



भारत सरकार Government of India
विद्युत मंत्रालय Ministry of Power
केंद्रीय विद्युत प्राधिकरण Central Electricity Authority
क्षेत्रीय निरीक्षण संगठन (उत्तर) Regional Inspectorial Organization(North)
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संख्या : NRIO/Misc-43/Accidents/2016/1063

Dated: 06-07-2016

To

✓ Shri Arun Kumar
Dy. Chief Engineer
O&M Circle,
BBMB Bhiwani,
Haryana - 127021

Subject: - Inspection Report of Electrical Accident happened at Brahma colony, Bhiwani on 220 kV Bhiwani-Dadri transmission line of Bhakra Beas Management Board (BBMB) on 11.05.2013.

BBMB vide their letter no. 3527 dated 19.05.2016 submitted Form-A to CEA regarding electrical accident happened on 11.05.2013 at Brahma colony, District Bhiwani. The following facts have been given in the report:

1. On 11.05.2013 at 11:45 hrs. tripping of 220 kV Dadri-Bhiwani Ckt-II happened with fault location 23.65 km from Charkhi Dadri end due to earth fault on Y-Phase;
2. On patrolling it was found that an accident happened between tower No. 41 and 42 of 220 kV Bhiwani-Dadri Ckt. No. II transmission line corridor passing through Brahma Colony, Bhiwani;
3. Some children were flying kite near tower No. 42 and due to entanglement of kite string in the 220 kV line, three children electrocuted and got sustained burn injuries, out of them one child died on 21.05.2013;
4. After tripping, the line was charged at 12:21 hrs. A copy showing the details of tripping/charging of the said line was enclosed.

On submission of the Form-A, BBMB was asked to submit the other details like actual ground clearance of the bottom conductor of the said line at the point of accident and minimum clearance of the line between tower no. 41-42 and 42-43 etc. BBMB vide their letter No. 3006-07 dated 21.06.2016 submitted the ground clearance of the line near site of accident and photographs while taking the measurements. It was submitted that the site of accident is 35.6 m away from tower No. 42 and the ground clearance of the bottom conductor is 12.6 m at the site of accident. The minimum ground clearance of the bottom conductor

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between the span of tower no. 41-42 is 8.6 m and between tower no. 42-43 is 8.5 m and the ground clearance of the bottom conductor at tower location no. 41, 42 and 43 is 14.85 m, 14.95 m and 14.92 m respectively.

For verification of the above facts, a visit at the site of accident was done by Deputy Director, RIO (North), CEA on 23.06.2016 and following are the observations and conclusions:

Observations:

- i) The site of accident was approx. 35 m away from the tower no. 42 in the corridor of 220 kV double ckt. transmission line and the ground clearance of the bottom of the conductor was about 12.5m.
- ii) The line corridor was found encroached and many houses have been built under the line.

Conclusions:

- i) The ground clearance (12.5 m) of the line was found to be adequate. The minimum clearance required for 220 kV voltage line as per the CEA (Measures relating to Safety and Electric Supply) Regulations, 2010 is 7.1 m.
- ii) It seems to be a case of earth fault of 220 kV EHV line due to entanglement of kite string in the Y Phase conductor which is the bottom conductor. The line tripping mechanism has operated successfully from both the ends. Although the line tripped within milliseconds and supply from both the ends was cut off (as per tripping/fault report), however, the heavy current flowing in the line due to earth fault proved fatal for the child who electrocuted in the accident.
- iii) As per Regulation 61 (1) of CEA (Measures relating to Safety and Electric Supply) Regulations, 2010, an overhead line shall not cross over an existing building as far as possible and no building shall be constructed under an existing overhead line. BBMB has issued notices to the house owners who have encroached the line corridor. However, it is to mention that as per Regulation 61(2) & 61(3) the vertical and horizontal clearance from the buildings between tower no. 42 and 43 was found to be adequate.

However, here it is worth mentioning that there were following lapses at the BBMB end:

1. BBMB did not obtained the approval for the energisation of the line neither under regulation 43 nor under regulation 30 of the CEA (Measures relating to Safety and Electric Supply) Regulations, 2010 or erstwhile applicable Electricity Rules, 1956 from CEA.
2. BBMB has not followed the procedure for intimation of electrical accident as given in "The intimation of accidents (Form and Time of Service of Notice) Rules, 2005 made under section 176(2)(w) of the Electricity ACT, 2003.

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Therefore, BBMB is advised to follow the proper procedure for intimation of electrical accidents and get its installation inspected as per laid down rules and regulations.

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06/7/2016

(Prakash Khichi)
Deputy Director
RIO (North), CEA

CC: Chief Engineer, Chief Electrical Inspectorate Division, CEA