

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 65/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 of Section 28 (4) of Electricity Act, 2003 read with Regulation 6 and Regulation 29 of Central Electricity Regulatory Commission (Fees and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2015 for approval of Performance Linked incentive for NERLDC for the Financial year 2015-16 with reference to NERLDC Charges for the control period 1.4.2014 to 31.3.2019.

And In the matter of

North Eastern Regional Load Despatch Centre (NERLDC)
Power System Operation Corporation Ltd. (POSOCO)
B-9, Qutub Institutional Area, 1st Floor, Katwaria
Sarai, New Delhi -110016

.....Petitioner

Vs

1. APDCL, Bijuli Bhawan, Paltan Bazar,
Guwahati-781 001
2. MePDCL, Meter Factory Area, Short Round Road,
Integrated Office Complex,
Shillong-793 001
3. TSECL, Bidyut Bhawan, North Banamalipur,
Agartala-799 001
4. Department of Power, Government of Arunachal. Pradesh,
Bidyut Bhawan,



- Itanagar-791 111
5. P&E Department of Government of Mizoram, Khatla, Aizwal-796 001
 6. Dept. of Power, Government of Nagaland, Kohima-797 001
 7. MSPDCL, 3rd Floor, New Directorate Building, Near 2nd MR Gate, Imphal-Dimapur Road, Imphal-795 001, Manipur
 8. Doyang HEP, NEEPCO, Wokha, Nagaland
 9. Ranganadi HEP, NEEPCO, P.O. Ranganadi Proj. Dist. Subansiri, Andhra Pradesh-791 121
 10. AGBPP, NEEPCO, Kathalguri, Tinsukia, Assam
 11. AGTPP, NEEPCO, Ramchandranagar, Agartala, Tripura
 12. KHANDONG HEP, NEEPCO, Umrangsoo, N.C. Hills, Assam
 13. KOPILI HEP, NEEPCO, Umrangsoo, N.C. Hills, Assam
 14. KOPILI-2 HEP, NEEPCO, Umrangsoo, N.C. Hills, Assam
 15. AGTP CC Extn. NEEPCO, Ramchandranagar, Agartala, Tripura
 16. NHPC Loktak HEP, Leimatak-795 124, Manipur
 17. ONGC Tripura Power Company Ltd., 6th Floor, A Wing, IFCI Tower-61, Nehru Place, New Delhi-110 019



18. NTPC Ltd.,
BgTPP, Salakati (P), Dist: Kokrajhar (BTAD),
Assam-783 369
19. Power Grid Corporation of India Ltd., NERTS, Lapalang,
Shillong-793 006, Meghalaya
20. North Eastern Transmission Company Ltd.,
1st Floor, Ambience Corporate Tower, Ambience Mall,
Gurgaon, 122 001, Haryana
21. ENICL, C-2 Mira Corporate Suite,
Ishwar Nagar, Mathura Road,
New Delhi-110 065

For Petitioner:- Shri Rajib Sutradhar, NERLDC

For Respondent:- None

ORDER

The petitioner, North Eastern Regional Load Despatch Centre (NERLDC), has filed the present petition under of 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 NERLDC for the financial year 2015-16 for 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, North Eastern Load Despatch Centre setup under Section 27 of the Electricity Act, 2003 performs functions specified in Section 28 of the Electricity Act, 2003. NLDC and RLDCs are being 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) to 29 (3) of the Fees and Charges Regulations, the recovery of performance linked incentive by NLDC and RLDCs shall be based on the achievement of Key Performance Indicators (KPI) as specified in Appendix V of the Fees and Charges Regulations or other such parameters as specified by the Commission.

