July, 2015	100.00
5	August, 2015	100.00
6	September, 2015	100.00
7	October, 2015	99.73
8	November, 2015	100.00
9	December, 2015	100.00
10	January, 2016	100.00
11	February, 2016	100.00
12	March ,2016	100.00
	<b>Average of 12 months</b>	<b>99.978</b>

Performance during FY 2015-16*	<b>99.978</b>
Marks scored (In proportion of the %age performance above)	<b>9.998</b>
* Average of 12 months	

22. We have considered the submission of the petitioner. We have worked out the average of 12 months as  $(100+100+100+100+100+100+99.97+100+100+100+100+100)/12=99.978$ . Accordingly, the marks scored for availability of SCADA has been allowed as 10 out of 10.



**E. Voltage Deviation Index (Parameter 5)**

23. The total weightage for the parameter Voltage Deviation Index (VDI) is 10. The petitioner has submitted Voltage Deviation Index (VDI) as under:-

<b>Name of the Region: SRLDC</b>				
<b>S. No.</b>	<b>Name of the 400/765 kV SS</b>	<b>Intimation to utilities through Daily reports for corrective action or not</b>	<b>Intimation to utilities through weekly reports for corrective action or not</b>	<b>Intimation to utilities through monthly reports for corrective action or not</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
1	April, 2015	Yes	Yes	Yes
2	May, 2015	Yes	Yes	Yes
3	June, 2015	Yes	Yes	Yes
4	July, 2015	Yes	Yes	Yes
5	August, 2015	Yes	Yes	Yes
6	September, 2015	Yes	Yes	Yes
7	October, 2015	Yes	Yes	Yes
8	November, 2015	Yes	Yes	Yes
9	December, 2015	Yes	Yes	Yes
10	January, 2016	Yes	Yes	Yes
11	February, 2016	Yes	Yes	Yes
12	March, 2016	Yes	Yes	Yes

VDI of important stations which experience high or low voltages and are critical to grid security has been indicated.

24. According to the petitioner, VDIs of important sub-stations are being calculated and reported on daily basis and is also being hosted on websites by RLDCs which is thereafter compiled at NLDC and circulated internally. Similarly, RLDCs are also calculating and reporting VDI on their websites as part of weekly reports. The petitioner



has submitted that NLDC independently calculates and reports VDIs of important sub-station on a monthly basis which is available on website as part of monthly report.

25. The petitioner has submitted that persistent problems of low/high voltage are identified in the quarterly operational feedback submitted to CTU and CEA.

Performance during FY 2015-16*	<b>100</b>
Marks scored (In proportion of the %age performance above)	<b>10</b>
* Formula for performance calculation	(( No. of daily reports issued (to be derived from column C/366(Total no.of days in FY 2015-16))*100)+(No.of weekly reports issued(to be derived from column D)/ 52 (Total no. of weeks in FY 2015-16))*100)+( No. of monthly reports issued (to be derived from column E/12)*100))/3

26. The petitioner has submitted that Clause 2.2.4.6 of the NLDC Operating Procedure, 2015 provides the corrective actions to be taken in the event of voltage going high and low. The relevant extract of the Clause 2.2.4.6 of the NLDC Operating Procedure, 2015 is extracted as under:

“2.2.4.6. The following corrective measures shall be taken in the event of voltage going high / low:-

- i) In the event of high voltage (when the bus voltage going above 410 kV), following specific steps would be taken by the respective grid substation/generating station at their own, unless specifically mentioned by NLDC/RLDC/SLDCs.
  - a The bus reactor is switched in
  - b. The manually switchable capacitor banks is taken out
  - c. The switchable line/tertiary reactor or convertible line reactor ( if the line kept open for High voltage) wherever possible are taken in. Optimize the filter banks at HVDC terminal



- e. All the generating units on bar shall absorb reactive power within the capability curve
  - f. Operate synchronous condensers wherever available for VAR absorption
  - g. Operate hydro generator/gas turbine as synchronous condenser for VAR absorption wherever such facilities are available
  - h. Bring down power flow on HVDC terminals so that loading on parallel EHVAC network goes up, resulting in drop in voltage.
  - i. Open lightly loaded lines in consultation with RLDC/SLDC for ensuring security of the balanced network. To the extent possible, it must be ensured that no loop of transmission lines is broken due to opening of lines to control the high voltage.
- ii) In the event of low voltage (when the bus voltage going down below 390kV), following specific steps would be taken by the respective grid substation/generating station at their own, unless specifically mentioned by NLDC/RLDC/SLDCs.
- a. Close the lines which were opened to control high voltage in consultation with RLDC/SLDC.
  - b. The bus reactor is switched out
  - c. The manually switchable capacitor banks are switched in.
  - d. The switchable line/tertiary reactor are taken out
  - e. Optimize the filter banks at HVDC terminal
  - f. All the generating units on bar shall generate reactive power within capability curve.
  - g. Operate synchronous condenser for VAR generation
  - h. Operate hydro generator/gas turbine as synchronous condenser for VAR generation wherever such facilities are available
  - i. Increase power flow on HVDC terminals so that loading on parallel Extra High Voltage (EHV) network goes down resulting in rise in voltage.”



