

**Before**

**UTTARAKHAND ELECTRICITY REGULATORY COMMISSION**

**In the matter of:**

Violation of provisions of IE Rules, 1956 and Commission's directions on providing proper neutral grounding, earthing and protective system.

**Coram**

**Shri V.J. Talwar Chairman**

**Shri Anand Kumar Member**

**Date of Order: 22<sup>nd</sup> September 2009**

**ORDER**

1. This Order is in continuation to the Order dated 27.10.2008 issued by the Commission in the matter of UPCL, sole distribution licensee of the State, for not providing proper Neutral grounding in the Distribution Transformers and proper Earth wire along with the Overhead Lines of its Distribution System.
2. In the Order dated 27.10.2008, the Commission expressed its concern over the existing status of neutral grounding, earthing/guarding system of UPCL's distribution system, which was utterly inadequate and gave certain directions on improving the same. The Commission also noted that a fatal electrical accident took place at village Syali due to broken overhead LT conductor lying at the ground. The examination of reports on this accident has been done in a separate Order.
3. The Commission dealt with in detail about the pathetic situation of UPCL's unsafe distribution system, which is in gross violation of Rules 50(1), 75, 90(1), 91(1) of Indian Electricity Rules, 1956 inspite of Commission's repeated directions in this regard way

back in September 2006. The details of the Order are not being repeated here for the sake of brevity. However, the extracts of Commission's important observations and directions relevant in the present case of violation of IE Rules on safety measures are reproduced below:

*"5..... The Board resolved that the proposal of expenditure of Rs. 117.95 Crore for proper earthing of whole network of UPCL be sent to Hon'ble UERC for its sanction. ....  
The lackluster attitude of the Company is further represented when no proposal for earthing was submitted by UPCL even after a year when a clear-cut direction was given by its management.*

14. *Such unsafe practices and installations of the licensee are prone to electrical accidents. The Commission, therefore, sought the guidelines, if any issued by Electrical Inspector under Rule 91 of Indian Electricity Rules, 1956. The Electrical Inspector through its letter dated 12.9.08 (**Annexure-1**) has submitted that the Inspectorate has specified the form and manner of providing guarding and earthing system for electrical lines as required under Electricity Rules, 1956. Unfortunately, the same is not being adhered to in most parts of licensee's system. Under these circumstances, **the Commission is forced to invoke compliance of Rule 91 of the IE Rules, 1956 by the licensee and directs UPCL to provide protective device in accordance with Rule 91(1) and anti climbing device in accordance with Rule 91(2&3), latest by 31.03.2010. Proposal along with Action Plan to this effect should be submitted to the Commission within one month of this Order.***

15. *The gravity of the matter can be gauged from a report sent by the Electrical Inspector to the Commission, which depicts the number of accidents in 2006-07 and 2007-08 and the reasons for the same. For instance, in 2007-08 out of total 140 accidents, 106 accidents were fatal and 34 accidents were non-fatal resulting in 56 human deaths, 55 human injuries and 60 deaths of animals. Similarly, in 2006-07, out of total 120 accidents, 95 were fatal and 25 were non-fatal resulting in 40 human injuries, 35 human deaths and 75 animal deaths. The reasons for such accidents advanced revealed non-existence of proper earthing system as required in accordance with the Electricity Rules, 1956.*

16. ... in its written submission under affidavit UPCL, seems to be only beginning it, has stated to have initiated the process of field survey and actual physical verification/enumeration of all existing Distribution Transformers in order to assess the status of neutral grounding which shall be available to it by 31st October 2008 on the basis of which, it shall then be able to assess the quantum of work to be executed. With regard to tenders invited for the purpose, the affidavit says that in the absence of qualified and responsive bids, UPCL could not finalise the tender. Finally UPCL under affidavit has agreed to submit a detailed phase-wise implementation plan for the above work to the Commission by 20.09.2008. However, no such plan has been submitted till the issuance of this Order. **The licensee is hereby directed to submit the required Action Plan within one month of this order.**