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

(d) As per methodology specified in Appendix V of the Fees and Charges Regulations, KPI score for NERLDC for the year 2015-16 has been computed as under:

S. No.	Key Performance Indicators	Weightage	2015-16
1	Reporting of Interconnection meter error	10	10.00
2	Reporting of Grid Incidents and Grid Disturbance	10	10.00
3	Average processing time of shut down request	10	10.00



4	Availability of SCADA System	10	10.00
5	Voltage Deviation Index (VDI)	10	10.00
6	Frequency Deviation Index (FDI)	10	10.00
7	Reporting of System Reliability	10	7.78
8	Availability of Website	10	10.00
9	Availability of Standby Supply	5	5.00
10	Variance of Capital expenditure	5	3.51
11	Variance of Non Capital expenditure	5	5.00
12	Percentage of Certified Employee	5	5.00
	Total	100	96.29

(e) As per the methodology provided in Regulation 29 (5) of Fees and Charges Regulations, the petitioner is entitled to recover 7% of annual charges for aggregate performance level of 85% for three years commencing from 1.4.2014 and the incentive shall increase by 1% of annual charges for every 5% increase of performance level above 90%. Accordingly, recovery of Performance Linked Incentive for the year 2014-15 works out as 8.26% of the annual charges [7% for 85% performance level + 1% for performance level from 90 to 95% + 0.26% for performance level from 95% to 96.29%].

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 NERLDC for year ending 31.3.2016 given at para 6, the KPI score given at para 7 and PRP percentage of Annual Charges for the year 2015-16 as per para 7 of the petition.
- (b) Allow the applicant to recover incentive from the users for the year 2015-16 as approved by the Commission.



- (c) Pass such other order as the 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 respondents despite notice.

5. The present petition has been filed under Regulations 6 and 29 of the Fees and Charges Regulations for approval of Performance Linked Incentive for the financial year 2015-16. 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 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 and performance on these KPIs has been quantified to make it measurable. The petitioner has submitted KPI-wise details as under:

(a) **KPI-1: Reporting of Inter-connection 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 which are made available on the concerned web-sites as per the provisions of the Regulations. Therefore, in a year, the possible nos. of reports are 52 which have 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 with on monthly basis and the same are sent to NLDC for further compilation on National basis for further reporting to the Commission on consolidated basis. As the reporting on grid incidences and grid disturbances is generated on monthly basis, twelve target reports to be generated have been considered. 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 shutdown process, uniform across all the RLDCs has been discussed and approved at RPCs level. Time allowed to NLDC and to RLDCs for approval of the shut-down requests is 26 Hours and 50 Hours (including NLDC Time) respectively. 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 and the 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 shutdown requests is sent 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 would be considered as 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 RLDCs. If the time taken is more than the prescribed time, then the performance would come down in the same proportion i.e. if the time taken in processing the request is more than 5% of the prescribed time, then the percentage performance would 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 and percentage average availability of twelve (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 the provisions of the Regulation. The possible number of reports which could be generated (365 daily, 52 weekly and 12 monthly) have 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 petitioner has submitted that the figures (capital and non-capital) mentioned in the 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 Regulation 29 (5) of the Fees and Charges Regulations. Percentage performance has been proportionately converted to marks scored.

(g) KPI 12: Percentage of certified employees:- The target percentage of the certification as 85% of the eligible candidates 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 Percentage) A*	100
Marks scored (In proportion of the percentage 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 the NERLDC website (i.e. http://nerldc.org/SEMERROR_DB.aspx) on 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 are 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 the parameter of reporting of grid incidents and grid disturbance, actual incidents of such events during the financial year 2015-16 are as under:

Grid Incidents and Grid Disturbance for FY 2014-15			
Category	Count (Nos.)	Recovery period	Loss of Energy (MUs)
GI-1	29	10:59	0.42
GI-1	92	10:26	1.39
GD-1	258	10:00	0.31
GD-2	6	01:56	1.15
GD-3	1	00:33	0.30
GD-4	1	00:08	0.06



GD-5	0	00:00	0.00
All	387	34:04	3.62

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

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

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 Centres 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:

Month	Date of Reporting
April, 2015	22.5.2015
May, 2015	24.6.2015
June, 2015	23.7.2015
July, 2015	21.8.2015
August, 2015	23.9.2015
September, 2015	21.10.2015
October, 2015	23.11.2015
November, 2015	23.12.2015
December, 2015	23.1. 2016
January, 2016	22.2. 2016
February, 2016	23.3.20016
March, 2016	22.4.2016

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 weightage 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:-

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)
April,2015	9	10.80	1
May,2015	19	24.94	1
June,2015	16	23.78	2
July,2015	19	26.23	1
August,2015	14	12.53	1
September,2015	20	10.30	1
October,2015	22	21.36	1
November,2015	29	20.79	1
December,2015	11	18.51	2
January,2016	20	70.56	4
Febuary,2016	18	29.75	2
March,2016	28	44.00	2
Total	225	313.55	1

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 Hours respectively.



