



सत्यमेव जयते

भारत सरकार/Government of India
विद्युत मंत्रालय/Ministry of Power
केन्द्रीय विद्युत प्राधिकरण/Central Electricity Authority
विद्युत प्रणाली अभियांत्रिकी एवं प्रौद्योगिकी विकास प्रभाग
Power System Engineering & Technology Development Division

दिनांक: 08.10.2026

सेवा में,

<As per attached list>

विषय: Minutes of the Meeting of the Standing Committee of Experts to investigate the failure of 220 kV and above voltage level transmission line towers during the period of January 2026 to June 2026 -reg.

महोदया/महोदय,

A meeting of the Standing Committee of Experts to investigate the failure of 220 kV and above voltage level transmission line towers that occurred during the period from January 2026 to June 2026, was held in physical mode on **24.08.2026 (Monday)** at **10:30 a.m.** in Manthan Conference Hall, 2nd floor, Sewa Bhawan, R.K. Puram, New Delhi.

In this regard, minutes of the meeting of the Standing Committee are enclosed herewith for kind information and necessary action by all concerned.

Encl.: As above

भयदीय
Digitally signed by
Kavita Jha
Date: 08-10-2026
10:52:46
(Kavita Jha)

Director & Member Secretary of the Committee

Copy to:

1. SA to Chairperson, CEA
2. SA to Member (PS), CEA
3. PS to Chief Engineer (PSE&TD), CEA

ADDRESS LIST:

Director General, Central Power Research Institute, P B No.8066, Sadashivnagar PO, Prof. Sir C V Raman Road, Bangalore - 560 080 dgcpri@cpri.in mchandra@cpri.in	Member-Secretary, Southern Regional Power Committee No. 29, Race Course Cross Road, Bengaluru- 560009 mssrpc-ka@nic.in
Member-Secretary Western Regional Power Committee F-3, MIDC Area, Marol, Opposite SEEPZ, Central Road, Andheri (East), Mumbai- 400093 ms-wrpc@nic.in	Member-Secretary Eastern Regional Power Committee 14, Golf Club Rd, Golf Gardens, Tollygunge, Kolkata, West Bengal- 700033 mserpc-power@nic.in
Member-Secretary Northern Regional Power Committee, 18-A, Qutab Institutional Area, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi 110016 ms-nrpc@nic.in	Member Secretary, North Eastern Regional Power Committee, NERPC Complex, Dong Parmaw, Lapalang, Shillong – 793006 (Meghalaya). nerpc@ymail.com
Director, TCD, CEA, Sewa Bhawan, R.K. Puram, New Delhi tcdcea@nic.in	Head of the Department, Civil Engg., Delhi Technological University, Shahbad Daulatpur, Bawana Road, Delhi-110 042 (Fax No.011-27852188) ksinghdce@gmail.com
Director, Structural Engineering Research Centre, CSIR Campus, Taramani, Post Box No.8287, Chennai-600113 (Fax No.044-22641734) director@serc.res.in	Director General, India Meteorological Department, Mausam Bhawan, Lodhi Road, New Delhi- 110 003 (Ph.011-24616051) directorgeneral.imd@imd.gov.in dgmmt@gmail.com m.mohapatra@imd.gov.in
Chairman & Managing Director, Madhya Pradesh Power Transmission Co. Ltd. Block No.2, Shakti Bhawan, Rampur, Jabalpur (M.P.) – 482008. md@mptransco.nic.in kshamashukla@mptransco.nic.in	Chairman, Karnataka Power Transmission Corporation Limited No. 82, Shakti Bhawan, Race Course Road, Bengaluru – 560001 md@kptcl.com mdkptcl@gmail.com ceepnc@kptcl.org etrlinepnc@kptcl.org aee9tech@kptcl.org

Managing Director, Maharashtra State Electricity Transmission Company Ltd., C-19, E-Block Prakashganga, Bandra-Kurla Complex Bandra(E), Mumbai 400051. dirop@mahatransco.in md@mahatransco.in	Chief Engineer (Transmission), Jharkhand Urja Sancharan Nigam Ltd. (JUSNL) Engineering Buliding, HEC, Dhurwa, Ranchi – 834004 mdjusnl@gmail.com
Managing Director, Himachal Pradesh Power Development Corporation Ltd. Barowalia House, Khalini Shimla - 171004 md@hppcl.in	Chairman & Managing Director, Transmission Corporation of Andhra Pradesh Vidyut Soudha, Gunadala, EluruRd, Vijayawada, Andhra Pradesh 520004 ce.trans@aptransco.gov.in surendrababu.karreddula@aptransco.co.in
Chairman, Gujarat Urja Vikas Nigam Ltd. Sardar Patel Vidyut Bhawan, Race Course, Vadodara- 390 007 md.guvnl@gebmil.com	Managing Director, Gujarat Energy Transmission Corporation Ltd. Sardar Patel Vidyut Bhawan, Race Course, Vadodara- 390007 Ph.: 0265-2353085 md.getco@gebmil.com
Chairman & Managing Director, Orissa Power Transmission Corporation Ltd. Janpath, Bhubaneswar- 751 022. cmd@optcl.co.in dir.operation@optcl.co.in	Director (Operations), Rajasthan Rajya Vidyut Prasaran Nigam Ltd. Vidyut Bhawan, Jyoti Nagar, Jaipur (Rajasthan) Ph.: 0141-2740814 dir.oper@rvpn.co.in cmd.rvpn@gmail.com
Chairman & Managing Director, Uttar Pradesh Power Transmission Corporation Ltd. Shakti Bhawan, 14-A, Ashok Marg, Lucknow- 226001 cmd@upptcl.org	Managing Director, Assam Electricity Grid Corporation Ltd. Bijulee Bhawan, Paltan Bazar, Guwahati- 781 001 managing.director@aegcl.co.in md_aegcl@yahoo.co.in cgm.ppd@aegcl.co.in
Chairman & Managing Director, Delhi Transco. Ltd. Shakti Sadan, Kotla Marg, New Delhi – 110002 md@dtl.gov.in gmom1.dtl@gmail.com dgmtoperation1.dtl@gmail.com ram.kumar@dtl.gov.in subhash40285@gmail.com	Managing Director, TANTRANSCO, 10th Floor/NPKRR Malikai, No. 144 Anna Salai, Chennai-600002 Ph.: 044-28521057 mdtantransco@tnebnet.org
West Bengal State Electricity Transmission Company Ltd (WBSETCL), Vidyut Bhawan, Block-DJ, Sector-II, Bidhan Nagar, Kolkata- 700 091. md@wbsetcl.in	Chairman & Managing Director, Chhattisgarh State Power Holding Company Ltd., Vidyut Seva Bhawan P.O. Sunder Nagar, Danganiya, Raipur- 492 013 (Chhattisgarh) mddiscom@gmail.com mddiscom@cspc.co.in
Chairman,	Chairman,

Haryana Vidyut Prasaran Nigam Ltd. Shakti Bhawan, Sector No. 6 Panchkula, Haryana - 134109, chairman@hvpn.org.in	Kerala State Electricity Board Board Secretariat, Vidyuthi Bhavanam Pattom Thiruvananthapuram - 695004 cmdkseb@kseb.in
Chairman & Managing Director, Transmission Corporation of Telangana Ltd. Vidyut Soudha, Khairatabad, Hyderabad - 500082 cmd@tstransco.in	Managing Director, Bihar State Power Transmission Company Ltd. Vidyut Bhawan, Bailey Road Patna - 800021 mdcellbsptcl@gmail.com sunil2008iitd@gmail.com
Managing Director, Power Transmission Corporation of Uttarakhand Ltd. , Vidyut Bhawan, Saharnpur Road, Near I.S.B.T. Crossing, Dehradun, Uttarakhand - 248002 md@ptcul.org ee_tande_ksp@ptcul.org asi_baig@ptcul.org	Chairman & Managing Director, Punjab State Transmission Corporation Ltd. The Mall, Mall Road, Patiala - 147001, Punjab cmd@pstcl.org se-tlsc-pta@pstcl.org
Managing Director, Jammu & Kashmir State Power Transmission Corporation Ltd. Exhibition Ground, Jahangir Chowk, Srinagar (J&K) - 190009 md@jkspdccl.com mdjkptcl1@gmail.com	The Engineer-in-Chief, Power and Electricity Deptt., Govt. of Mizoram, Power House, Bara Bazar, Aizwal, Mizoram- 796 001, eincpower@gmail.com eincplanning@gmail.com mizoplan@gmail.com
Chairman & Managing Director, Meghalaya Energy Corporation Ltd. Lumjingshai Short Round Road, Shillong- 793001. ewnong@yahoo.com directormeptcl@gmail.com cetranzemepcl@gmail.com meecl.webportal@gmail.com apborkharpan@gmail.com	Chief Engineer (P), Manipur Electricity Department Govt. of Manipur, Manipur Sectt. South Block, Imphal, Manipur- 795 001. md.mspcl@gmail.com ed.tech.mspcl@gmail.com sandei@ymail.com
Chief Engineer, Nagaland Deptt. of Power, Kohima, Nagaland- 797 001 cetranngen@gmail.com asang.dcare@gmail.com secyit-ngl@nic.in vizo123@gmail.com namheu@gmail.com	Chief Engineer (Power), Department of Power, Govt. of Arunachal Pradesh, Itanagar (Arunachal Pradesh) - 791111 setrans26@gmail.com tklara@hotmail.com vidyutarunachal@rediffmail.com vidyutarunachal@gmail.com
Chairman & Managing Director, Tripura State Elec. Corporation Ltd. Govt. of Tripura, Bidyut Bhawan, Agartala- 799 001. managing.director@tsecl.in	Chairman & Managing Director, Chhattisgarh State Power Transmission Company Limited, Vidyut Seva Bhavan, Danganiya, chairman@cspc.co.in mdtransco@cspc.co.in