17. With regard to system earthing including laying of separate earth wire for the purpose in accordance with IE Rules, 1956, UPCL, in its written submission under affidavit, does not refer to Commission's Order dated 16.05.2007 and various reminders and meetings in which UPCL was asked to submit detailed action plan approved by the Board. However, in its written submission under affidavit UPCL has reiterated what MD, UPCL agreed during the hearing to submit a detailed phase-wise implementation plan for the same to the Commission by 20.09.2008. The Commission has, however, not received any such plan till date. **UPCL is directed to submit a time bound action plan, for completing the works for providing proper earthing latest by 31st March 2010, giving milestones for geographical areas/activities, so as to reach the Commission within one month of this order. Commission is aware that day long shutdowns would be required to lay earth wire in the system and directs UPCL that while preparing the action plan care shall be taken to minimize the hardship likely to be faced by consumers. For this purpose UPCL should complete the works in plane areas (Dehradun, Haridwar, Kashipur etc) in winter months and should complete the work in hilly areas during summer months.**

18. As far as MD, UPCL's proposal, for completing the works at Para 16 & 17 above through project mode, is concerned, the Commission is of the view that UPCL's management is free to choose any methodology for implementing the directions contained in this Order as

long as specified timelines are met. However, the Commission feels that executing these works through project mode may cause serious coordination problems between the project team and operation & maintenance team. Further, the shut downs required for doing these works can be better managed by O&M staff, if the works are being executed through them for meeting the objective of having minimum scheduled outages for work execution. UPCL's management may accordingly decide on the mode of execution after properly weighing the pros and cons of available alternatives for complying with Commission's directions, Rules and Regulations in this behalf. The Commission advises the licensee that all related work towards providing earthing and guarding in lines should be staggered and should be done in phases in hills and plains separately. **The work in hilly area should preferably be taken in summer time and in plains, should be done in winter time so that people of the State face minimum inconvenience. It is suggested that this work can be taken up during such period and in such areas where power cut, if approved by the Commission, is done in period of shortage. Further, the work should be planned in such a manner that first priority should be given to the areas with dense population.**

.....

20. .... It is also surprising that inspite of the Electrical Inspector of the State having specified the requisite arrangements for guarding of lines in the State as required in the Electricity Rules, 1956, UPCL never bothered to follow his guidelines even for new installations/lines. Further, the cost estimates for LT, 11 kV and 33 kV works submitted by UPCL in some other matter, include the cost of earth wire. Thus it appears that though the cost of providing earth in distribution network is charged to the project but ground reality is that actually it is not provided. Commission has taken serious note of this and would get the matter investigated separately.

21. ....The Commission, relying on this undertaking, has decided not to take any coercive measure this time. However, if during the course of time, the Commission finds that even after this opportunity given to UPCL for improving its neutral grounding and earthing system, UPCL is not making serious efforts/progress for meeting the targets set in their own action plan, the Commission will be forced to take further action u/s 142 and 146 of the

*Electricity Act, 2003 against the licensee company. The licensee is directed to make concerted efforts till such time its system is meeting all statutory requirements for safety of life and property.”*

4. The Commission has reviewed each of the above observations/directions. The observation at para 5 of the Order dated 27.10.2008 that gives Board's concern of taking care of financial implication of safety measures by taking Commission's approval on estimated expenditure is still to see light of the day. The licensee was required to provide protective and anti-climbing devices as per Rule 91 and proposal alongwith action plan for the same was to be forwarded to the Commission within a month. It may also be seen from para 16 of this Order that UPCL itself had stated that it has undertaken field survey for identification of number of transformer needing proper grounding to arrive at realistic work schedule and the licensee was directed to give action plan for neutral grounding within a month's time. Further, in para 17 of the said Order, the Commission gave categorical directions to licensee to submit action plan for earthing in the distribution system giving milestones for geographical areas/activities within a month's time. No information or proposal was submitted to the Commission within the stipulated time.
5. While the proposal from UPCL was awaited, the Commission initiated investigation of the matter discussed in para 20 of the Order dated 27.10.2008. The Commission had noted in the said para that though the cost of providing earth in distribution network is charged to the project but ground reality is that actually it is not provided and the Commission would take up this matter separately. Accordingly, the Commission, vide its notice no. 959/UERC/UPCL dated 6.11.2008 asked the licensee to submit factual position by 22.11.2008 alongwith details of estimates and actual material and labour costs for all works executed in last two years. In response, through its letter no. 1730/UPCL/RM/J-14 dated 25.11.2008, UPCL informed that the details of estimates and actual material and labour costs incurred for providing new LT/HT connection are available in field units and are being collected, which would take some more time. Accordingly, UPCL requested the Commission to allow

