NORTHERN REGIONAL POWER COMMITTEE

ADDITIONAL AGENDA

FOR

41st MEETING OF TECHNICAL COORDINATION SUB-COMMITTEE

&

44th MEETING OF NORTHERN REGIONAL POWER COMMITTEE

B. OPERATIONAL ISSUES

B.24 Timely PTCC clearance of 132 KV & Above Voltage level Transmission lines submitted to Power Telecommunication Coordination Committee (PTCC). (Revised Agenda by PSTCL)

B.24.1. As per Central Electricity Authority Measures relating to safety & electric supply, 2010, Regulation 77 {Protection against electromagnetic interference} enclosed as **Annexure-B.24.1**, PSTCL submit its proposals for all 132 KV & above voltage level transmission lines for obtaining Power Telecommunication Co-ordination Committee clearance. Also as per PTCC Manual 2010 page no. 142 & 143 enclosed as Annexure-II, the time limit for various steps involved in PTCC clearance is defined as under:-

B.24.2. For approval of Power lines above 132 kV (Central cases)

• For furnishing telecom details by P&T/Railways/Army	8 weeks
• Scrutinizing the details, preparing additional copies and Forwarding to Joint Secretary Power	1 week
• Furnishing Induced Voltage Calculation by Joint Secretary Power & endorsing copies to all concerned	6 weeks
• Furnishing recommendations by Railways/Army	2 weeks
• Final examination and issue of certificate	2 weeks

B.24.3. It is defined in the said pages of PTCC Manual **(Annexure-B.24.2**) that the concerned field units of BSNL Circle/Power Utilities/Railways may kindly adhere strictly to these limits forthwith and thereby ensure speedy clearance of cases refereed to Power & Telecommunication Co-ordination Committee.

B.24.4. PSTCL has already forwarded the proposals of its 132 KV & above voltage level transmission lines for PTCC clearance timely but even after lapse of time frame given as per PTCC manual, route approval certificate has not been issued till date for the following lines. It is also added here that no reference is pending for addressal by PSTCL against these lines which is detailed below:-

Sr. No.	Name of Transmission Line	Reference by which case forwarded	Latest PTCC Status as per DE(PTCC), New Delhi
1	PTCC case of 220 KV Makhu-Algon Line	Provisional RAC Issued on dated 19.06.2018 but (NOC from Railway is still pending) Memo No. 1016/36 dated 27.11.2018(CEA) Letters addressed to Railways:- Memo No. 1033/36 dated 28.11.2018 Memo no. 1029 dated 18.07.2014 Memo no. 4041 dated 28.08.2014 Memo no. 2899 dated 06.07.2015 Memo no. 3257 dated 09.06.2016	NOC from Railway pending, Case copy also submitted to Northern Railways at New Delhi by hand in the month of June/18. ***Remarks:-*** ***Provisional RAC Issued on dated 19.06.2018 but (NOC from Railway is still pending)***
2	PTCC case of LILO of 220 KV Himatpura-Jagraon Line at 220 KV Sub-Station Ajitwal	Memo No. 708/15 dated 06.03.2018(to all concerned) Memo No. 1033/36 dated 28.11.2018(Railways) Memo No. 539 dated 14.06.2018(CEA)	CEA has issued IV Calculations, but Railway NOC awaited ***Remarks:-*** ***Defense NOC issued vide letter B/46937/Sigs 7(b)/1050 dated 02.08.2018*** ***(but Copy not Received)***
3	PTCC case of LILO of 220 KV Jadla to Jamsher Line at 220 KV Sub-Station Banga	Memo No. 140 dated 09.01.2018(to all concerned) Memo No. 1033/36 dated 28.11.2018(Railways)	IV Calculations issued by CEA, defence has issued NOC but from NOC railway pending ***Remarks:-*** ***Defense NOC issued vide letter B/46937/Sigs 7(b)/925 dated 13.03.2018*** ***(Copy Received on dated 16.06.2018)***
4	PTCC of 220 KV Line Talwandi Sabo-Maiserkhana (Railway Deposit Works)	Memo No. 2462/67 dated 31.05.2018(to all concerned) Memo No. 1140 dated 19.12.2018 (CEA) Memo No. 553 dated 19.6.2018 (CEA) Memo No. 1033/36 dated 28.11.2018(Railways)	BSNL details pending, NOC from Railway pending. ***Remarks:-*** ***Defense NOC issued vide letter B/46937/Sigs 7(b)/1152 dated 20.09.2018*** ***(Copy Received)***
5	220 KV Line Sandhour to KupKalan	Memo no.782/789 dated 28.08.2018 (to all concerned) Memo No. 1037/40 dated 28.11.2018 (Defence) Memo No. 1033/36 dated 28.11.2018(Railways)	Case also submitted by hand in CLPTCC meeting by PSTCL & Pending from all departments ***Remarks:-*** ***Defense NOC issued vide letter B/46937/Sigs 7(b)/1256 dated 27.11.2018*** ***(Copy Received on dated 01.01.2019)***