27. The petitioner has submitted that corrective actions are being taken in Real Time Grid Conditions, by NLDC at 765 kV and Inter-regional level by opening /closing shunt reactors, transmission lines, etc. and by RLDCs for other Inter-State system. The petitioner has submitted that for voltage deviations taking place in/resulting from intra State system, RLDCs write regularly to the constituents and also discuss in the OCC meetings. The petitioner has placed on the record the extracts from OCC meeting of RPCs, sample letters from RLDCs stating sustained voltage deviation and suggested corrective actions. The petitioner has submitted that apart from these, persistent high voltage and low voltage are being reported in the NLDC operational feedback every quarter. Link for NLDC operational feedback for the quarter July 2015 to September 2015 quarter is [http://posoco.in/download/nldc-operational-Feedback\\_october\\_2015\\_q2/?wpdmdl=7214](http://posoco.in/download/nldc-operational-Feedback_october_2015_q2/?wpdmdl=7214). According to the petitioner, nodes experiencing low/high voltage are listed on page Nos. 29-30 of operational feedback and this information was discussed in Standing Committee on Power System Planning of different regions with all the stakeholders. The petitioner has submitted that corrective actions are also discussed in Standing Committee Meetings and OCC Meetings.

28. We have gone through the submission of the petitioner. As per Regulation 29 (6) of the Fees and Charges Regulations, RLDCs or NLDC are required to compute the Key Performance Indicators on annual basis for the previous year ending on 31st March and are required to submit the same to the Commission for approval. As per petitioner's submission, *VDIs of important sub-stations are being calculated and reported on daily basis*, however it is noted that important stations which experience high or low voltages



and are critical to grid security have not been indicated. Accordingly, for the time being, Commission is not inclined to consider this KPI for working out the total weightage. Petitioner is directed to furnish the complete information corresponding to the parameter-5 i.e. Voltage Deviation Index at the time of filing petition for true up.

**F. Frequency Deviation Index (Parameter 6)**

29. The total weightage for the parameter Frequency Deviation Index (FDI) is 10.

The petitioner has submitted FDI during 2015-16 as under:-

S.No.	Month	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
1	April, 2015	Yes	Yes	Yes
2	May, 2015	Yes	Yes	Yes
3	June, 2015	Yes	Yes	Yes
4	July, 2015	Yes	Yes	Yes
5	August, 2015	Yes	Yes	Yes
6	September, 2015	Yes	Yes	Yes
7	October, 2015	Yes	Yes	Yes
8	November, 2015	Yes	Yes	Yes
9	December, 2015	Yes	Yes	Yes
10	January, 2016	Yes	Yes	Yes
11	February, 2016	Yes	Yes	Yes
12	March, 2016	Yes	Yes	Yes

Performance during FY 2015-16*	<b>100</b>
Marks scored (In proportion of the %age performance above)	<b>10</b>
* Formula for performance calculation	(( No. of daily reports issued (to be derived from column C/366(Total no. of days in FY 2015-16))*100)+(No. of weekly reports issued(to be derived from column D)/ 52 (Total no. of weeks in FY 2015-16))*100)+( No. of monthly reports issued (to be derived from column E/12)*100))/3





30. We have considered the submission of the petitioner. FDIs submitted by the petitioner are found to be in order. Accordingly, weightage for FDI has been allowed as 10 out of 10.

**G. Reporting of System Reliability (Parameter 7)**

31. The total weightage for this parameter Reporting of System Reliability (RSR) is 10. The petitioner has submitted the following report of system reliability:

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

S.No.	Month	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	April, 2015	Yes#	Yes	Yes
2	May, 2015	Yes#	Yes	Yes
3	June, 2015	Yes#	Yes	Yes
4	July, 2015	Yes#	Yes	Yes
5	August, 2015	Yes#	Yes	Yes
6	September, 2015	Yes#	Yes	Yes
7	October, 2015	Yes#	Yes	Yes
8	November, 2015	Yes#	Yes	Yes
9	December, 2015	Yes#	Yes	Yes
10	January, 2016	Yes#	Yes	Yes
11	February, 2016	Yes#	Yes	Yes
12	March, 2016	Yes#	Yes	Yes

# Event based action.

X*	<b>100</b>
*Formula	(( No. of daily reports issued (to be derived from column C/366(Total no. of days in FY 2015-16))*100)+(No. of weekly reports issued(to be derived from column D) /52 (Total no. of weeks in FY 2015-16))*100)+( No. of monthly reports issued (to be derived from column E/12)*100))/3