UPCL to submit the desired information upto 31.12.2008. The Commission extended the timeline for submission of information to 15.12.2008. Since no information was submitted in this matter, the Commission issued a notice for personal hearing to MD,UPCL on 06.01.2009 u/s 142 of the Electricity Act, 2003 to explain why appropriate action should not be taken by Commission for violation of provisions of Electricity Act, 2003 and non-compliance of Commission's directions and for appearing before the Commission on 06.03.2009. MD, UPCL, vide letter no. 2259/UPCL/RM/J-14 dated 04.03.2009 submitted that he had taken charge as MD of the company only on 25.02.2009 and is taking stock of progress made in the matter. He stated that the desired information will be filed with the Commission by 16.03.2009. He, accordingly, prayed before the Commission to exempt him to appear personally on 06.03.2009 and have a meeting on 16.03.2009 to take stock of the compliance status. He also prayed for not taking any penal action against UPCL and its officers for non-compliance of Commission's directions and IE Rules in this regard. The Commission again accepted the request of the MD and postponed the hearing in the matter.

6. In the meantime, the licensee submitted a very sketchy Action Plan for following giving timelines for 5 broad activities viz. Preparation & sanction of estimates, Inviting tender work, Tender opening & finalization, Procurement of material and Work execution (copy enclosed at **Annexure 2**) on providing the following three items:
  - a. Proper neutral earthing of Distribution Transformers
  - b. Earth wire alongwith the overhead lines
  - c. Protective device on Distribution Transformers
7. The proposal showed initiation of requisite activities from November 2008 and completion of all activities by March 2010 irrespective of giving any detail on the quantum of work required to be done, the estimated expenditure for the work, concrete milestones for each activity geographical areawise and as per priority and precautions to be taken as suggested by the Commission in paras 16 & 17 of Order

dated 27.10.08. The proposal, therefore, not only submitted much beyond the stipulated date of 27.11.2008, but was lacking any validation or supporting details to show a serious effort by the licensee. This gave rise to suspicion that UPCL has not actually carried out detailed analysis of requisite works but has submitted some information for complying with Commission's direction though lately. Accordingly, the Commission, vide its letter no. 1506/UERC/9/Tech/18 dated 13.02.2009, sought the progress report in the matter for period upto 31.01.2009 alongwith a direction to submit regular monthly reports in future latest by 15<sup>th</sup> day of each month.

8. In spite of the above categorical direction of the Commission to UPCL for submission of latest progress report and monthly reports, UPCL chose not to file any progress report but to file a revised action plan for providing proper neutral earthing and protective device on distribution transformers vide its letter no. 2318/UPCL/RM/J-14 dated 12.03.2009. The revised schedule not only showed slippage in these two activities with respect to those submitted earlier on 26.12.2008 but also the span of completion of activities was extended upto September 2010 instead of March 2010 submitted earlier. This clearly showed that UPCL is merely shifting the target date of completion without developing a proper plan for activity-wise/area-wise works and monitoring the same rigorously. On the accident, the detailed report was to be submitted latest by 27.11.2008, but UPCL did not submit any report till the stipulated time. In a subsequent letter no. 1897/UPCL/RM/J-14 dated 26.12.2008, UPCL submitted an action plan for transformer neutral grounding, earth wire and protective devices. In this letter, UPCL submitted that earth wire is being provided in all new overhead lines as per Commission's directions. However, for providing earth wire in existing overhead lines, a proposal was being made, which was stated to be submitted to the Commission shortly. UPCL submitted a proposal for earthing of not only new lines but also for existing lines and stated that on approval of the Commission, a detailed plan for implementation of the same shall be submitted to the Commission. This was in-spite of an undertaking given by the licensee that all new lines are being constructed in compliance of the relevant