B.24.5. It is therefore requested in case Route Approval Certificate for the transmission line is not issued by Power Telecommunication Coordination Committee (PTCC) even after lapse of time frame elaborated in PTCC Manual, 2010 and also in case no reference is pending with the applicant, then the transmission line be deemed cleared for PTCC.

Members may kindly deliberate.

C. COMMERCIAL and TeST ISSUES

C.31 Implementation of Deviation Settlement Mechanism (4th Amendment) Regulations (Agenda by Delhi SLDC)

C.31.1 Central Electricity Regulatory Commission (CERC) published 4th amendment of Deviation Settlement Mechanism Regulations, 2014 which come into force w.e.f. 01.01.2019.

C.31.2 The objective of these regulations is to maintain grid discipline and security as envisaged under the Grid Code through the commercial mechanism for Deviation Settlement. The Additional Charge for Deviation is introduced with stringent limit on over and under drawl. The key aspects of this amendment are:

i. The upper limit for the frequency has been changed to 50.05 from 50.10 and the lower limit for frequency has been changed to 49.85 from 49.70.

ii. Deviation charges have been linked to Daily average Area Clearing Prices (ACP) of the exchange on a daily basis with maximum ceiling limit 800 Paise/kWh at 49.85 Hz.

iii. In the event of sustained deviation from schedule in one direction (positive or negative) shall attract an additional surcharge.

Clause regarding sustained deviation of regulation is re-produced below:

"In the event of sustained deviation from schedule in one direction (positive or negative) by any regional entity, such regional entity (buyer or seller) shall have to make sign of their deviation from schedule changed, at least once, after every 6 time blocks. Provided that violation of the requirement under this clause shall attract an additional surcharge of 20% on the daily base DSM payable / receivable as the case may be."

C.31.3 Purpose of commercial implication on sustained deviation under 4th amendment is to avoid continuous over drawl from grid to avoid grid disturbance, black outs, frequency deterioration etc. However, ensuring sign reversal for a disciplined state like Delhi where schedule and demand is always within deviation limit is difficult.

C.31.4 It is to be noted that Intra-state ABT mechanism in Delhi state was implemented in 2014. Under intra-state ABT, DSM charges were cascaded to Discoms level. Real time demand and schedule management is onus of Distribution Company. Currently three Discoms and three Deemed licenses are doing the scheduling in Delhi.

C.31.5 In most of other states in India, the control over sign changes are achieved by state generation control and load curtailment of rural feeders. There are no tools available at the Delhi state level to ensure the polarity reversal when there is a mandate from Govt. of India and GNCTD for maintaining 24X7 availability of power supply.

C.31.6 Mandatory reversal of sign leads to deviation from schedule irrespective of limit. It is difficult for distribution entities in Delhi to ensure polarity reversal in every 6 time block at Discoms level.

C.31.7 However maintaining the polarity reversal at Distribution Company level, may or may not be helpful in ensuring polarity reversal at state level as every distribution utility will manage the schedule as per their demand and collective effect may not ensure sign reversal at state level. Load profile of each utilities is different in Delhi at given time hence it become more difficult to have synchronized effect on sign change of Delhi state.

C.31.8 As per IEGC 2010 and subsequent amendments stipulate that the scheduling/ revision of power should be executed in four time blocks. This timeline is adhered to incase when revision is within region however, the process takes approx. 6 time blocks in cases when seller and buyer are located in different region. Further, the scheduling of URS takes more than stipulated 4 time blocks as consent of multiple parties is involved in the same.