director.technical@tsecl.in cmd.tsecl@rediffmail.com	
Chairman & Managing Director, Rajasthan Rajya Vidyut Utpadan Nigam Ltd. Vidyut Bhawan, Jyoti Nagar, Jaipur (Rajasthan) cmd@rrvun.com dir.oper@rvpn.co.in	Managing Director, Jammu & Kashmir State Power Development Corporation Ltd, PDD Building, Exhibition Grounds, Opposite High Court, Jahangir Chowk, Srinagar (J&K) 190009 md@jkspdcil.com
Commissioner-cum-Secretary(P), Andaman and Nicobar Electricity Department, Secretariat, Andaman and Nicobar Islands, Port Blair- 744101 secyship14@gmail.com	Secretary, Dadra & Nagar Haveli, Electricity Department, Dadar Nagar Secretariat, Silvassa- 396230 tapasyaraghav@gmail.com
Secretary, Lakshadweep Elec. Department, U.T. of Lakshyadeep, Kavaratti- 682555 lk-ktelect@nic.in	Secretary, Puducherry Elec. Department Secretariat, Puducherry- 605001 secycs.pon@nic.in secytran.pon@nic.in
Managing Director, Karnataka Power Corporation Limited No. 82, Shakthi Bhavan, Race Course Road, Bengaluru – 560001 mdkpcl@gmail.com	Chairman, Jharkhand Urja Utpadan Nigam Ltd. Engineering Building, HEC Dhurwa, Ranchi- 834004 mdjuunl2018@gmail.com
Chairman & Managing Director, West Bengal Development Power Corporation Ltd.(WBPDCL) Bidyut Unnayan Bhavan, plot 3/C, LABlock, Sector-III, Salt Lake City, Kolkata - 700 098 wbpdcl@wbpdcl.co.in	Managing Director, Chhattisgarh State Power Generation Company Ltd., Vidyut Seva Bhawan P.O. Sunder Nagar, Danganiya, Raipur- 492 013(Chhattisgarh) mdgenco@cspc.co.in
Chief Engineer (Elect.), Goa Electricity Department Vidyut Bhawan, Panaji, Goa- 403001 cee-elec.goa@nic.in elec.goa@nic.in	Chairman & Managing Director, U.P. Rajya Vidyut Utpadan Nigam Ltd., Shakti Bhawan,14- Lucknow 226001 cmd@upptcl.org
Managing Director, Bihar State Power Generation Company Limited 5th Floor, Vidyut Bhawan, Bailey Road, Patna (Bihar) md.bspgcl@gmail.com	Managing Director, Sikkim Power Development Corporation Ltd. 31-A, N.H. Way, Gangtok-737101 sikkim.serc@gmail.com
Chairman & Managing Director, TANGEDCO, 10th Floor/NPKR Ramasamy Malikai, No. 144, Anna Salai, Chennai – 600 002 chairman@tnebnnet.org	Chairman & Managing Director, POWERGRID, Saudamini, Plot No.2, Sector 29, Near IFFCO Chowk, Gurgaon – 122 001 cmd@powergrid.in

Chairman & Managing Director, NTPC Ltd. NTPC Bhawan, Core 7, Scope Complex 7, Institutional Area, Lodhi Road, New Delhi- 110003 cmd@ntpc.co.in amanna@ntpc.co.in kamalverma@ntpc.co.in shipratyagi@ntpc.co.in dhananjaykumar@ntpc.co.in	Chairman & Managing Director, THDC INDIA LTD. Pragatipuram, Bye Pass Road, Rishikesh, Uttarakhand- 249201 cmd@thdc.co.in
Chairman, Bhakra Beas Management Board, Sector -19B, Madhya Marg, Chandigarh - 160019 cman@bbmb.nic.in	Chairman & Managing Director, SJVN LIMITED, Himfed Building, New Shimla 171009 sectt.cmd@sjvn.nic.in nandlal.sharma@sjvn.nic.in
Chairman & Managing Director, NEEPCO Ltd. Brookland Compund, Shillong- 793003 vksnhpc@yahoo.co.in	Chairman & Managing Director, Damodar Valley Corporation (DVC), Head Quarter, DVC Towers, VIP Road Kolkata - 700054 chairman@dvc.gov.in dharmadas.tripathi@dvc.gov.in
Chairman & Managing Director, NLC India Limited, Cuddalore District, Tamilnadu cmd@nlcindia.in	Chairman & Managing Director, NPCIL, Nabhikiya Urja Bhavan, Anushaktinagar,Mumbai-400094 npciltecrectt@npcil.co.in
Chairman & Managing Director, National Hydro Power Corporation Ltd. Corporate Office, NHPC Office Complex, Sector 33, Faridabad, Haryana- 121003, cmd@nhpc.nic.in	Shri E.V. Rao, KEC International Limited, RPG House, 463, Dr. Annie Besant Road, Worli, Mumbai-4000 03 raoev@kecrpg.com kecindia@kecrpg.com
Chairman, Resonia Limited (erstwhile Sterlite Power Transmission Ltd.), The Mira Corporate, Suit, Plot No. 1&2, C Block, 2nd Floor, Ishwar Nagar, Mathura Road, New Delhi - 110065 rohit.gera@sterlite.com tan.reddy@sterlite.com kamlesh.garg@sterlite.com arun.sharma1@sterlite.com	Shri Milind Nene, Dy. President, Kalpataru Power Transmission Ltd., Plot No. 101, Part-III, GIDC Estate, Sector-28, Gandhinagar-382028, Gujarat kaushal.thakkar@kalpatarupower.com thakkarkaushal86@yahoo.com ajay.tripathi@kalpatarupower.com milind.nene@kalptarupower.com
Mr. Bipin B. Shah, Vice President-Transmission, Torrent Power Limited, 3rd Floor, Jubilee 2 House, Shahpur, Ahmedabad-380001 NAMANSHAH@torrentpower.com MAYANKGUPTA@torrentpower.com	Shri P.G. Suresh Kumar, Director, L&T IDPL, Kudgi Transmission Ltd., 1 st Floor, TCTC Building, Mount Poonamallee Road, Manapakkam, Chennai-600 089 pgsk@Lntidpl.com

bipinbshah@torrentpower.com kashyapdesai@torrentpower.com	csr@Intecc.com
Sr. Vice President, M/s Adani Power Limited, 7th Floor, Sambhav Building, Judges Bungalow Road, Bodakdev, Ahmedabad, Gujrat- 380015 Anil.sardana@adani.com praveen.tamak@adani.com sameer.ganju@adani.com sunnykumar.singh@adani.com	Director General, Electric Power Transmission Association (EPTA), First Floor, 6 Basant Lok, Vasant Vihar, New Delhi - 110070 dg.epta@epta.in epta.dg@gmail.com
Shri Suresh Reddy, Director, L&T Infrastructure Development Projects Limited (L&T IDPL), L&T campus TCTC building , First Floor, Mount Poonamalle Road, Manapakkam, Chennai, Tamil Nadu -600089, contactus@Intidpl.com csr@Intecc.com	Chairman & Managing Director, Neyveli Lignite Corporation Limited Corporate Office, Block -1 Neyveli – 607801 cmd@nlcindia.in
Chairman & Managing Director, Reliance Power, Reliance Centre, Ground Floor 19, Walchand Hirachand Marg, Ballard Estate, Mumbai 400 001 reliancepower.investors@relianceada.com rpower.mcafilling@relianceada.com reliancepower.ipo@relianceada.com	Shri Vijayanand Semletty, Associate Director-Commercial Regulatory, Sekura 503A, Windsor, Off CST Road, Kalina Mumbai-400098 Vijayanand.Semletty@Sekura.in Neeraj.Verma@energy-sel.com Nimish.Sheth@energy-sel.com
Director, Darbhanga – Motihari Transmission Co. Ltd. 6th Floor, Plot No. 19 & 20, Film City, Sector 16-A, Noida, Uttar Pradesh-201301 Neeraj.Verma@Sekura.in Nimish.Sheth@Sekura.in Vijayanand.Semletty@Sekura.in	Chairman and Managing Director, M/s Juniper Green Transmission Private Limited rohit.gera@junipergreenenergy.com rohit.gera91@gmail.com
Chairman & Managing Director, Tata Power, NDPL House, Hudson Lines, Kingsway Camp Delhi-110009 BD@tatapower.com neeraj.srivastava@tatapower.com piyushkumar@tatapower.com nitin.kumar@tatapower.com vrshrishande@tatapower.com	Chairman & Managing Director, M/s ReNew Transmission Ventures Private Limited anuj.jain@renewpower.in mohit.jain@renewpower.in amit.kumar1@renewpower.in Pankaj.kumar@renew.com
Director, M/s. G.R. Infraproject limited, transmission@grinfra.com ashwin@grinfra.com modassar.a@grinfra.com akul.s@grinfra.com	Chairman & Managing Director, M/s Apraava Energy Private Limited Rajiv.mishra@apraava.com naveen.munjali@apraava.com roshni.shah@apraava.com sumit.sinha@apraava.com

