

उत्तराखण्ड पावर कारपोरेशन लि०

(उत्तराखण्ड सरकार का उपक्रम)

Uttarakhand Power Corporation Ltd.

(A. Govt. of Uttarakhand Undertaking)



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No. 2653/MD /UPCL / I-20

Dated: 18/4/2009

Sub: Compliance Report of Instruction No. 5 : Regarding Monthly Target for checking and study of consumers.

**General Manager (D)
UPCL
Garhwal/Kumaon Zone
Dehradun/Haldwani**

Please refer to letter No. 2300/MD/UPCL/I-20 dated 1-4-2009. You are advised to ensure strict compliance of the instructions and regular submission of the requisite information with the Monthly Summary of the listed consumers checked designation-wise alongwith the details of the consumers checked in the enclosed proforma for each & every consumer as under :

1. **ANNEXURE –I** for the Monthly checking of Consumer Report for LT Consumer – 3 Ø 440 V/230 V and
2. **ANNEXURE –II** for the Monthly checking of Consumer Report for HT Consumer – 11 KV & above.

The above summary of consumers checked for the respective month with consolidated Monthly Circle-wise Checking Report in respect of your respective Zone be submitted to CGM (Commercial) UPCL with a copy endorsed to undersigned must reach by 15th of every month for the previous month checking report for the consumers from 1st April 2009 on a regular timely-basis.

The necessary instructions be also issued to all the concerned as disciplinary action may be taken for non-compliance against the defaulting Officers/Staff.

Encl. As above(Annexure- I & II).

**(JAG MOHAN LAL)
MANAGING DIRECTOR**

MONTHLY CHECKING REPORT & STUDY OF CONSUMERS
(FOR LT CONSUMERS- 3 Ø 440V/1 Ø230V)

ANNEXURE-I

1. Name of the Circle/Division:
2. Date of checking of consumer:
3. Name of Consumer/Address:
4. Contracted Load:
5. Tariff Category:
6. Applicable Tariff
7. Date of release of Connection
8. Meter No. & Make :
9. Connection Type: Whether meter direct or CT connected
10. CT Ratio:
11. Reference of last Sealing Certificate:
12. Meter Constant:

13. PROCEDURE FOR CHECKING OF CONSUMERS

A. In case of CT connected meter the CT Ratio must be checked by measuring current on load on the primary & secondary side by Tong Tester

B. Accucheck Method for Direct Meters/ CT connected meters :

i) In case of direct meters/CT connected meters, the meter checking must be done by Accucheck or Meter Constant Method :

ACCUCHECK METHOD

Si. No.	Units recorded by Meter	Meter recorded by Accucheck	% Error
1.	X	Y	$\frac{Y-X}{Y} \times 100$

ii) Impulse Method:

Impulse/KWh= x

Current = Ia – Average of Secondary Currents of CT/ Average of Direct Currents, in case of direct meter

Voltage-phase to phase = V (in case of direct meter)

$$\text{for 3-Phase Load (KW)} = \frac{\sqrt{3}V \times I_a \times \text{Cos}\phi}{1000} = y$$

Hense, Impulse per hour = x y Therefore, the impulse per minute = x y /60. Compute the error by counting the actual pulse as above.

For Single Phase Load (KW)= VI

$$\frac{V}{1000} \times \text{Cos } \phi \text{ where V is phase to neutral Voltage}$$

Other calculation will be the same as above.

14. **MRI ANALYSIS REPORT :** The MRI recording will be taken on load more than 30% of the contracted load after switching off the connected Capacitor. The consumption pattern, phasor diagram & tamper report must also be furnished on the basis of MRI recorded during the last 12 months accordingly. This will be as follows:

- (A) **Phasor Diagram Analysis:** Whether any phase reversal or wrong phase association appeared.
- (B) **Tamper Report :** Flag Details and any tamper, if occurred.
- (C) 12 months Consumption with Load factor details be submitted as follows:

SI. No.	Month (for the last 12 months and on the date of checking)	Consumption (KWh) as per applicable Tariff	Max. Demand (KW) as per applicable Tariff	Load Factor (%)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

Note: Findings/Shortcomings, if any with remedial measures to be taken be recommended.

MONTHLY CHECKING REPORT & STUDY OF CONSUMERS
(FOR HT CONSUMERS- 11KV & ABOVE)

ANNEXURE-II

1. Name of the Circle/Division:
2. Date of checking of consumer:
3. Name of Consumer/Address:
4. Contracted Load:
5. Tariff Category:
6. Process Tariff
7. Date of release of Connection:
8. Supply Voltage:
9. Feeding Arrangement: Whether through independent or mixed feeder:
10. Meter No. & Make :
11. Last Sealing Certificate to be attached with report duly authenticated by the concerned Officer
12. CT Ratio:
13. PT Ratio:
14. Meter Constant: Impulse/KWh

15. PROCEDURE FOR CHECKING OF CONSUMERS

A. CT Ratio Test- By Primary Injection Method

SI. No.	Current injected on Primary side (A)	Current measured on Secondary side(A)	Ratio	% Error
1	2	3	4	5
	100%Current			
	50% Current			
	20% Current			

B. PT Ratio Test :

SI. No.	Voltage applied on Primary side (440 V)	Voltage measured on Secondary side(V)	Ratio	% Error
1	2	3	4	5

C. Checking of meter by Accucheck Method : Meter will be checked by Accucheck and recording of readings taken as follows :

Si. No.	Units recorded by Meter	Meter recorded by Accucheck	% Error
1.	X	Y	$\frac{Y-X}{Y} \times 100$

CHECKING OF METER BY METER CONSTANT METHOD (ON LOAD) :

Meter Constant = x Impulse /KWh

Phase current = I Amp. (Secondary Current)

For 11 KV

Load(in KW) = $\sqrt{3} \times 11 \times I \times \cos\phi = y$

Hence impulse /hour = x y and Impulse/ minute = x y /60 =A

Therefore, the impulse may be counted for one minute and if these are less, the meter is slow.

The impulse per minute is B, then the % Error = $\frac{A-B}{A} \times 100 \%$

$$\frac{A-B}{A} \times 100 \%$$

For 33 KV

Load(in KW) = $\sqrt{3} \times 33 \times I \times \cos\phi = y$

Hence impulse /hour = x y and Impulse/ minuter = x y /60 =A

Therefore, the impulse may be counted for one minute and if these are less, the meter is slow.

The impulse per minute is B, then the % Error = $\frac{A-B}{A} \times 100 \%$

$$\frac{A-B}{A} \times 100 \%$$

MRI ANALYSIS REPORT

MRI recording to be taken and printout with history sheet of data for the last 12 months.

The MRI Analysis Report will contain the following :

- i) Phasor Diagram - a) Whether vectors are normal b) Whether polarity of CT (current) is in order
- ii) Tamper Report - a) Whether current reversal observed b) Imbalance Current appeared
- iii) Load Factor - Month-wise data for the last 12 months and on the date of checking of the respective consumer.
- iv) Production Data- Month-wise production data as applicable with respect to the consumption/load factor etc. as under :

SI. No.	Month (for the last 12 months and on date of checking)	Consumption (KVAh) as per applicable Tariff	Max. Demand (KVA) as per applicable Tariff	Load Factor (%)	Production (in case of factory/ industry) & Occupancy in case of Hotel
1	2	3	4	5	6

Note: Findings/Shortcomings, if any with remedial measures to be taken be recommended.