TCC/NRPC is requested to deliberate and decide on the following:

i. Whether Additional penalty of 20% of the daily base DSM receivable/payable for sustained deviation in one direction is reasonable. Whether the financial burden on account of above on various utilities was considered before issuing this amendment.

ii. Post facto revision in NRLDC: The utilities would be managing their load to avoid penalty for sustained deviation for more than 6 Time Blocks in accordance with the schedule available. However the DSM is prepared based on the implemented schedule. For any post facto changes occurring either in implemented schedule could result in violation of the sustained deviation clause even- after proactive management of schedule in real time by utility.

iii. Forced scheduling by NRLDC: Delhi has a varying demand curve. Winters are lean period when peak demand reaches to 4500MW and minimum demand could reach to 1400MW. In this scenario it is very difficult to manage the forced schedule by NRLDC in spite of backing down all the generators including intra state and ISGS. In this case it would be particularly difficult to manage schedule to avoid additional charge for sustained deviation due to forced scheduling by NRLDC.

iv. POSOCO before forwarding the scheme/regulation /proposal to CERC need to forward the same through RPCs to obtain views of regional entities regarding implementation issues at the initial stage.

C.32 Implementation of Deviation Settlement Mechanism (4th Amendment) Regulations (Agenda by UP SLDC)

C.32.1 All the members of TCC/NRPC are aware that Hon'ble Central Electricity Regulatory Commission (deviation Settlement Mechanism and related matters) [Fourth

Amendment] Regulations, 2018 mandates for sign reversal of deviation from over drawl to under drawl and vice-versa after every 6th time block otherwise huge penalty of 20% of daily DSM for each violation is imposed. Uttar Pradesh has only one reservoir based hydroelectric plant and its generation is to be regulated as per the irrigation requirement of Bihar. Also, reservoir level is to be maintained to meet out the water requirement of almost 15000 MW thermal stations located in that area, therefore it cannot play a significant role in sign reversal.

C.32.2 Now, the country is progressing towards 24*7 power supply scenario and deviation is to be controlled only by generation side. If sign reversal of deviation is to be controlled by generator side, then instead of revision of schedule of all injecting entities (ISGS, CGS, LTA, MTOA, etc.) should be from n+1 time block instead of n+3 to implement the above sign reversal smoothly. Also, it is not advisable that only one generator which is on top of MoD should be backed down frequently for sign reversal of drawl of grid.

C.32.3 DSM bills of almost all the states of Northern Region have increased by 300-400%. which has commercial impact on distribution companies and finally this burden is to be recovered by the consumers in the form of higher electricity tariff.

C.32.4 Grid operations are performed on the basis of real time SCADA data available in SLDC/Discoms control room and sign violations are counted as per the actual meter data which is not available in control room (comparison sheet attached at **Annexure C.32.1**). Also, sign violation penalty is imposed on all the 96 time blocks of the day, thus penalty is imposed on those time blocks in which grid operation were performed in disciplined way. Imposing penalty on those time blocks where there was no indiscipline is against the natural law of justice. We are of the view that penalty should be imposed on that time block in which violation has occurred. All the members of the committee may please give their opinions on this issue.

C.32.5 At present DSM account of UP and other states is being prepared taking in to account the data of SEMs installed at feeders as well as ICTs at inter face points of CTU-STU periphery. Inclusion of ICTs data into Energy Accounting often lead to error into Energy Account prepared. This method needs to be reviewed and for the purpose of DSM/Energy Account calculation only data from SEM installed at feeders at inter face points of CTU-STU periphery are proposed to be taken into account.

Members may kindly deliberate.

C.33 Shifting of RLDC's declared peak hours (Agenda by UP SLDC)

C.33.1 U.P. gets its share of power from RLDC controlled pondage and storage type Hydro ISGS during peak hours. The peak hours is declared by RLDC. U.P., being the largest State in terms of population, has requirement of such power in peak hrs, but since its peak hrs do not match with the RLDC's declared peak hours, it does not fulfill the State's peak requirement fully. For example, for the month of February, U.P.'s peak demand was observed between 0515-0700 Hrs. (morning peak) and 1815-1945 Hrs.