	siddhartha.ghosh@apraava.com
CMD, M/s Megha Engineering & Infrastructures Ltd., jsrinivaskumar@meilgroup.in	Shri I R Venkatraman (Head & VP - Regulatory & Contracts), Indiegriid Unit No. 101, First Floor, Windsor, Village KoleKalyan, off CST Road, Vidyanagari Marg, Kalina, Santacruz (East), Mumbai - 400098 venkatraman.inumula@indigrid.com vivek.karthikeyan1@indigrid.com
Shri Gulam Mir Mohd., Electric M &RE Division, Choglamsar, Leh-Ladakh194101 cepladakh@gmail.com	Chairman & Managing Director, Pragati Power Corporation Limited, Himadri, Rajghat Power House Complex, New Delhi - 110002 md.ipgpp@nic.in
Sh. Partha Bhattacharya, Essar Power, 27th KM, Surat Hazira Road, District Surat, Hazira, Gujarat 394270 Tamendra.Kumar@essarpower.co.in Rajive.Tiwari@essarpower.co.in Rajat.Bajpai@essarpower.co.in khilendra.pant@essarpower.co.in	Suzlon Renewable Development Limited "Suzlon House", 5 Shrimali Society Near Shree Krishna Centre, Navrangpura, Ahmedabad - 380009. marketing.india@suzlon.com Nilesh.Randave@suzlon.com

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1. Index for Tower failure reported for the period from January, 2026 to June, 2026

S. N.	Name of Utility	Region of Failure	Date of occurrence of Failure	Date of intimation of failure	Name of EHV Line
1	PGCIL	NR	03.05.2026	04.05.2026	765 kV Bhiwani-Moga Transmission line
2	PGCIL	WR	08.05.2026	09.05.2026	220 kV D/C Guna-Shivpuri Line
3	PGCIL	WR	19.05.2026	20.05.2026	400 kV D/C (Quad) Raipur PS - Dhamtari 1&2 TL
4	PGCIL	NR	28.05.2026	29.05.2026	765 kV Agra-Jhatikara Line
5	PGCIL	NR	28.05.2026	29.05.2026	400 kV ORAI (PG)-ORAI(UP)-II 400 kV Garautha (UP)-Orai(UP)-I
6	PGCIL	SR	31.05.2026	01.06.2026	400 kV D/C (Twin) Nagapattinam PS - Trichy Line-1 & 2



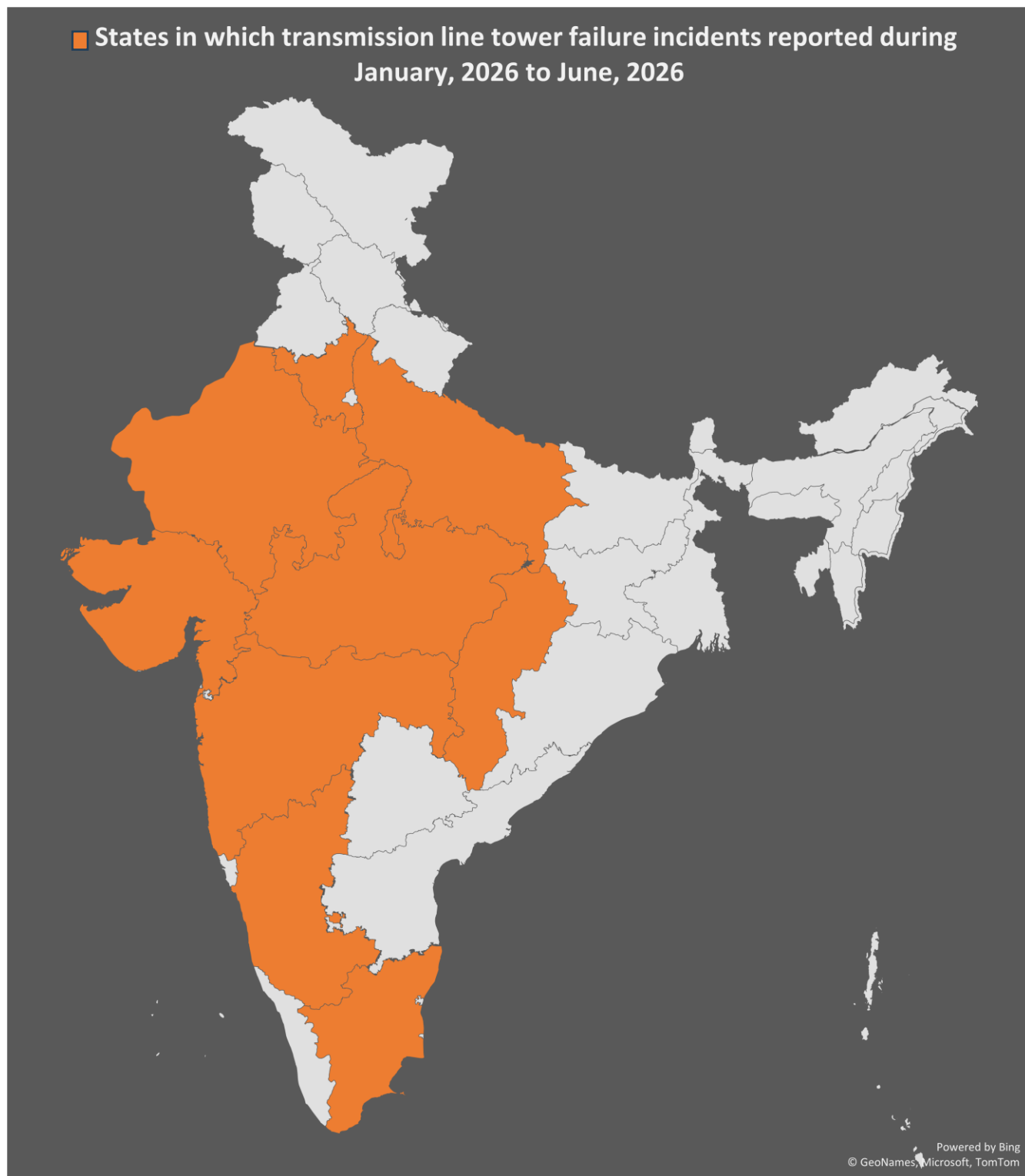
7	BBMB	NR	03.05.2 026	04.05.2 026	220 kV Charkhi Dadri- Ballabgarh Ckt 220 KV Charkhi Dadri- Samaypur Ckt (Double Circuit Line)
8	GETCO	WR	19.03.2 026	24.03.2 026	220 kV Jamnagar - Essar Line 1 & 2
9	GETCO	WR	19.03.2 026	24.03.2 026	400 kV Varsana Hadala Line / 400 kV Mundra Mansar Line
10	HVPNL	NR	28.05.2 026	29.05.2 026	400 kV D/C Khedar – Nuhiyawali
11	KPTCL	SR	14.05.2 026	21.05.2 026	400 kV KAIGA- Guttur 1 & 2
12	Renew Power	SR	23.05.2 026	23.05.2 026	400 kV Double Circuit Twin HTLS Gadag(PS) – Koppal (PS)
13	Renew Power	SR	24.05.2 026	24.05.2 026	400 kV Double Circuit Twin HTLS Gadag(PS) – Koppal (PS)
14	MAHATRAN SCO	WR	24.05.2 026	08.06.2 026	220 kV Akola-Balapur DCDC Lines



15	MP TRANSCO	WR	11.06.2 026	12.06.2 026	220 kV Satna-Kotar DCDS line
16	Vena Energy	SR	17.05.2 026	19.05.2 026	Vena Energy Vidyuth Private limited / 220 kV
17	NTPC	WR	01.05.2 026	03.05.2 026	400 kV D/C Jhabua Jabalpur Line
18	ADANI	WR	26.06.2 026	01.06.2 026	765 kV S/C AKOLA (2) – KORADI (3) LINE – 1
19	ADANI	WR	28.05.2 026	01.06.2 026	765 KV S/C AKOLA (2) – KORADI (3) LINE – 1
20	UPPTCL	NR	12.05.2 026	14.08.2 026	220 kV Bareilly(400)-CB Ganj Ckt-I
21	UPPTCL	NR	12.05.2 026	14.08.2 026	220 kV Roza - Dohna Line
22	RVPN	WR	04.05.2 026	11.08.2 026	220 kV S/C Bap- Barsingsar line



States in which transmission line tower failure incidents reported during January, 2026 to June, 2026:





2. Background

Under Section 73, Clause (I) of the Electricity Act, 2003, CEA vide office order no: 5-41/98/Secy/CEA/809 dated 24.09.1999 (**Annexure-IV**) constituted a Standing Committee of Experts in the field of design and operation of EHV transmission line towers from CEA, various transmission utilities and research/academic institutes to investigate the failure of 220 kV and above voltage class transmission line towers and recommend measures to avert recurrence of such failures in future. The Committee was reconstituted vide CEA office order no: CEA/5-41(18)/Secy-2012/166 dated 08.08.2012.