Rules. UPCL was already aware of the requirements under the Rules and the specified methodology by Electrical Inspector for all these works, which was also annexed with the Order dated 27.10.2008. The Commission was, therefore, convinced that UPCL is not making any serious effort in this regard and is using delay tactics for postponing such an urgent issue. Nevertheless, the Commission sent the proposal dated 12.03.2009 of UPCL to Electrical Inspector in the State to furnish his comments on the proposals vide Commission's letter no. 153/UERC/9/Tech/18 dated 05.05.2009. UPCL's proposal contained a plan for providing proper neutral earthing of distribution transformers & earth wire alongwith the overhead lines. The Electrical Inspector submitted his views on UPCL's proposal, vide his letter no. 651/ERC/HT/LT dated 04.06.2009, stating that while proposals at points A relating to providing earthwire & guarding loop in new overhead distribution lines are acceptable to him, the proposals at points B relating to providing earthwire and guarding loop in existing overhead distribution lines given by UPCL are not in accordance with relevant Rules i.e. 61, 67 & 90 of Indian Electricity Rules, 1956 and hence cannot be accepted as such.

9. The reports on the Syali accident also pointed out negligence on the part of UPCL, which have been dealt with in a separate Order on that issue. However, important causes of the Commission that UPCL has been negligent in implementing Rules 50(1), 75, 90(1), 91(2) of IE Rules, 1956 pertaining to safety, otherwise fatal accidents like the said one might have been averted. Accordingly, the Commission issued a show cause notice on 10.06.2009 to the MD, Director (Operations), Director (Projects) and CGM (Commercial), UPCL to explain as to why an action should not be taken for non-compliance of IE Rules and Commission's Orders in this regard. They were required to file their replies by 19.06.2009 and appear before the Commission on 23.06.2009. Electrical Inspector was also called for this hearing on the comments sent by him on UPCL's proposal for earthing. The hearing of 23.06.2009 was rescheduled to 28.6.2009.

10. The Commission held personal hearing with MD, UPCL alongwith his Officers and Electrical Inspector, Government of Uttarakhand on the above matter on 28.07.2009. MD, UPCL submitted that UPCL has forwarded an action plan for neutral grounding, earthing, providing protective devices and also a proposal for providing earthing in its system to the Commission and is serious in implementing the provisions of IE Rules and Commission's directions in this regard in the earnest manner. The Commission, however, expressed grave concern over non-serious attitude of UPCL and slow pace in carrying forward the requisite works for meeting the statutory requirements of safety. The Commission also warned UPCL to take corrective steps immediately and not to let such occurrences happen elsewhere.
11. On the proposal of UPCL, for earthing, Electrical Inspector's observations on providing earthing, earthwire, safety loop guard & guarding was supported by the Commission. UPCL was, therefore, directed to take care of the observations of Electrical Inspector on their proposal. The licensee filed a small one and a half page report, vide its letter no. 587/UPCL/RM/J-14 dated 24.06.2009. on the progress made till date in various activities without giving important details like comparison with what was envisaged during the period and what has been achieved, how much work is still left, what is the capital layout for the proposed works etc. and on the top of it stated that as its proposal dated 20.03.2008 has not yet been accepted by the Commission, hence the Action Plan for the same shall be submitted shortly for approval of the Commission. The Commission, as pointed out earlier also, takes strong exception of such unfounded transfer of responsibilities to the Commission and warns the licensee to be cautious in future while quoting such actions on Commission's part. The responsibility for safety is that of the concerned parties like licensee, generator, consumer and Electrical Inspector. The Commission is taking up this task of enforcing the Electricity Rules in the interest of safety of citizens of the State, which needless to say includes licensees own employees. As pointed out earlier, the devices and mechanisms for safety are specified and known to UPCL.

UPCL should immediately take up all works for which directions on safety related issues has been given by the Commission.