(evening peak) whereas as per RLDC's declaration peak hours were defined as 0600-0730 Hrs. (morning peak) and 1745-1915 Hrs. (evening peak). Therefore, there was about 45 minutes 'delay' in morning peak and 'advance' of about 30 minutes in evening peak activation of hydro ISGS resources.

C.33.2 Hence it is requested that the peak hours should be declared accommodating U.P.'s peak hrs. so that U.P. can best utilize its share for peak hour management.

Members may discuss.

C.34 Allowing Day Ahead/Intraday Banking for hydro power from RLDC controlled ISGS (Agenda by UP SLDC)

C.34.1 It has been observed that U.P's evening peak demand is higher than morning peak demand therefore if the State was given flexibility, it could have scheduled more of the Hydro ISGS during evening period as compared to morning. The other Beneficiaries may also have similar type of issues regarding utilization of such hydro power during peak as well as during non-peak hrs.

C.34.2 It is proposed that there should be provision of Day Ahead/Intraday mutual Banking among the Beneficiaries for RLDC controlled hydro power from ISGS.

Members may discuss.

C.35 Declaration of DC in consent with Buyer in low stock conditions (Agenda by UP SLDC)

C.35.1 It is observed that even in very low coal stock condition, the Generator provides full DC but in contrast when there is requirement of power for Beneficiary, they do not give DC with similar low coal stock. The Generator takes advantage keeping in view the actual requirement of power. When there is low requirement of power, they give full DC recognizing that they would not be given SG but when there is requirement of power and they know that they will be given SG, they do not give DC taking reason of low coal stock.

C.35.2 Hence, there should be a provision that if the coal stock is less than the provisions of regulations, DC of the generator shall be decided mutually with the buyer depending upon the coal stock.

Members may discuss.

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Annexure-B.24.1

भारत का राजपत्र
The Gazette of India

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केंद्रीय विद्युत प्राधिकरण

अधिसूचना

नई दिल्ली, 20 सितम्बर, 2010

सं. सी.ई.आई./1/59/सीईए/ई. आई.—केन्द्रीय विद्युत प्राधिकरण विद्युत अधिनियम, 2003 (2003 का 36) की धारा 177 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए सुरक्षा तथा विद्युत आपूर्ति संबंधी उपाय के लिए निम्नलिखित विनियम बनाता है :—

अध्याय I

1. **संक्षिप्त नाम और प्रारम्भ** :— (1) इन विनियमों का संक्षिप्त नाम केंद्रीय विद्युत प्राधिकरण (सुरक्षा तथा विद्युत आपूर्ति संबंधी उपाय) विनियम, 2010 है ।

(2) ये राजपत्र में इनके अंतिम प्रकाशन की तारीख से प्रवृत्त होंगे ।

2. **परिभाषाएं** :—(1) इन विनियमों में, जब तक कि संदर्भ में, अन्यथा अपेक्षित न हो,

(क) "अधिनियम" से विद्युत अधिनियम, 2003 अभिप्रेत है;

(ख) "सुगम" से किसी उपकरण का अथवा विशेष प्रयास किए बिना शारीरिक उपयोग पहुंच के भीतर अभिप्रेत है;

(ग) "एम्पीयर" से अभिप्रेत विद्युत धारा की एक इकाई है और यह ऐसा कॉन्स्टेंट करेंट है जो निर्वात में एक मीटर की समानान्तर दूरी पर रखे नगण्य अनुप्रस्थ काट वाले अनन्त लम्बाई के दो सुचालकों से गुजरने पर इन दोनों सुचालकों के बीच प्रति मीटर लम्बाई पर 2×10^{-7} न्यूटन का बल पैदा करेगा;

(घ) "उपकरण" से विद्युत उपकरण अभिप्रेत है और इसमें सभी मशीनें, फिटिंग्स, सहायक उपकरण तथा उपकरण सम्मिलित हैं, जिनमें सुचालकों का उपयोग किया जाता है;

(ङ) "अनावृत" से अभिप्रेत है जो विद्युत-रोधी पदार्थ से आवृत न हो;