(b) Reporting of ATC violations (To be reported to the Commission)

S.No.	Month	Intimation to utilities through 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	April, 2015	Yes#	Yes	Yes
2	May, 2015	Yes#	Yes	Yes
3	June, 2015	Yes#	Yes	Yes
4	July, 2015	Yes#	Yes	Yes
5	August, 2015	Yes#	Yes	Yes
6	September, 2015	Yes#	Yes	Yes
7	October, 2015	Yes#	Yes	Yes
8	November, 2015	Yes#	Yes	Yes
9	December, 2015	Yes#	Yes	Yes
10	January, 2016	Yes#	Yes	Yes
11	February, 2016	Yes#	Yes	Yes
12	March, 2016	Yes#	Yes	Yes

# Event based action is taken on TTC/ATC

Y*	<b>100</b>
*Formula	$\left( \left( \text{No. of daily reports issued (to be derived from column C)} / 366 (\text{Total no. of days in FY 2015-16}) \right) * 100 \right) + \left( \text{No. of weekly reports issued (to be derived from column D)} / 52 (\text{Total no. of weeks in FY 2015-16}) \right) * 100 + \left( \text{No. of monthly reports issued (to be derived from column E)} / 12 \right) * 100 \Big/ 3$

(c) Reporting of Angle difference between important buses (To be reported to the Commission)

S.No.	Month	Intimation to utilities through 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	April, 2015	Yes	No	No
2	May, 2015	Yes	No	No
3	June, 2015	Yes	No	No
4	July, 2015	Yes	No	No
5	August, 2015	Yes	No	No
6	September, 2015	Yes	No	No



7	October, 2015	Yes	No	No
8	November, 2015	Yes	No	No
9	December, 2015	Yes	No	No
10	January, 2016	Yes	No	No
11	February, 2016	Yes	No	No
12	March, 2016	Yes	No	No

Z*	<b>33.33</b>
*Formula	(( No. of daily reports issued (to be derived from column C/366(Total no. of days in FY 2015-16))*100)+(No. of weekly reports issued(to be derived from column D) 52 (Total no. of weeks in FY 2015-16))*100)+( No. of monthly reports issued (to be derived from column E/12)*100))/3

Performance during FY 2015-16*=	<b>77.78</b>
Marks scored (In proportion of the %age performance above)	<b>7.78</b>
*Formula	<b>(X+Y+Z)/3</b>

32. The petitioner has submitted that the score for KPI No-7 (Reporting of System Reliability) has come out to be 7.78 out of 10. We have considered the submission of the petitioner. Accordingly, weightage claimed for reporting system reliability is allowed as 7.78 out of 10.

#### **H. Availability of website (Parameter 8)**

33. The total weightage for the parameter “availability of website” is 10. The petitioner has submitted the percentage of availability of website as under:-

<b>S.No.</b>	<b>Month</b>	<b>% Availability</b>
1	April, 2015	100
2	May, 2015	100
3	June, 2015	100



4	July, 2015	100
5	August, 2015	100
6	September, 2015	100
7	October, 2015	100
8	November, 2015	100
9	December, 2015	100
10	January, 2016	100
11	February, 2016	100
12	March, 2016	100

Performance during FY 2015-16*	<b>100</b>
Marks scored (In proportion of the %age performance above)	<b>10</b>
* Average of 12 months	

34. We have considered the submission of the petitioner. It is observed that the petitioner is reporting availability of website on monthly basis without any interruption. Accordingly, the weightage claimed for availability of website is allowed as 10 out of 10.

**I. Availability of Standby power supply (Parameter 9)**

35. The total weightage for the parameter “availability of standby power” is 5. The petitioner has submitted availability of standby power supply as under:

Performance during FY 2015-16*	<b>100</b>
Marks scored (In proportion of the %age performance above)	<b>5</b>
* Average of 12 months	

36. The petitioner has submitted that availability of backup power supply depends on the sub systems, namely (i) Availability of UPS/Battery backup, and (ii) Availability of



DG set. According to the petitioner, in case main power supply fails and the system does not get any power supply, the duration shall be considered as back supply failure.

37. We have considered the submission of the petitioner. The petitioner has claimed that there has been no failure in availability of standby power supply. Accordingly, weightage claimed for availability of Standby power supply is considered as 5 out of 5.

**J Variance of Capital expenditure (Parameter 10)**

38. The total weightage for the parameter “Variance of capital expenditure” is 5. The petitioner has submitted the details of Variance of Capital Expenditure as under:

(₹in lakhs)

Capital Expenditure allowed by CERC (A)	Actual Expenditure incurred (B)	% Variation C= ((A-B)/A)*100
2070.05	1936.83	6.44

39. The petitioner has submitted that the amount considered in the column A above is as per the Fees and Charges Regulations for the control period 2014-19. The petitioner has submitted that in Column B, value as per balance sheet for the year 2015-16 has been considered.