12. The Commission has observed in the Order dated 22.09.2009 on Syali accident matter that the lackadaisical approach in maintenance and lack of proper safety mechanism is prevalent throughout the State for entire system of UPCL for which the Commission has been asking UPCL's management to take corrective actions right from the year 2006. Moreover, absence of a safety device is really attributable to the project staff, who have not ensured its installation while constructing the line or installing the equipment. The overall responsibility of both initial installation and subsequent maintenance is that of company's management, in which it has also failed and must share responsibility for such mishaps. The responsibility for such occurrences in the present state of affairs is, therefore, collective and not individual.
13. The Commission has also stated that it is dismayed at the indifferent and insensitive attitude of the licensee's management towards human life. The situation has been aggravated by the practice of making small savings in safety devices while constructing and installing the line/apparatus, which is not only costing very dearly to the citizens of the State in terms of their lives but is also difficult and expensive to correct now. As UPCL is taking up and has promised to adhere to its programme of making its system safe, the Commission is not initiating any punitive action this time. However, the Commission has pointed out that it is high time for UPCL's management to do an introspection of the deficiencies in the area of safety and carry out the requisite corrections at war footing level with utmost sincerity to avoid any mishap in future. In case, the Commission does not find reasonable progress in regard, it shall be constrained to resort to coercive measures for enforcement of safety rules as human lives cannot be put at stake at any cost.
14. The licensee is directed to submit detailed updated progress reports and the detailed Action Plans as pointed out earlier in this Order latest by 30.10.2009, whereafter it should ensure timely submission of monthly progress reports by 10<sup>th</sup> of every month.

15. The licensee has also not given actual details of project costs for last two years for which the Commission hereby grants last opportunity to it to file the same before 31.10.2009.

(Anand Kumar)  
Member

(V.J. Talwar)  
Chairman

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कार्यालय  
विद्युत निरीक्षक, उत्तराखण्ड शासन,  
पंचायतघर, बड़ी मुखानी, निकट हीरा कान्क्वेंट स्कूल  
हल्द्वानी (नैनीताल)

संख्या-655/ वि०नि०उ०/ निरीक्षण - नियामक आयोग  
सेवा में,

दिनांक 12/9/08

सचिव,  
राज्य विद्युत नियामक आयोग,  
उत्तराखण्ड देहरादून।

विषय भारतीय विद्युत नियमावली 1956 के नियम 88 एवं 91 के सम्बन्ध में।  
प्रसंग आपका पत्र सं० 732 / यू.ई.आर.सी./08 दिनांक 10-09-08।  
महोदय,

निवेदन है कि उपरोक्त विषयक प्रासांगिक पत्र के सन्दर्भ में भारतीय विद्युत नियमावली 1956 के नियम 88 एवं 91(1) के अन्तर्गत द्वारा अनुमोदित सुरक्षा साधन /युक्तियों का विवरण निम्न है :-

- 1- उच्च वोल्टेज ओवर हेड लाईन में गार्डिंग की व्यवस्था इस प्रकार की जानी चाहिये कि गार्ड वायर उस प्रत्येक बिन्दु पर जहाँ कि इलैक्ट्रिकल कन्टीन्यूटी ब्रेक होती हो वहाँ पर अर्थ से कनेक्ट किया जाना चाहिये। गार्ड वायर एवं कौंस कनेक्टेड वायर्स की करेन्ट कैरिंग क्षमता पर्याप्त होनी चाहिये ताकि सजीव तार गिरने की स्थिति में लाईन के निर्जीव होने के पूर्व गार्ड वायर के टूटने अथवा पिघलने की स्थिति न हो। गार्ड वायर की ब्रेकिंग स्ट्रेन्थ 635 के०जी० से कम न हो। ड्राईंग संलग्न है। गार्डिंग इस प्रकार की जायेगी कि सजीव वायर के टूटने की स्थिति में जमीन पर गिरने के पूर्व ही निर्जीव हो जाये।
- 2- एल०टी० एवं मीडियम वोल्टेज ओवर हेड लाइन में सेप्टी लूप गार्ड की व्यवस्था पोल के दोनो ओर " 1 मीटर से 1.5 मीटर की दूरी पर इस प्रकार की जायेगी कि सजीव तार टूटने की स्थिति में जमीन पर गिरने से पूर्व निर्जीव हो जाये। ड्राईंग संलग्न है तथा एल०टी० ओवर हेड लाईनों में उक्त युक्ति हेतु स्पेशर की व्यवस्था भी कराई जा सकती है।
- 3- ओवर हेड लाइन में लगे कन्टीन्यूस अर्थ वायर से गार्ड वायर को एक कि०मीटर में कम से कम तीन बिन्दुओं पर भूयोजित कराया जाय।
- 4- हाई एवं एक्स्ट्रा हाई वोल्टेज लाइनों के पोल्स पर एन्टीकलाइम्बिंग डेवाइस /कटीले तार की व्यवस्था कराई जाय ताकि अनाधिकृत व्यक्ति पोल पर न चढ़ सके। एल०टी० ओवर हेड लाईन के पोल्स पर भी ध्यानाकर्षक स्थानों पर अनाधिकृत व्यक्तियों के पोल पर न चढ़ने की चेतावनी अंकित हो।