For NERLDC

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

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 has been 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:

Month	percentage Availability
April,2015	100
May,2015	100
June,2015	100
July,2015	100
August,2015	100
September,2015	100
October,2015	100
November,2015	100
December,2015	100
January,2016	100
Febuary,2016	100
March,2016	100
Average of 12 months	100

Performance during FY 2014-15*	100
Marks scored (In proportion of the percentage performance above)	10.00
* Average of 12 months	



22. We have considered the submissions of the petitioner. We have worked out the average of 12 months as $(100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100)/12=100$. Accordingly, the marks scored for availability of SCADA is 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:-

Name of the Region: NLDC				
S. No.	Name of the 400/765 kV sub-station	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	Balipara	Yes	Yes	Yes
2	Bongaigaon	Yes	Yes	Yes
3	Byrnihat	Yes	Yes	Yes
4	Misa	Yes	Yes	Yes
5	Palatana	Yes	Yes	Yes
6	Ranagandai	Yes	Yes	Yes
7	Silchar	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 are also being hosted on websites by RLDCs which is thereafter compiled at NLDC and circulated internally. Similarly, RLDCs are also calculating and reporting VDIs on their websites as part of their weekly reports. The petitioner has submitted that NLDC independently calculates and reports VDIs of important sub-stations on a monthly basis which is available on website as part of



monthly report. 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*	100
Marks scored (In proportion of the percentage performance above)	10
* Formula for performance calculation	$\left[\left(\frac{\text{No. of daily reports issued (to be derived from column C)}}{366(\text{Total no. of days in FY 2015-16})} \right) * 100 \right] + \left[\frac{\text{No. of weekly reports issued (to be derived from column D)}}{52(\text{Total no. of weeks in FY 2015-16})} * 100 \right] + \left[\frac{\text{No. of monthly reports issued (to be derived from column E)}}{12} * 100 \right] / 3$

25. 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.”

26. 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 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. 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.

27. We have considered 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. The petitioner has computed the Key Performance Indicators on annual basis. Accordingly, the weightage for Voltage Deviation Index (VDI) is considered as 10 out of 10.

F. Frequency Deviation Index (Parameter 6)

28. The total weightage for the parameter Frequency Deviation Index (FDI) is 10. The petitioner has submitted FDI during 2015-16 as under:-



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
B	C	D	E
April,2015	Yes	Yes	Yes
May,2015	Yes	Yes	Yes
June,2015	Yes	Yes	Yes
July,15	Yes	Yes	Yes
August,15	Yes	Yes	Yes
September,2015	Yes	Yes	Yes
October,2015	Yes	Yes	Yes
November,2015	Yes	Yes	Yes
December,2015	Yes	Yes	Yes
January,2016	Yes	Yes	Yes
Febuary,2016	Yes	Yes	Yes
March,2016	Yes	Yes	Yes

Performance during FY 2015-16*	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)/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

29. 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)

30. 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,15	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	Febuary,2016	Yes#	Yes	Yes
12	March,2016	Yes#	Yes	Yes

Event based action

X*=	100
*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

#Event based action.



(b) Reporting of ATC 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

Y*=	100
*Formula	$\left(\left(\frac{\text{No. of daily reports issued (to be derived from column C)}}{366} \right) \times 100 + \left(\frac{\text{No. of weekly reports issued (to be derived from column D)}}{52} \right) \times 100 + \left(\frac{\text{No. of monthly reports issued (to be derived from column E)}}{12} \right) \times 100 \right) / 3$

#Event based action is taken on violation of TTC/ATC.