Performance during FY 2015-16*	<b>100</b>
<b>*Formula</b>	<b>IF(C&gt;10,100-(C-10)/3,100)#</b>
Marks Scored (in proportion of the %age performance above)	5
<b>*Average of 12 months</b>	
# 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 the regulation 29(5) of the RLDC Fees and Charges Regulations, 2015.	



40. The petitioner has submitted that limit of 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. The petitioner has submitted that the intent of the formula is that 10%variation limit for claiming 100% performance is on both sides i.e. positive and negative. Similarly, for variation of more than 10%, performance would vary in the same manner whether the variation in CAPEX utilization is positive or negative. Therefore, value of variation should be absolute value only. Accordingly, formula for percentage variation can be read as “Percentage Variation  $C=ABS ((A-B)/A)*100$ ”.

41. We have considered the submission of the petitioner. The actual expenditure considered by us does not include CWIP. The weightage claimed for variance of capital expenditure is provisionally considered as 4.65 out of 5.

**K Variance of Non-Capital expenditure (Parameter 11)**

42. The total 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:

(₹ in lakhs)

Non Capital Expenditure allowed by CERC (A)	Actual Expenditure incurred (B)	% Variation $C= ((A-B)/A)*100$
18.27	19.87	8.73
In the Non-Capital Expenditure, HR Expenses, O&M Expenses and Depreciation have been considered. In column A, figures as per the RLDCs fees& Charges petitions filed with CERC for the control period 2014-19 have been considered. In column B, value as per Balance sheet of FY 2015-16 has been considered.		



Performance during FY 2015-16*	<b>100</b>
<b>*Formula</b>	<b>IF(C&gt;10,100-(C-10)/3,100)#</b>
Marks Scored (in proportion of the %age 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 decrease by 1% in line with the methodology of the incentive calculation prescribed in the regulation 29(5) of the RLDC Fees and Charges Regulations, 2015.	

43. We have considered the submission of the petitioner. The weightage claimed for variance of non-capital expenditure is allowed as 5 out of 5.

#### **L Percentage of certified employees (Parameter 12)**

44. The total weightage for the parameter “variance of percentage of certified employees” is 5. The petitioner has submitted the details of variance of percentage of certified employees as under:

No. of Employees for Certification as on 31.03.2016 (A)	No. of Employees for Certification as on 31.03.2016 (B)	%age of Employees Certified as on 31.3.2016 (C=B/A*100)
47	40	85.11

Performance during FY 2015-16*	<b>100</b>
<b>*Formula</b>	<b>IF(C&lt;85,(100-(85-C)/3),100)#</b>
Marks Scored (in proportion of the %age performance above)	5
*Average of 12 months	
# Up to 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.	



45. We have considered the submission of the petitioner. As per methodology of the incentive specified in Regulation 29 (5) of the Fees and Charges Regulations, for certification upto 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 as per Appendix VI of the Fees and Charges Regulations.

46. We have considered the submission of the petitioner with regard to KPI. The Key Performance Indicators allowed as per the Assessment Table depicted in Appendix-V of the Fees and Charges Regulations as under:

Sl. No	Key Performance Indicators	Weight age	Petitioner claimed for FY 2015-16	Allowed
1	Reporting of Interconnection meter error	10	10	10
2	Reporting of Grid Incidents and Grid Disturbance	10	10	10
3	Average processing time of shut down request	10	10	10
4	Availability of SCADA System	10	9.998	9.998
5	Voltage Deviation Index (VDI)	10	10	0
6	Frequency Deviation Index (FDI)	10	10	10
7	Reporting of System Reliability	10	7.778	7.778
8	Availability of Website	10	10	10
9	Availability of Standby Supply	5	5	5
10	Variance of Capital expenditure	5	5	4.65
11	Variance of Non Capital expenditure	5	5	5
12	Percentage of Certified Employee	5	5	5
	Total	100	97.776	87.426





47. For reasons cited in paragraph 28 and as per the above table, the petitioner has achieved 87.426% Key Performance Indicators out of 100%. Accordingly, the petitioner is allowed to recover incentive of 7.00 % of annual charges for the financial year 2015-16.

48. Petition No. 54/MP/2017 is disposed of with the above terms.

sd/-	sd/-	sd/-	sd/-
<b>(Dr. M.K Iyer)</b> <b>Member</b>	<b>(A.S.Bakshi)</b> <b>Member</b>	<b>(A.K.Singhal)</b> <b>Member</b>	<b>(Gireesh B. Pradhan)</b> <b>Chairperson</b>