उपरोक्त आपकी सेवा में सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है।

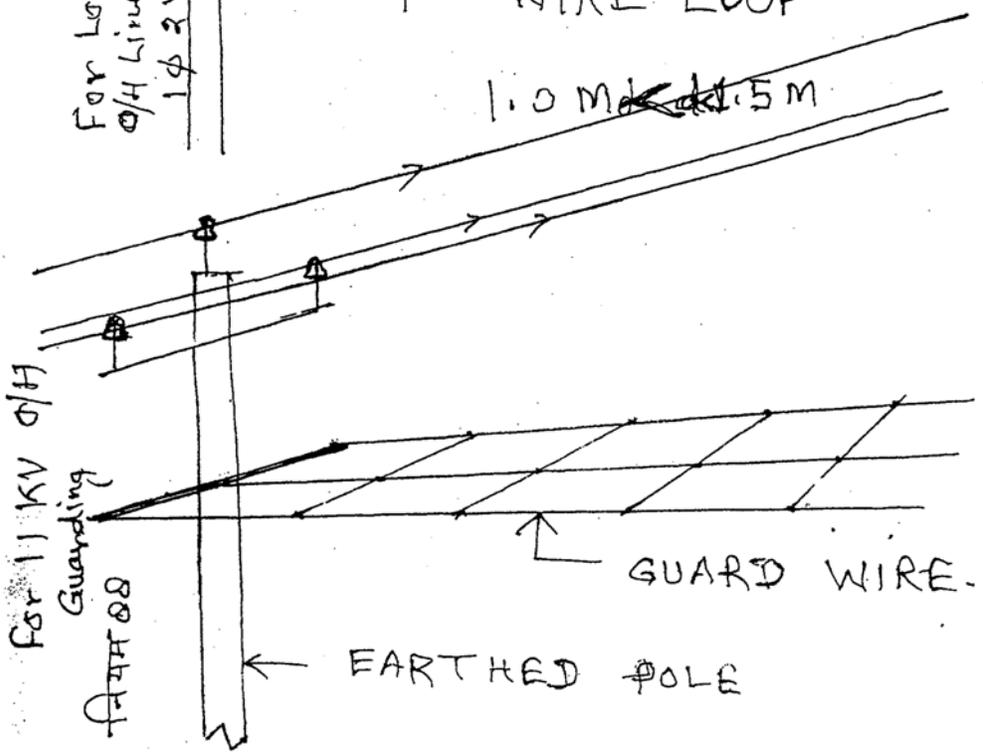
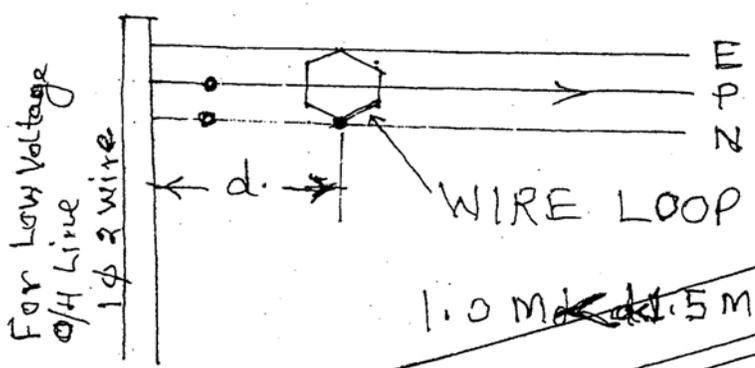
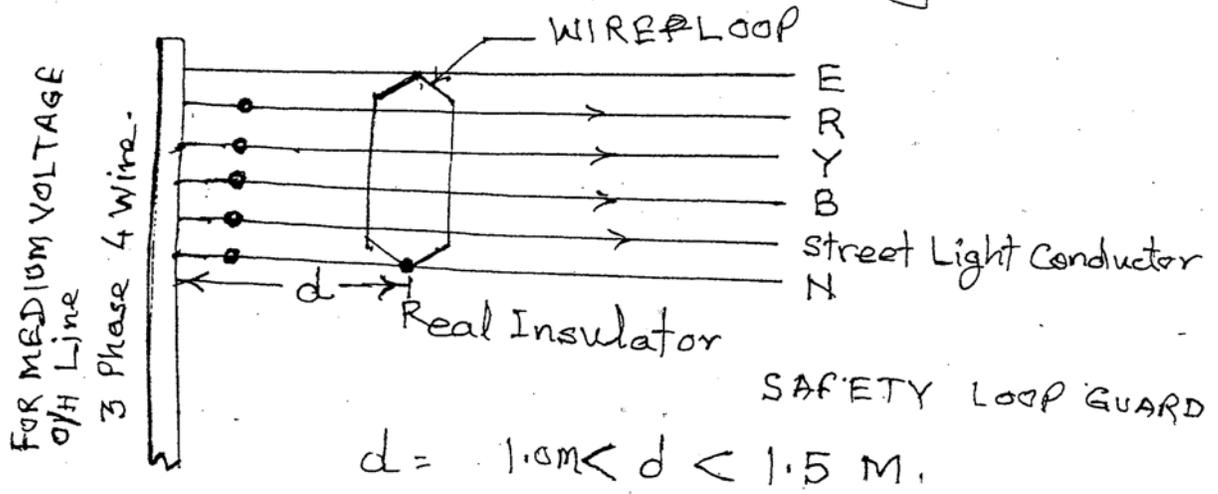
संलग्नक- यथोपरि