(च) "केबल" से अभिप्रेत है, ऐसा एकल सुचालक (ठोस या तन्तुरूपी) अथवा दो या दो से अधिक ऐसे सुचालक जिन्हें अलग-अलग विद्युतरोधी पदार्थ से आवृत किया गया हो और साथ-साथ बिछाया गया हो। ऐसे सुचालक या सुचालकों को यांत्रिक सुरक्षा कवच उपलब्ध कराया जा सकता है, या नहीं भी कराया जा सकता है;

(छ) "परिपथ (सर्किट)" से अभिप्रेत है, विद्युत प्रवाह के लिए सुचालक अथवा सुचालकों का एक व्यवस्थित क्रम जो एक विद्युत व्यवस्था या इस व्यवस्था का एक अंग निर्मित करते हैं;

(ज) "परिपथ भंजक (सर्किट ब्रेकर)" से ऐसा उपकरण अभिप्रेत है, जो सभी परिस्थितियों में परिपथ बना सकता है या ब्रेक कर सकता है, और जब तक इसे अन्यथा विनिर्दिष्ट न किया गया हो, यह इस प्रकार डिजाइन किया गया है कि असाधारण परिस्थितियों में यह स्वतः ही विद्युत प्रवाह रोक देता है ;

or in any factory or mine or on any consumer's premises shall be protected with earth gaurding for rendering the line electrically harmless in case it breaks.

(2) An Electrical Inspector may, by notice in writing, require the owner of any such overhead line, wherever it may be erected, to protect it in the manner specified in sub-regulation (1).

(3) The owner of every overhead line of voltage exceeding 650 V shall make adequate arrangements as per relevant Indian Standards to prevent undesignated persons from ascending any of the supports of such overhead lines which can be easily climbed upon without the help of a ladder or special appliances.

Explanation.- For the purpose of this relgulation, rails, reinforced cement concrete poles and pre-stressed cement concrete poles without steps, tubular poles, wooden supports without steps, I-sections and channels' shall be deemed as supports which cannot be easily climbed upon.

74. **Protection against lightning.**- (1) The owner of every overhead line, sub-station or generating station which is exposed to lightning shall adopt efficient means for diverting to earth any electrical surges due to lightning which may result into injuries.

(2) The earthing lead for any lightning arrestor shall not pass through any iron or steel pipe, but shall be taken as directly as possible from the lightning arrestor without touching any metal part to a separate vertical ground electrode or junction of the earth mat already provided for the sub-station of voltage exceeding 650 V subject to the avoidance of bends wherever practicable.

75. **Unused overhead lines.**- Where an overhead line ceases to be used as an electric supply line:

(i) the owner shall maintain it in a safe mechanical condition in accordance with regulation 57 or remove it.

(ii) the Electrical Inspector shall, by a notice in writing served on the owner, require him to maintain it in a safe mechanical condition or to remove it within thirty days of the receipt of the notice.

76. **Laying of cables.**- (1) No underground power cable of voltage exceeding 33 kV shall be laid without a minimum underground depth of 1.2 meters.

(2) No underground telecommunication cable shall be laid without a minimum separation distance of 0.6 meters to the underground power cable of voltage exceeding 33 kV.

77. **Protection against electromagnetic interference.**- The owner of every overhead power line of voltage level 11 kV or higher shall submit proposal for obtaining Power Telecommunication Co-ordination Committee clearance to ensure safety of the personnel and telecom equipment.

(Refer Para 6.4.6)

Subject : 'Time Limit' for Various Steps Involved in PTCC Clearance

Reference : **Revision of Time Limits for various stages involved in PTCC clearance.**

Chief General Manager, T&D Circle, Jabalpur Letter No.TD/LP-2012/General Dated 30.12.2009.

With mutual consent between CEA and Inspection Circle, BSNL the time limits for various stages involved in PTCC clearance have been revised. These recommendations are given below. It is requested that the concerned field units of BSNL Circle/ Power Utilities/Railways may kindly adhere strictly to these time limits forthwith and thereby ensure speedy clearance of cases referred to Power and Telecommunication Co-ordination Committee.

1. For obtaining PTCC route approval

(i) **For Approval of 11 kV Lines - Approval by the respective DE's (Telecom)**

(a) 4 weeks if the power line proposal pertains to single case.