The objective of the Standing Committee is to investigate the causes of failures, deliberate the failures of transmission line towers of various Power utilities, suggest remedial measures to prevent recurrence of such events in future and prepare a report which would serve as a repository of case studies of failures and suggested remedial measures for future.

As per CEA (Measures relating to Safety and Electric Supply) Regulations, 2023, all utilities are required to report any event of failure of 220 kV & above voltage class transmission line towers **within 48 hrs**, and submit a detailed report to CEA as per stipulated format (available on CEA website and is enclosed at **Annexure-III**) covering reasons for failure and measures taken/ to be taken to avoid recurrence of such failures. As part of this activity, CEA has been receiving reports of failures of various Towers of 220 kV and above voltage class transmission lines from power utilities.

In this connection, a meeting of the Standing Committee of Experts to investigate the failure of 220 kV and above voltage class Transmission Line Towers period that occurred during the period from January, 2026 to June, 2026 was held on 24.08.2026 at CEA HQ, New Delhi under the Chairmanship of Chief Engineer (PSE&TD), CEA and Chairman of the Standing Committee. List of participants is given at **Annexure-I**.

3. Introduction

Chief Engineer (PSE&TD), CEA and Chairperson of the Standing Committee, welcomed all the representatives of the participating organizations to the meeting of the Standing Committee of Experts to investigate the failure of 220 kV and above voltage level transmission line towers during the period from January, 2026 to June, 2026.

He stated that the Standing Committee has an important role in examining transmission tower failure incidents from a technical and systemic perspective, with the objective not merely of establishing the immediate cause of an individual failure, but also of identifying the underlying design, construction,

operation and maintenance issues and recommending measures to prevent recurrence. He emphasized that the deliberations of the Committee should ultimately result in practical and implementable corrective measures for the transmission sector as a whole.

Further, He informed the Committee that, during the period under consideration, a significant number of tower failure incidents had been reported by various transmission utilities. As per the information received by CEA, 13 Nos. of utilities (PGCIL, BBMB, GETCO, HVPNL, MSETCL, KPTCL, Renew Power, MPPTCL, Vena Energy, NTPC, Adani, UPPTCL, RVPN) had reported 22 EHV transmission line failure incidents involving 86 failed towers, comprising 68 suspension towers and 18 tension towers.

He observed that a substantial proportion of the reported failures were attributed to severe weather conditions, particularly high cyclonic winds, localized whirlwinds, thunderstorms, and intense rainfall. He, however, cautioned that attributing a tower failure merely due to high wind or cyclonic conditions would not by itself constitute a complete root-cause analysis. Wherever wind has been identified as the probable cause, the same should, to the extent possible, be substantiated through authenticated meteorological information, site observations, damage patterns, nearby infrastructure damage, tower design parameters and material test results. He stressed that the Committee should distinguish between the triggering event and the underlying structural vulnerability, wherever applicable.

He further observed that several of the reported incidents involved towers which had been commissioned relatively recently. Therefore, the Committee should critically examine whether such failures could be explained entirely by extraordinary weather conditions or whether there were contributory factors relating to wind-zone selection, terrain category, reliability level, K_4 factor, drag coefficients, tower configuration, tower extensions, increased spans, design assumptions, foundation behaviour, material quality, erection practices or adequacy of maintenance. He emphasized that a tower satisfying the applicable code and having passed prescribed tests should nevertheless be examined carefully when it fails prematurely, so that any limitations in the existing design assumptions or field conditions can be identified.

(i) Need for authentic wind-speed data

Chief Engineer (PSE&TD), CEA highlighted a major issue of availability of reliable wind-speed data at the actual failure locations. It was noted that in a large number of cases the utilities had reported high wind, cyclonic wind or localized whirlwind as the cause, whereas authenticated wind-speed data corresponding to the precise location and time of failure was not readily available.

He stated that CEA had been pursuing the matter with the India Meteorological Department (IMD) for establishing a suitable procedure through which transmission utilities could obtain real-time or historical wind data from IMD's wind-sensor network for specific tower locations. He informed the Committee that CEA had taken up the matter with IMD through several communications and had also written letter to the Secretary of the Ministry of Earth Sciences for facilitating the required

mechanism. The issue therefore needs to be resolved institutionally rather than leaving individual utilities to approach different agencies on a case-to-case basis.

He advised the utilities that, wherever IMD data is not available, efforts should also, be made to obtain authentic supporting information from other reliable sources such as nearby airports, wind farms, State agencies or other authorized meteorological installations, while clearly recording the source and limitations of such data.

(ii) Revision of Wind-Zone Map

Chief Engineer (PSE&TD), CEA also apprised the Committee of the continuing work regarding revision of the Wind-Zone Map of India by CSIR-SERC. He informed that, based on the recommendations emerging from earlier meetings of the Standing Committee, CEA had requested CSIR-SERC on 08.07.2025 to undertake revision of the existing wind-zone map, considering the need to appropriately reflect present-day wind conditions and localized high-wind phenomena. A meeting had subsequently been held in CEA on 16.10.2025, during which IMD was requested to provide the requisite meteorological data to CSIR-SERC for carrying out the study. CEA had again taken up the matter with CSIR-SERC vide its letter dated 30.07.2026, and the response regarding the present status of the revision was awaited.

He stated that this work assumes particular importance in view of the repeated tower failures attributed to high or localized cyclonic winds. The revised wind-zone assessment should provide a stronger scientific basis for future tower design and for deciding appropriate design parameters in areas where existing wind-zone boundaries may not adequately represent localized wind hazards.

(iii) Reference to work of other technical committees

Chief Engineer (PSE&TD), CEA further stated that the issues emerging from tower failures are closely interconnected with the work being undertaken by other technical committees constituted under Chief Engineer (PSE&TD) Division, CEA, and that the Committee should take advantage of the findings of these parallel exercises.

He informed the Standing Committee that the **Report of the Committee on Addressing Insulator Failures on Transmission Lines was issued in May, 2026**. The report provides an overview of various types of insulators (Composite Long Rod/Porcelain type), the failure patterns observed across different utilities and geographical regions, and the existing technical, quality assurance and operation & maintenance practices being followed by utilities. The report identifies various gaps and recommends measures for improving the reliability and performance of insulators in the field. The recommendations include maintenance of a centralized database of insulator failures at the utility level for facilitating informed decision-making, improvements in the existing technical specifications



to address the observed gaps between the claimed life and actual service life of insulators, and improvement in storage and maintenance procedures to ensure the requisite level of performance and reliability of insulators during their service life.

He informed the Standing Committee that the **Committee on ERS Set Standardization and ERS Training Facility** is in the process of finalizing its report. The Committee had examined various aspects relating to the requirement of Emergency Restoration System (ERS), the present status of ERS availability with utilities, the manufacturing ecosystem and associated details, and the MLC and cost-weight comparison of ERS systems. The Committee is also examining the standardization of the minimum number and configuration of towers to be maintained in an ERS set, deployment of ERS systems through rental arrangements, and setting up of an ERS training facility to facilitate Class room as well as hands on/ practical training and enhance preparedness for restoration of transmission lines in case of tower failures.

He further informed the Standing Committee that the **Committee to Prepare Guidelines/Procedures for Implementation of Travelling Wave Fault Locator (TWFL) Technology** is also in the process of finalizing its report. The Committee has examined the details of On-line TWFL Technology and Off-line TWFL Technology and is undertaking a comparative assessment of the two technologies. He further stated that the Committee is working towards formulation of appropriate guidelines and recommendations for implementation of TWFL Technology, covering the technical aspects and the framework for its adoption by utilities.

(iv) Need for implementation of earlier Standing Committee recommendations and following latest Codal provisions

Chief Engineer (PSE&TD), CEA emphasized that the present Committee should not restrict itself to recording the cause of the current failures. Follow-up on recommendations made during previous Standing Committee meetings is equally important. He stated that utilities should demonstrate the Action Taken Report on previous standing committee recommendations related to:

- Status of digitization of transmission assets, spares and inventory management
- Adopted operation and maintenance practices for transmission lines
- Adoption of K_4 factor, reliability levels and drag coefficients in transmission tower design as per CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022
- Status of Conformance to latest codal provisions which is IS: 802 (2015) as of now for newly erected towers and procured spares.
- Authenticated reasons, wherever wind data could not be furnished for tower failure events, along with efforts made to obtain such data from IMD.