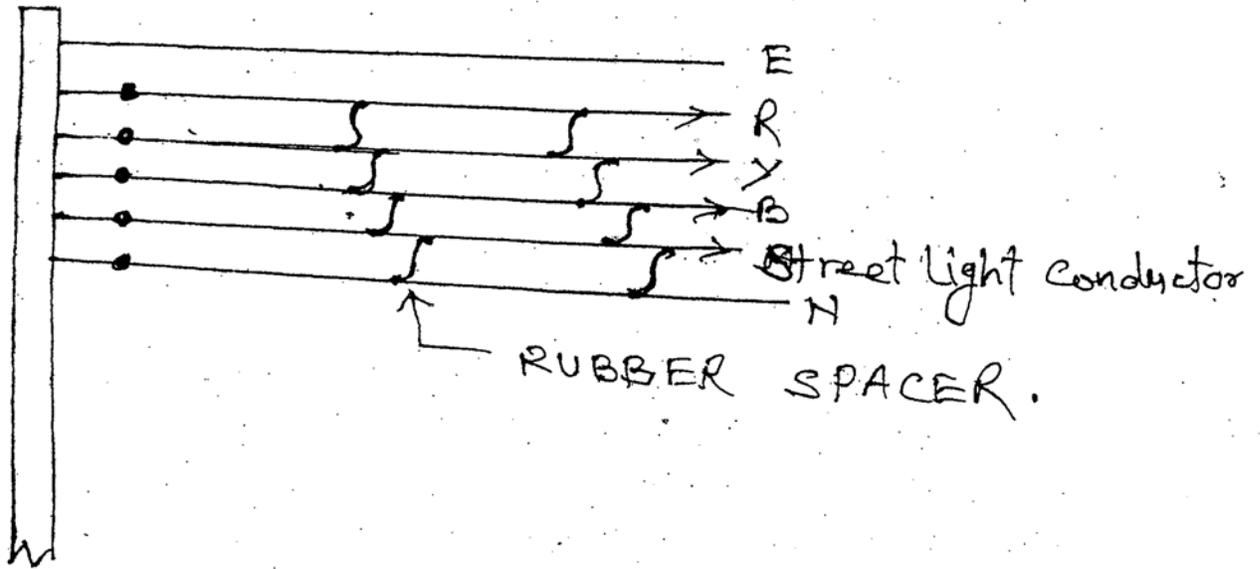
भवदीय

  
गोपालजी कपूर

विद्युत निरीक्षक उत्तराखण्ड शासन

नियम 91(1) के अन्तर्गत गाड़िंग अन्वय युक्तिया





Uttarakhand Power Corporation Ltd.  
(A Govt. Of Uttarakhand Undertaking)  
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उत्तराखण्ड पावर कारपोरेशन लि०  
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ऊर्जा भवन, कौवली रोड,  
देहरादून - 248001  
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ई०पी०बी०एक्स०-2763672-75

No. 1291

UPCL/RM /J-14

Dated: 26-12-2008

Secretary,  
Uttarakhand Electricity Regulatory Commission,  
Institution of Engineers (I),  
(Adjacent to 132-KV Sub-station, Majra),  
Saharanpur Road, Near ISBT, Dehradun.  
Fax No.-0135-2641314

**Sub: Compliance of directions issued by Hon'ble Commission in its order dated 27-10-2008 in the matter of UPCL for not providing proper neutral grounding in the Distribution Transformers and proper earth wire alongwith the overhead lines of its Distribution System.**

Sir,

In compliance of directions issued by Hon'ble Commission in its order dated 27-10-2008 in the matter of UPCL for not providing proper neutral grounding in the Distribution Transformers and proper earth wire alongwith the overhead lines of its Distribution System, kindly find enclosed herewith the action plans with respect to the following:

1. Action plan for providing proper neutral earthing of Distribution Transformers.
2. Action plan for providing earth wire alongwith the overhead lines.
3. Action plan for providing protective device on Distribution Transformers.