(c) Reporting of Angle difference between important buses (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	No	No
2	May,2015	Yes	No	No



3	June,2015	Yes	No	No
4	July,2015	Yes	No	No
5	August,15	Yes	No	No
6	September,2015	Yes	No	No
7	October,2015	Yes	No	No
8	November,2015	Yes	No	No
9	December,15	Yes	No	No
10	January,2016	Yes	No	No
11	February,2016	Yes	No	No
12	March,2016	Yes	No	No

Z*=	33.33
*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 2014-15*=	77.78
Marks scored (In proportion of the percentage performance above)	7.78
Formula	(X+Y+Z)/3

31. The petitioner has submitted that the score for KPI No-7 (Reporting of System Reliability) has worked out to 7.78 out of 10.

32. We have considered the submission of the petitioner. 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:-

S. No.	Month	Percentage Availability
1	April,2015	100
2	May,2015	100
3	June,2015	100
4	July,2015	100
5	August,15	100
6	September,2015	100
7	October,2015	100
8	November,2015	100
9	December,15	100
10	January,2016	100
11	Febuary,2016	100
12	March,2016	100

Performance during FY 2015-16*	100
Marks scored (In proportion of the percentage performance above)	10
* 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*	100
Marks scored (In proportion of the percentage performance above)	5

* 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 lakh)

Capital Expenditure allowed by CERC (A)	Actual Expenditure incurred (B)	Percentage Variation $C = ((A-B)/A) * 100$
2176.74	18.30	99.16

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



Performance during FY 2015-16*	70.28
*Formula	IF(C>10,100-(C-10)/3,100)#
Marks Scored (in proportion of the percentage performance above)	3.51
*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.	

40. The petitioner has submitted that 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. 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 weightage claimed for variance of Capital expenditure is provisionally considered as 3.51 (pro-rata) 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 lakh)

Expenditure allowed by CERC (A)	Actual Expenditure incurred (B)	% Variation C= ((A-B)/A)*100
1445.55	1535.22	6.20

In the non-capital expenditure, HR Expenses, O&M Expenses and Depreciation have been considered. In column A, figures as per the Fees and Charges for the control period 2014-19 have been considered. In column B, value as per balance sheet for the year 2015-16 has been considered.

Performance during FY 2015-16*	100
*Formula	IF(C>10,100-(C-10)/3,100)#
Marks Scored (in proportion of the percentage performance above)	5.00
*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 the regulation 29(5) of the Fees and Charges Regulations.	

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 31.3.2016 (A)	Actual No. of Employees certified as on 31.3.2016 (B)	percentage of Employees Certified as on 31.3.2016 (C=B/A*100)
38	37	97.37

Performance during FY 2015-16*	100
*Formula	IF(C<85,100-(85-C)/3,100)#
Marks Scored (in proportion of the percentage 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 prescribed in Regulation 29(5) of the Fees and Charges Regulations.	

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, up to 85% certification, 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.



46. We have considered the submission of the petitioner with regard to KPI. The following Key Performance Indicators are allowed as per the methodology specified in Appendix-V of the Fees and Charges Regulations:-

S. No	Key Performance Indicators	Weight age	Claimed for FY2015-16	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	10	10
5	Voltage Deviation Index (VDI)	10	10	10
6	Frequency Deviation Index (FDI)	10	10	10
7	Reporting of System Reliability	10	7.78	7.78
8	Availability of Website	10	10	10
9	Availability of Standby Supply	5	5	5
10	Variance of Capital expenditure	5	3.51	3.51
11	Variance of Non Capital expenditure	5	5	5
12	Percentage of Certified Employee	5	5	5
	Total	100	96.29	96.29

47. As per the above table, the petitioner has achieved 96.29% Key Performance Indicators out of 100%. Accordingly, the petitioner is allowed to recover incentive of 8.26% of annual charges for the financial year 2015-16.

48. Petition No. 65/MP/2017 is disposed of with the above.

sd/-
(Dr. M.K Iyer)
Member

sd/-
(A.S.Bakshi)
Member

sd/-
(A.K.Singhal)
Member

sd/-
(Gireesh B.Pradhan)
Chairperson