He stressed upon that the objective should be to move from a reactive approach (investigating a tower only after it has failed) to a preventive and predictive approach, under which vulnerable towers and transmission corridors are identified in advance and appropriate strengthening or other mitigation measures are undertaken.

He further highlighted that several failures under consideration involve towers designed under older editions of IS 802. He advised utilities to ensure that replacement towers, spare towers and strengthening schemes are based on the latest applicable standards/ Codal provisions and site-specific requirements.

He particularly stressed that where towers are located close to wind-zone boundaries or overlapping wind-zone areas, within 50 km of the border of the two wind zones specified in the Wind Map, towers shall be designed for the higher of the two wind zones. Similarly, any proposal involving unusually tower with high spans, large extensions or other deviations from normal design practice should be technically justified and dealt with in accordance with the applicable regulatory provisions and safety clearance requirements in accordance with CEA regulations. Earlier Committee deliberations had also emphasized these aspects in relation to failures of towers designed for lower wind zones.

He also emphasized the need for complete and timely submission of failure reports in the prescribed CEA proforma/format of intimation of transmission line tower failure events. The failure report should contain, as applicable, the tower design details, design code, wind zone, reliability level, terrain category, tower schedule, foundation details, maintenance history, photographs, weather information, material test results, damage pattern, restoration methodology and details of nearby infrastructure affected during the same weather event. He also reiterated that tower failure incidents should be promptly intimated to CEA within 48 hours of occurrence of the events, so that, wherever considered necessary, the Committee can undertake a site visit at the earliest opportunity. Delayed reporting can result in loss of physical evidence and makes it difficult to establish the actual sequence and mechanism of failure and also to investigate the probable cause of failure. The statistics showed that reporting timelines and site visits continue to be an area requiring improvement.

He emphasized that the ultimate objective of the Committee is not merely to assign a cause to a failed tower, but to derive sector-wide lessons and to avert such failures in future. The findings should therefore lead to actionable recommendations for utilities, designers, manufacturers and other stakeholders, including improvements in design practices, wind assessment, inspection, strengthening, spares management and emergency restoration preparedness.

Director (PSE&TD), CEA and Member Secretary of the Standing Committee welcomed all the participants present in the meeting and requested for their active participation in the meeting for fruitful discussions. She emphasized on the importance of timely reporting of tower failure incidents to CEA so that the Committee can examine the events properly and, wherever necessary, undertake



site visits to assess the causes of failure. She mentioned that timely reporting and submission of detailed information are essential for proper technical analysis of the failure events.

4. Deliberations held during Standing Committee Meeting

A. Action Taken Report (ATR) on Standing Committee Recommendations

- A.1 Chief Engineer (PSE&TD), CEA informed that CEA vide letter dated 31.07.2026 requested all Member Utilities to furnish the status of action taken with respect to the recommendations made by the Standing Committee in its previous meetings. These recommendations mainly pertained to Status of digitization of transmission assets, spares and inventory management, Adopted operation and maintenance practices for transmission lines, Adoption of K_4 factor, reliability levels and drag coefficients in transmission tower design as per CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022, Status of Conformance to latest codal provisions for newly erected towers and procured spares, Authenticated reasons, wherever wind data could not be furnished for tower failure events, along with efforts made to obtain such data from IMD.
- A.2 During the discussion, he observed that inputs from several utilities are still awaited. He advised the concerned utilities to furnish the pending information at the earliest so that the implementation status of the recommendations made by the Standing Committee could be properly reviewed.
- A.3 The Committee reiterated that the recommendations made in the previous meetings were aimed at improving the reliability of the transmission system and therefore utilities should ensure that appropriate action is taken on these recommendations and the status of implementation is communicated to CEA in a timely manner.

B. Revision of Wind-Zone Map of India by CSIR-SERC

- B.1 It was informed to the committee that CEA had requested CSIR-SERC vide letter dated 08.07.2025 to undertake revision of the existing Wind-Zone Map. Subsequently, a meeting was held at CEA on 16.10.2025, wherein IMD was requested to provide the requisite wind data to CSIR-SERC for carrying out the revision. CEA had further sought the latest status of the revision from CSIR-SERC vide letter dated 30.07.2026.
- B.2 During the discussion, the committee observed that the existing wind-zone map is based on relatively old data and therefore its revision is important from the perspective of transmission-line tower

design. The committee referred to the earlier observation that the revised map was expected to be completed by June 2026 and sought an update on the present status.

- B.3 The CSIR-SERC representative informed the Committee that the wind data from IMD, comprising a very large dataset, had been received and processing of the data had commenced. However, certain issues were encountered during processing. In particular, correlation of the recorded wind data with actual historical extreme-wind events/locations was not straight forward. Further, the time resolution/averaging period corresponding to the recorded hourly wind-speed values in the IMD data set was not clear, i.e. whether the values represented one-hour average, 10-minute average, 3-second gust or another duration. CSIR-SERC stated that clarification on these aspects had been sought from IMD and further examination of the matter in CED-57 of BIS. In this regard, CE (PSE&TD), CEA stated that as CEA has got the regulatory powers to issue regulations/ standards/ guidelines, etc. on pertinent issues; as such, in case the wind map revision is completed in all respects from CSIR/SERC end, and upholding of the same by BIS Committee is likely to take considerable time at BIS, then suitable guidelines for use of the revised wind zone map can be issued by CEA as an interim step till formalization of the same by BIS. Accordingly, CSIR-SERC has been requested to expedite completion of the revision exercise considering the importance of the issue in view of the repeated tower failures attributed to high or localized cyclonic winds.

C. Procedure for Sharing of IMD Wind Sensors' Data with Power Utilities

- C.1 The Committee reviewed the status of the procedure for sharing real-time wind-speed data from IMD wind sensors with transmission utilities. It was informed that CEA had requested IMD vide letters dated 13.03.2026, 06.04.2026, 29.05.2026 and 04.06.2026 to provide the procedure/ guidelines for obtaining real-time wind-speed data at specific transmission tower locations. As the requested details had not been received from IMD, CEA had also addressed a letter dated 30.07.2026 to the Secretary, Ministry of Earth Sciences, requesting facilitation of the matter.
- C.2 During the discussion, the Committee emphasized that authenticated wind data is an important technical parameter/ input for transmission line tower design and investigation of tower failures. It was observed that utilities should not wait until occurrence of a tower failure for obtaining such data, but should establish an appropriate mechanism and enter into an arrangement with IMD in advance for access to the relevant wind data for their transmission networks.



- C.3 The Committee further noted that, while CEA was pursuing the matter at the central level, individual transmission utilities should also take necessary steps at their end to approach IMD and establish the requisite mechanism for obtaining wind data. The matter was accordingly kept for further follow-up with IMD and the transmission utilities.

D. Deliberations on Tower Failure Incidents (January, 2026 – June, 2026):

During the period January, 2026 to June, 2026, total 13 utilities (PGCIL, BBMB, GETCO, HVPNL, KPTCL, Renew Power, MSETCL, MPPTCL, Vena Energy, NTPC, Adani, UPPTCL, RVPN) had reported 22 EHV transmission line failure incidents involving 86 failed towers, comprising 68 suspension towers and 18 tension towers. Complete details of all the reported EHV Transmission Line Tower failures are given at **Annexure-II**. The details of the deliberations of the standing committee meeting are presented in the ensuing paragraphs.

- D.1** The representative of **Power Grid Corporation of India Limited (PGCIL)** presented the tower failure incidents that occurred during the period from January 2026 to June 2026. PGCIL reported six failure events involving 220 kV, 400 kV and 765 kV transmission lines. The six incidents comprised failures on the 765 kV Bhiwani–Moga, 220 kV Guna–Shivpuri, 400 kV Raipur–Dhamtari, 765 kV Agra–Jhatikara, 400KV ORAI (PG)-ORAI(UP)-II & 400kV Garautha(UP)-Orai(UP)-I and 400 kV Trichy–Nagapattinam transmission lines. PGCIL stated that the major reported cause of the failures was heavy/localized cyclonic wind conditions. The representative further explained that the failures were associated with severe pre-monsoon weather conditions, including localized high-intensity winds. The Committee deliberated on the adequacy of available meteorological information, structural condition of the failed towers, foundation and stub condition, material test results, tower configuration and restoration measures. The transmission line-wise deliberations are mentioned below-

(i) 765 kV S/C Moga–Bhiwani Transmission Line

The representative of PGCIL informed that the 765 kV S/C Bhiwani–Moga transmission line was commissioned on 01.06.2012 and was designed for Wind Zone-IV with a design wind speed of 47 m/s. The line is of single-circuit delta configuration with Quad Bersimis conductor. The Committee was informed that 765kV S/C Moga-Bhiwani Transmission Line tripped at around 21:44 hours on 03.05.2026 due to tower collapse at location no. 84 (A+6, Delta Type) of the subject line, occurred as a result of severe thunderstorms affecting the area. However, during the patrolling carried out in the evening hours of 04.05.2026, some additional damages at tower location nos. 50 (C+9, Delta Type), 51 (B+18, Delta Type) and 52 (C+0, Delta Type) in addition to the tower location no 84 (A+6, Delta Type) were also found in the subject line. PGCIL reported severe thunderstorms as the probable cause

of failure. The line was restored on permanent towers on 15.06.2026 using the same tower design. PGCIL also informed that material samples had been tested and the test results were within permissible limits, while the wind-speed data from IMD was awaited.