(b) 5 weeks if the cases are referred in-group.

(ii) **For 22 kV/33 kV Power Lines - Approval by the State Level**

(a) Furnishing the telecom details by P&T/ Railway/Army etc.	4 weeks
(b) Examining cases and computing the Induced Voltage (IV) calculations and forwarding the same to Railways, if required.	2 weeks
(c) Forwarding recommendations by Railways	2 weeks
(d) Final examination and issue of certificate	1 week

(iii) **For 33 kV D/C and above up to 132 kV Power Lines (Central Cases)**

(a) Furnishing telecom details by P&T/ Railway/Army	6 weeks
(b) Scrutinizing the details, preparing copies & forwarding to concerned Electricity Board by DET PTCC.	1 week
(c) Furnishing I.V. calculations by Electricity Board and endorsing copies to all concerned	6 weeks

(d) Furnishing recommendations by Railway /Army — 2 weeks

(e) Final examination & Issue of certificate — 2 weeks

For Approval of Power Lines above 132 kV (Central Cases)

(a) For furnishing telecom details by P&T/Railways/Army. — 8 weeks

(b) Scrutinizing the details, preparing additional copies and forwarding to Joint Secretary Power. — 1 weeks

(c) Furnishing Induced Voltage calculation by Joint Secretary Power & endorsing copies to all concerned. — 6 weeks

(d) Furnishing recommendations by Railways/ Army. — 2 weeks

(e) Final examination and issue of certificate — 2 weeks

(iii) For approval of Cases from P&T/Railway/Army for the construction of Telecom Lines, laying Coaxial Cables etc.

(a) For marking and furnishing power line details of various categories of power lines separately to the AE (PTCC) (up to 33 kV) to the concerned Electricity Board authority (for cases of 33 kV D/C and above up to 132 kV) and to the Joint Secretary (Power), C.E.A. (for cases above 132 kV) — 10 weeks

(b) Computing Induced Voltage calculation by AE (PTCC)/Electricity Board/Joint Secretary (P). — 6 weeks

(c) Furnishing recommendations by Railways/ Army — 2 weeks

(d) Final examination and issue of certificate — 2 weeks.

8. For protective works after the PTCC approval

(a) For quoting the charges and furnishing Estimate — 4 weeks

(b) Arrangement for payment — 4 weeks

(c) Execution of protective works by P&T — 10 weeks

Comparison of SCADA V/s SEM Deviation & Violation

Annexure C.32.1

DATE	OD/UD (in MU)			No of Violation			Violation Charges (Rs. In Lakh)	Per Day UI Charges (Rs. In Lakh)
	As per SCADA	As per SEM	Diff	As per SCADA	As per SEM	Diff		
01-01-2019	-0.371394	-0.018	0.353394	0	3	3	13.43556	61.31274
02-01-2019	-0.957002	-0.281	0.676002	0	0	0	0	100.61058
03-01-2019	-0.151384	0.483	0.634384	0	2	2	23.74372	137.44965
04-01-2019	-0.458683	0.411	0.869683	0	1	1	8.32226	97.40378
05-01-2019	0.100613	0.402	0.301387	2	3	1	20.27365	86.29303
06-01-2019	-1.132087	-0.258	0.874087	0	0	0	0	47.39296
07-01-2019	-1.739549	-0.172	1.567549	0	3	3	8.68879	78.56941
08-01-2019	-1.261826	0.081	1.342826	0	4	4	2.90727	11.58574
09-01-2019	1.147316	1.073	0.074316	1	3	2	51.46177	174.33348
10-01-2019	0.101235	0.194	0.092765	0	3	3	34.76674	136.28145
11-01-2019	0.494134	0.793	0.298866	0	1	1	15.85691	154.58318
12-01-2019	0.824285	1.214	0.389715	0	1	1	15.5192	145.60778
13-01-2019	0.315642	0.367	0.051358	0	2	2	17.3977	91.35425
14-01-2019	1.227549	0.496	0.731549	0	3	3	20.62912	84.66363
15-01-2019	0.75823	0.902	0.14377	1	1	0	11.66196	107.44496
16-01-2019	0.015055	0.775	0.759945	0	0	0	0	47.63945
17-01-2019	0.070393	0.732	0.661607	0	0	0	0	39.14882
18-01-2019	-0.754612	-0.252	0.502612	1	2	1	3.20596	3.48293
19-01-2019	0.468329	0.554	0.085671	0	2	2	18.33393	86.12245
20-01-2019	0.798516	0.169	0.629516	0	0	0	0	67.56025
21-01-2019	-0.306	-0.464506	0.158506	1	1	0	4.78882	67.73658
22-01-2019	0.533	0.633785	0.100785	0	3	3	21.97108	104.01045
23-01-2019	0.765	-0.329483	1.094483	0	2	2	20.77823	121.65707
24-01-2019	0.797	-0.02181	0.81881	0	1	1	5.54804	54.22203
25-01-2019	-0.799	-1.902325	1.103325	2	3	1	10.58057	0.15263
26-01-2019	0.049	-0.847056	0.896056	2	2	0	16.71951	107.42285
27-01-2019	0.292	-0.863648	1.155648	0	3	3	3.43051	35.46001
28-01-2019	-0.127	-0.822867	0.695867	0	3	3	1.37966	27.59577
29-01-2019	0.721	0.19575	0.52525	0	0	0	0	39.62246
30-01-2019	1.025	0.399955	0.625045	1	1	0	8.53882	68.22435
31-01-2019	0.367	0.034386	0.332614	1	1	0	2.88237	32.84726
TOTAL	**2.81176**	**3.677181**	**18.547391**	**12**	**54**	**42**	**362.82215**	**2417.79198**