The report on investigation of the matter of accident in village Syali is being prepared and submitted to Hon'ble Commission shortly.

Yours faithfully,

(P.P. Sharma)

Chief General Manager (Commercial)

CC: PS to MD/D(F)/D(O), UPCL.

**Action Plan for Providing Proper Neutral Earthing of Distribution T/F in UPCL**

**Name of Organisation : UPCL**

S. No.	Activity	11/08	12/08	01/09	02/09	03/09	04/09	05/09	06/09	07/09	08/09	09/09	10/09	11/09	12/09	01/10	02/10	03/10
1	Preparation & Sanction of Estimate																	
2	Inviting Tender Work																	
3	Tender opening & finalization																	
4	Procurement of Material																	
5	Work Execution																	

  
 Director (C)

## Action Plan for Providing Earth wire alongwith the overhead Lines in UPCL

Name of Organisation : UPCL

S. No.	Activity	12/08	01/09	02/09	03/09	04/09	05/09	06/09	07/09	08/09	09/09	10/09	11/09	12/09	01/10	02/10	03/10
1	Preparation & Sanction of Estimate																
2	Inviting Tender Work																
3	Tender opening & finalization																
4	Procurement of Material																
5	Work Execution																

  
 Director (O)

**Action Plan for Providing Protective device on Distribution Transformers**

**Name of Organisation : UPCL**

S. No.	Activity	12/08	01/09	02/09	03/09	04/09	05/09	06/09	07/09	08/09	09/09	10/09	11/09	12/09	01/10	02/10	03/10
1	Preparation & Sanction of Estimate																
2	Inviting Tender Work																
3	Tender opening & finalization																
4	Procurement of Material																
5	Work Execution																

  
 Director (D)