The site visit of Standing Committee for this particular failure held on 08.05.2026. During the site observations, the Committee observed that, the tower at Location No. 50 (C+9) had not completely collapsed, however, the peak member on the left side had suffered bending and the same seemed to be a collateral damage due to pulling of conductor from completely collapsed tower at location no 51 (B+18). Tower Loc. No. 51 (B+18) was found fully collapsed from the bottom panel level. All the four reinforced concrete foundations, chimney portions, and tower stubs were found intact. The tower at Location No. 52 had not collapsed; however, partial damage to the cross-arms along with the cage portion on the left side had sustained damage and the same seemed to be a collateral damage due to pulling of conductor from collapsed tower at location no 51 (B+18). The tower at Location No. 84 (A+6) had sustained severe structural damage from the waist level (K-frame) up to the peak. Although the tower remained standing, the superstructure above the waist level had suffered extensive deformation and damage. No rusting or missing members were observed and the nuts and bolts were found properly tightened and tack welded. The anticlimbing devices were found missing, and the coping over the chimney was observed to be covered with mud and grass.

The Committee also observed the following during the visit:

- One 220 kV power line of M/s BBMB (Bhakra Beas Management Board) crossing exists between Tower Nos. 50 (C+9) and 51 (B+18). It was also noted that the Tower No. 50 was designed as a tension tower and was provided with tension insulator strings. However, although Tower No. 51 was designed as a tension tower, but suspension insulator strings have been used. After enquiring, PGCIL informed to the Committee that the towers had been designed as tension towers for an angle range of 0°-15°. However, Tower No. 51 was installed at 0degree angle based on site requirements.
- The Committee also observed the presence of a State Highway between Tower Nos. 83 and 84. However, suspension towers have been provided on both sides of the highway.

Chief Engineer (PSE&TD), CEA, observed that since the reported cause was heavy localized cyclonic wind, the same needed to be substantiated through authenticated wind-speed data from IMD. It was observed during the deliberations that newspaper reports and evidence of damage to nearby infrastructure could indicate occurrence of severe weather condition, however, such information by itself would not establish that the wind speed at the failed tower location exceeded the design wind speed. Chief Engineer (PSE&TD), CEA therefore emphasized the need for actual/representative wind-speed data for proper assessment of the failure mechanism. PGCIL was accordingly advised to pursue the matter with IMD and furnish the available wind-speed data to CEA along with the O&M reports of the failed towers.

However, considering the presence of the State Highway between Tower Nos. 83 and 84 and the requirement for enhanced safety and reliability at the highway crossing, the Committee recommended that the feasibility of providing **tension-type towers on both sides of the State Highway** be examined and implemented, subject to compliance with the applicable regulatory provisions and approved design requirements.

Further, W.r.to power line crossing, committee is of the view that PGCIL shall comply with the provisions of the prevailing CEA (Measures relating to Safety and Electric Supply) Regulations, 2023. As per the applicable provisions for crossings of power lines of 110 kV, 132 kV, 220 kV and 230 kV voltage classes, **tension towers with the required body extensions shall be provided on either side of the power line crossing**. Accordingly, it was recommended to ensure that the replacement of the failed tower is carried out in accordance with the applicable CEA Regulations and the prescribed requirements for the crossing arrangement.

(ii) **220 kV D/C Guna–Shivpuri Transmission Line**

The representative of PGCIL informed that the 220 kV D/C Guna–Shivpuri transmission line was commissioned in October 2022 and falls in Wind Zone-IV with a design wind speed of 47 m/s. The line has a double-circuit vertical configuration with single Zebra conductor. The failure occurred on 08.05.2026 at about 20:43 hrs. Three suspension towers, namely Loc. Nos. 123 (DA+6), 124 (DA+1.5) and 125 (DA+3), collapsed, while Loc. No. 126 (DA+0) suffered damage to the top cross-arm. PGCIL reported heavy localized cyclonic wind as the probable cause.

PGCIL informed that both circuits were initially restored through ERS arrangements, with Circuit-I restored on 17.05.2026 and Circuit-II on 21.05.2026. Permanent restoration was subsequently completed on 29.05.2026 and 30.05.2026, respectively with spare towers of the same design. PGCIL also informed that there was no previous history of tower failure on the line.

As per the information furnished, Tower Loc. No. 123 was found collapsed from waist level. Its foundation and stubs were found intact, with no rusting or missing members. At Loc. Nos. 124 and 125, the towers were found completely collapsed on one side, with broken foundation chimneys and bent stubs. At Loc. No. 126, the top-phase cross-arm was damaged, while no missing members were observed and the nuts and bolts were found properly tightened and tack welded.

Chief Engineer (PSE&TD), CEA, sought clarification regarding the reported cause of failure and emphasized that the occurrence of severe weather conditions in the surrounding area should be substantiated by reliable meteorological data corresponding to the affected location. He further enquired whether historical wind data had been considered while designing the towers. PGCIL informed that, as per the present practice, historical river data is considered for the design of towers

located in riverbeds; however, historical wind data is not considered at present. PGCIL was also asked whether localized/narrow-front wind loading had been considered in the design. In this regard, PGCIL stated that the existing IS codes do not adequately address localized wind effects and informed that PGCIL has requested BIS to consider incorporating suitable provisions in the relevant IS codes.

During the deliberations, he emphasized on the availability of IMD-related information and the need to distinguish between general evidence of severe weather and the actual wind loading experienced by the transmission tower. As the failure occurred in only 4 years of its commissioning, the Committee warranted detailed examination of the tower, foundation and loading conditions rather than attributing the failure solely to the reported wind event. It was also emphasized that the material test results and structural observations should be considered together with authenticated wind-speed information before arriving at the final cause of failure. The Committee noted that PGCIL had requested wind-speed data from IMD near the affected tower locations vide letter dated 11.05.2026, but the required details were still awaited.

PGCIL was advised to submit a formal letter to CEA highlighting the issue of localized/cyclonic wind conditions for further examination and taking up the matter with BIS. PGCIL was also requested to furnish the material test reports and O&M records pertaining to the failed towers to CEA.

(iii) 400 kV D/C (Quad) Raipur PS–Dhamtari Transmission Line

The representative of PGCIL informed that the 400 kV D/C Raipur–Dhamtari transmission line was commissioned in March 2025 and was designed for Wind Zone-III with a design wind speed of 44 m/s. The line is a double-circuit line with Quad AL-59 Moose conductor. The Committee was informed that 400 kV D/C (Quad) Raipur PS-Dhamtari Circuit- I and Circuit- II Transmission Line tripped at around 16:52 hours on 19.05.2026 due to tower failure occurred as a result of heavy cyclonic winds affecting the area.

The site visit of Standing Committee for this particular failure held on 26.05.2026. During the site visit, two towers at Location No. 31 (DA+6) and Location No. 32 (DA+3) were found to be severely damaged and had completely collapsed. The tower at Location No. 30 (DB1+6) sustained complete damage to the top cross-arm of one circuit, while the tower at Location No. 33 (DA+0) sustained damage to the earth peak. These towers are located in plain fields with trees in the vicinity. The towers were checked for missing/ theft of tower member, nuts & bolts thoroughly to the extent possible. No tower members, nuts & bolts were found missing.

PGCIL reported heavy localized cyclonic wind as the cause of failure. The representative from PGCIL further informed that Circuit-II was restored on 29.05.2026 and Circuit-I on 09.06.2026 on permanent towers. PGCIL also informed that material test reports had been received and all test results were within permissible limits. There was no previous history of tower failure on the line.



The Committee during the site visit observed that the tower at location No. 30 did not undergo a complete collapse; however, it sustained complete damage to the top cross-arm of one circuit and few trees were uprooted and found broken in the vicinity. The transmission towers at Location No. 31 and loc no 32 had collapsed completely. The tower was found lying on the ground with extensive structural damage. Based on the overall pattern of damage of tower at Loc no 31, including the severe twisting of the tower, differential failure of the legs, and extensive deformation of the structural members—the Committee observed that the tower might have subjected to exceptionally high wind forces, possibly associated with a localized whirlwind effect. However, this is a preliminary observation and should be substantiated through detailed meteorological records and structural analysis before any definitive conclusion is drawn. It was observed that the tower at location No. 33 did not undergo a complete collapse, however, it suffered a minimal damage in the right side earth wire peak and the same seemed to be a collateral damage due to collapsed tower at location no 32.