Comparison of SCADA V/s SEM Deviation & Violation

DATE	OD/UD (in MU)			No of Violation			Violation Charges (Rs. In Lakh)	Per Day UI Charges (Rs. In Lakh)
	As per SCADA	As per SEM	Diff	As per SCADA	As per SEM	Diff		
01-02-2019	-0.052	-0.501125	0.449125	0	1	1	5.13039	59.13259
02-02-2019	0.049	0.19311	0.14411	0	0	0	0	67.58775
03-02-2019	-0.089	-0.024064	0.064936	1	0	-1	0	86.5372
04-02-2019	0.749	-0.621797	1.370797	2	2	0	0.88746	6.39088
05-02-2019	0.173	0.252934	0.079934	0	4	4	50.91796	157.53277
06-02-2019	-0.436	1.113413	1.549413	2	4	2	62.46806	192.99643
07-02-2019	-0.904	0.860899	1.764899	0	3	3	32.48972	135.37415
08-02-2019	-0.341	4.232571	4.573571	3	10	7	244.20226	437.11678
09-02-2019	0.68	3.225482	2.545482	0	5	5	76.50438	197.31189
10-02-2019	0.075	3.669511	3.594511	0	4	4	73.28505	212.31405
11-02-2019	0.475	4.044633	3.569633	4	5	1	114.76261	287.08508
12-02-2019	1.294	5.002543	3.708543	12	8	-4	263.98507	491.12253
13-02-2019	0.04	5.033039	4.993039	0	9	9	300.85223	542.28083
14-02-2019	-0.209	4.673893	4.882893	2	11	9	478.0657	799.41234
15-02-2019	-0.071	3.681925	3.752925	2	4	2	109.12875	311.84946
16-02-2019	1.412	5.661684	4.249684	2	7	5	262.05704	546.34046
17-02-2019	-0.044	3.917099	3.961099	1	7	6	170.0334	350.25547
18-02-2019	0.341	3.045777	2.704777	0	7	7	189.68916	381.54881
19-02-2019	1.358	5.541123	4.183123	0	8	8	365.88331	709.54406
20-02-2019	0.459	2.877767	2.418767	0	4	4	95.30939	267.75696
21-02-2019	0.247	4.26254	4.01554	0	8	8	297.14264	561.18507
22-02-2019	0.533	5.248006	4.715006	1	9	8	324.07105	572.27277
23-02-2019	0.16	5.03976	4.87976	2	7	5	272.59474	544.49973
24-02-2019	0.229	4.634333	4.405333	0	6	6	166.97839	385.57128
TOTAL	**6.128**	**75.065056**	**72.5769**	**34**	**133**	**99**	**3956.43876**	**8303.01934**