Chief Engineer (PSE&TD), CEA, emphasized that the line had been commissioned in March 2025 and therefore the occurrence of tower failure within a short period after commissioning is not acceptable, and required detailed examination of the design and loading conditions. ***The Standing Committee observed that the reported heavy localized cyclonic wind shall be correlated with actual wind-speed data at or near the affected tower locations. He further emphasized that evidence of severe weather in the region shall not by itself be treated as conclusive evidence of wind speeds exceeding the design parameters. The Committee therefore stressed to obtain the authenticated meteorological information and thorough review the tower design based on the historical wind data.***

PGCIL was advised to furnish the relevant supporting documents, including the material test report and available meteorological information, for further examination by the Committee.

(iv) 765 kV S/C Agra–Jhatikara Transmission S/C Line

The representative of PGCIL informed that the 765 kV S/C Agra–Jhatikara transmission line was commissioned on 01.05.2013 and was designed for Wind Zone-IV with a design wind speed of 47 m/s. The line is a single-circuit line with Quad Bersimis conductor. The failure occurred on 28.05.2026 at about 17:06 hrs. Tower Loc. No. 501 (D+25) collapsed, while Loc. No. 500 (A+0) suffered damage to its upper section. PGCIL reported heavy localized cyclonic wind as the probable cause. The line was restored on permanent towers on 19.06.2026 and PGCIL informed that the material test results were satisfactory.

PGCIL informed the Committee that Tower Loc. No. 501 was found totally collapsed. Its foundation was intact, while all four stubs were damaged and minor damage to the chimney was observed. Conductors in span 501–502 were also damaged at places. At Loc. No. 500, the tower was damaged from waist level and one main leg was found bent at the second section. The foundation and stubs were not damaged. The middle-phase conductor was damaged due to collapse of the upper portion.

No rusting or missing members were observed and the nuts and bolts were found properly tightened and tack welded.

The Committee also noted that the affected towers (tower at Loc no. 500 (A+0) and tower at Loc. No. 501 (D+25)) were power-line crossing towers. The under-crossing 400 kV Bassi–Bhiwadi and 400 kV Gurugram–Bhiwani lines were affected by the incident, and the under-crossing line was restored on 29.05.2026 after removal of the conductors and earthwire of the 765 kV Agra–Jhatikara line.

The Committee noted that the tower at Loc. No. 501 (D+25), despite being a tension tower, had completely collapsed. PGCIL clarified that the tower design had been tested for a +9 m extension and that an additional factor of safety is considered for each extension. PGCIL further informed that, as per the usual practice, the base width is restricted to 25 m for each extension.

Chief Engineer (PSE&TD), CEA, emphasized that the reported heavy localized cyclonic wind should be substantiated with authenticated wind-speed data. It was observed that PGCIL had requested wind data from IMD for the affected tower locations, but the required data was still awaited. The Committee noted that the material testing results had been reported satisfactory; therefore, the meteorological loading and structural behaviour of the tower required particular examination.

The Committee also advised that the IMD wind-speed data, once received, should be correlated with the design wind speed and the actual failure pattern before arriving at a final conclusion regarding the cause of failure. PGCIL was also advised to furnish the relevant material test reports and other supporting technical documents.

In this regard, PGCIL was requested to enter into a formal agreement/ arrangement with IMD for obtaining relevant wind data historic or otherwise for their transmission network.

(v) 400 kV D/C Orai(PG)–Orai(UP) Transmission Lines

The representative of PGCIL informed that the 400 kV D/C Orai (PG)–Orai (UP) transmission line was commissioned on 29.03.2018 and was designed for Wind Zone-IV with a design wind speed of 47 m/s as per IS 802:1995, with Reliability Level-1. PGCIL has informed that the failed suspension towers of the line were designed after taking into consideration of Narrow Front Wind (NFW) condition. The line is a double-circuit line with Quad Moose conductor.

The failure occurred on 28.05.2026 at about 23:22 hrs. Two towers, Loc. Nos. 50 (DA+0) and 51 (DA+6), collapsed, while Loc. Nos. 47 (DA+0), 48 (DA+0) and 49 (DA+6) suffered partial damage. PGCIL reported heavy localized cyclonic wind as the probable cause. Circuit-II was restored through ERS on 05.06.2026 and subsequently on permanent towers on 15.06.2026; Circuit-I was also restored on permanent towers on 15.06.2026 using spare tower of the same design. Material test results were reported to be satisfactory and there was no previous history of tower failure on the line.

The site visit of Standing Committee for this particular failure held on 08.06.2026. During the Committee's site visit it was observed that all the failed parts/members of the tower had already been dismantled and restoration of transmission line on permanent towers were progressing. As per the available photograph provided by PGCIL, it has been observed that two Towers at location no 50 (DA+0) & 51(DA+6) were found completely collapsed in transverse direction resulting in fully damaged and were lying in ground with most of the members buckled and bend severely. However, towers at location no. 47(DA+0), 48 (DA+ 0), 49 (DA+ 6) suffered partial damage from waist (Bottom, Middle and Top cross arm) level & Partial Damage in Peak members while the foundation and stubs remained healthy. These 5 nos. Failed towers were located in plain fields with few trees in the vicinity. Further the towers were checked thoroughly for missing / theft of tower member, bolts & nuts to the extent possible despite of constraints due to jumbling /intermingling of many members. However, No rusting or missing members were observed and the nuts and bolts were found properly tightened and tack welded.

Chief Engineer (PSE&TD), CEA, suggested that PGCIL consider restoring the line using towers designed in accordance with the latest codal provisions. PGCIL informed that adopting a different tower design would necessitate corresponding changes in the tower foundations, which would significantly increase the time required for restoration. On this, it was clarified that since ERS towers would any way be used for temporary restoration, new towers conforming to latest codal provisions shall be provided to replace the failed towers, even if that requires laying new or appropriately strengthened tower foundations.

Chief Engineer (PSE&TD), CEA, observed that the reported cause of failure as heavy localized cyclonic wind should be supported through authenticated wind-speed data. The Committee noted that PGCIL had requested wind data from IMD near the affected tower locations; however, the data was still awaited. The Committee also noted that the tower material had been tested and the test results were reported to be satisfactory by PGCIL. He also emphasized that general reports of severe weather or cyclonic conditions in the region should be correlated with the actual wind conditions at the transmission-line corridor. It was advised that the IMD data, once received, should be examined with respect to the design wind speed and the observed failure pattern of the towers.

In this regard, PGCIL was requested to enter into a formal agreement/ arrangement with IMD for obtaining relevant wind data historic or otherwise for their transmission network.

(vi) 400 kV D/C (Twin) Nagapattinam PS–Trichy Line

The representative of PGCIL informed that the 400 kV D/C Trichy–Nagapattinam line is part of the original 400 kV D/C Neyveli–Trichy line, which was commissioned on 31.12.1993, with the Nagapattinam LILO being commissioned subsequently on 24.01.2015. The affected section was part of the original line. The line is designed as per IS 802 Part-I/1977 and passes through two wind zones,



with the failure occurring in the medium wind zone near the Trichy end. The line has a double-circuit configuration with Twin ACSR Moose conductor.

The failure occurred on 31.05.2026 at about 17:04 hrs. Three towers, namely Loc. Nos. 437 (DA+0), 438 (DA+0) and 439 (DB+0), collapsed. Five towers were partially damaged, including Loc. Nos. 434, 435, 436, 440 and 441. The reported damage included earth-wire peak damage and top cross-arm damage. PGCIL reported heavy localized cyclonic wind as the probable cause.

PGCIL informed that Circuit-I was restored on ERS towers on 14.06.2026 and both circuits were subsequently restored on permanent towers on 28.06.2026. Material test results were reported to be satisfactory and there was no previous history of tower failure on the line.

The Committee noted that the failure occurred in a section falling within the medium wind zone, while the line corridor also passes through a heavy wind zone towards the Neyveli end. The Committee further noted that the incident involved three consecutive tower collapses along with damage to several adjacent towers. The pattern of failure and damage to the earth-wire peaks and cross-arms was therefore required to be examined together with the meteorological conditions and structural characteristics of the towers.

Chief Engineer (PSE&TD), CEA, emphasized the need to examine the actual wind conditions prevailing at the failed tower locations and to correlate them with the design parameters applicable to the particular section.

He also emphasized that the reported wind-related cause should be supported through reliable meteorological data and that PGCIL should pursue the matter with IMD. The material test results and structural observations should also be considered while determining the final cause of failure.

After deliberations on the six PGCIL failure incidents, the Committee noted that heavy/localized cyclonic wind had been reported by PGCIL as the probable cause in all six cases. However, in a number of cases, the corresponding wind-speed data from IMD was still awaited. The Committee therefore emphasized that evidence of severe weather in the surrounding area shall be supplemented with authenticated meteorological data representative of the affected tower locations.

The Committee further observed that several of the PGCIL incidents occurred on relatively recently commissioned lines, such as the Guna–Shivpuri line commissioned in 2022 and the Raipur–Dhamtari line commissioned in March 2025. Accordingly, the design and structural adequacy of such towers requires due examination along with the reported meteorological cause.

The Committee advised PGCIL to furnish/submit the pending meteorological data from IMD and all relevant technical documents required for comprehensive assessment of the failure incidents. PGCIL was also requested to enter into a formal agreement/ arrangement with IMD for obtaining relevant wind data historic or otherwise for their transmission network.



D.2 The representative of **Bhakra Beas Management Board (BBMB)** presented the failure of Towers No. 296 and 297 of the **220 kV Charkhi Dadri–Ballabhgarh and 220 kV Charkhi Dadri–Samaypur D/C transmission lines**. The incident occurred near Village Shamaspur, District Charkhi Dadri, Haryana, on 03.05.2026 at approximately 22:05 hrs. Both towers collapsed during the same weather event. BBMB informed that the probable cause of failure was bad weather/heavy storm and localized cyclonic wind pressure during heavy rainfall, while the corresponding wind-speed data from IMD was awaited.

The affected towers were suspension-type towers of 32.32 m height with a span of approximately 305 m. The towers were based on PSEB design 2D-1°M-I, with pad-and-chimney foundations. The towers were designed as per IS 802 (1977) and were erected in 1976 and were carrying ACSR Goat conductor with 19/0.104 earthwire.

The representative from BBMB further informed that the latest patrolling of the line had been carried out on 15.04.2026. Maintenance/inspection activities and tree-pruning work between Tower Nos. 296 and 300 had also been carried out on the same date. No defective or damaged members had reportedly been identified prior to the incident and no previous repair, replacement or strengthening work had been carried out on the affected towers. BBMB also informed that there was no unauthorized activity or external mechanical impact at the location, the RoW was clear and there were no nearby trees, structures or other obstructions reported in the immediate vicinity. It was also informed that the line was restored on 15.05.2026 using the same towers after repairing the stubs.

Further, it was also informed by the representative from BBMB that the Internal Committee Report of the BBMB for failed towers mentions that coping was covered with mud and water leading to corrosion of the tower members causing the failure.

The Committee also noted that the affected towers were of an old design and has completed its complete service life. Therefore, the Committee also deliberated on the reconstruction of the failed towers keeping in view that the same failed towers had been used after repairing for restoration of the line.

In this regard, Chief Engineer (PSE&TD), CEA specifically enquired whether the material of the reconstructed towers had been subjected to testing and whether the adequacy of the restored towers had been verified. BBMB was asked to share the internal Committee Report of BBMB along with the latest data and all relevant enclosures, including the material test reports, inspection records, photographs and details of the action taken after the failure. It was emphasized that the reconstruction/erection of the towers shall be supported by proper technical qualification & verification rather than being treated merely as a restoration activity.

D.3 The representative of **GETCO** presented two tower failure cases before the Committee, namely the 220 kV Jamnagar–Essar Line 1 & 2 and the 400 kV Varsana–Hadala Line / 400 kV Mundra–Mansar Line. Both the incidents occurred on 19.03.2026 in the Jamnagar region. The Committee took up the individual cases for detailed deliberation.

(i) 220 kV Jamnagar–Essar Line 1 & 2

The representative of GETCO informed the Committee that the 220 kV Jamnagar–Essar Line 1 & 2 was commissioned in 2006 and is located in Wind Zone-V. The failure occurred on 19.03.2026 in the Jamnagar area. GETCO informed that two (DA+0) double-circuit suspension towers had collapsed, while damage was also observed at other tower locations. The failure occurred during the night under severe wind conditions.

During the deliberations, the Committee sought details regarding the site conditions prevailing around the failed towers. The representative of GETCO informed that, owing to local development activities, additional soil had been filled around the tower foundation and the ground level had been raised up to approximately the chimney level covering the coping as well. The Committee observed that such changes in the surrounding ground conditions could have implications for the foundation and should be properly assessed while examining the cause of failure.

The Committee also deliberated on the adequacy of the wind data corresponding to the failure location and time. Chief Engineer (PSE&TD), CEA observed that, since the line is located in Wind Zone-V, the actual wind conditions prevailing at the time of failure need to be established through authenticated data. GETCO was advised to obtain authenticated data from IMD and correlate the available wind data with the applicable design wind parameters.

The Committee further examined the design adequacy of the failed tower. GETCO informed that the tower had originally been designed by KPTL and that the design had subsequently been revalidated for Wind Zone-V with revised tower spotting data. Chief Engineer (PSE&TD), CEA emphasized that the tower design should be examined with reference to the applicable codal provisions and the design parameters prevailing at the relevant stage, rather than relying only on the availability of an earlier design or its subsequent revalidation.

The Committee also emphasized the importance of proper patrolling and identification of changes in the surroundings of transmission towers. GETCO informed that patrolling had been carried out at the concerned locations in March 2026 and that earlier patrolling had also been undertaken during October–November 2025. The Committee observed that changes such as soil filling, alteration of ground levels and local development activities in the vicinity of tower foundations should be specifically identified and recorded during regular inspection and maintenance.

In view of the above deliberations, the Committee advised GETCO to examine the failure comprehensively by correlating the authenticated wind data, tower design and applicable codal

provisions, foundation condition and changes in the surrounding ground level. GETCO was also advised to submit the relevant inspection/maintenance records and details of the design verification/revalidation carried out for the tower for further examination by the Committee.

(ii) 400kV Varsana Hadala Line / 400kV Mundra Mansar Line

The representative of GETCO informed the Committee that the concerned 400 kV transmission line tower failure occurred on 19.03.2026. The utility stated that during the night of the incident, very high-velocity and severe wind conditions prevailed in the area, which resulted in collapse of the tower. GETCO further stated that, as per the local observatory, the wind speed recorded during the incident was around 50 km/hr.

Chief Engineer (PSE&TD), CEA sought clarification regarding the wind conditions at the actual location of the failed tower and observed that the wind data available from a local observatory may need to be correlated with authenticated data for the specific location and time of occurrence. GETCO was advised to obtain the relevant wind data from IMD and examine the same with respect to the design parameters applicable to the tower.

It was noted by the Committee that the line was Commissioned in the year 2011, however, the towers had been designed as per IS 802 (1977) instead of IS 802 (1995). During deliberations, the Committee examined the design basis of the tower. GETCO informed that the tower had originally been designed by KPTL and that KPTL had subsequently been consulted for another project in accordance with the new codal provisions. Based on the same, the tower spotting data had been revised and the revised spotting data was stated to have been used for the Wind Zone-V application.

The Committee emphasized that the mere availability of an old tower design should not be taken as sufficient justification for its continued use. The design being adopted shall be examined against the latest applicable codal provisions and design requirements relevant to the commissioning and construction of the line. The Committee observed that the design adequacy, including the applicable wind parameters and other relevant design provisions, needed to be comprehensively verified rather than relying only on revalidation of the earlier design.

CE (PSE&TD), CEA, asked GETCO to submit a detailed report on the failure incident and further advised that the design of the towers be validated by CPRI. He also suggested that the importance factor for coastal cyclonic/ coastal regions (k4) and Zinc coating requirement as per coastal area shall be duly considered in the tower design. He further emphasized that the use of old/obsolete designs for new towers is not permissible.

- D.4** Representative of HVPNL presented the failure case of the **400 kV D/C Khedar–Nuhyawali Line** and which failed on 28.05.2026. The line was commissioned in 2010 and was designed as per IS 802 (1995)



considering Wind Zone-IV with a basic wind speed of 47 m/s, Reliability Level-1 and Terrain Category-2. The line consists of twin ACSR Moose conductor and porcelain insulators, and the Unitech type DA and DD towers tested in 2008. The failure was reported as the first collapse of these tower types.

Representative of HVPNL informed the Committee that on 28.05.2026 at around 18:53 hrs, a high-intensity localized whirlwind storm with cyclonic effects affected a limited corridor near Kirmara Village, Hisar District, resulting in the collapse of 9 towers over a stretch of approximately 3.82 km. Out of 9 towers, 7 towers at Location Nos. 35 (DA+0M), 36 (DA+0M), 37 (DA+3M), 38(DA+0M), 40 (DA+6M), 41 (DA+0M), and 42(DA+0M), were found to be severely damaged and had completely collapsed. The towers at Location Nos. 39 (DD+0M) and 43(DA+0M) sustained complete damage from the bottom cross-arm to the peak level. Since the 400 kV Khedar–Fatehabad (Matana) and 400 kV Khedar–Nuhyawali lines were on the same towers, the failure affected both lines. As informed by HVPNL the failure was attributed to high-intensity localized wind.

The site visit of Standing Committee for this particular failure held on 05.06.2026. During the site visit seven towers. During the inspection, it was observed that 4 towers at location no 35, 36, 37 and 38 have completely been removed from the site. However, other towers were inspected to the extent possible. The Committee also observed some missing bolts, open dummy holes in some towers and covered coping as well indicating gaps in the maintenance practices. The Committee further observed several heavy trees uprooted in the vicinity of the failed towers, which indicated the occurrence of localized high-intensity winds in the area and could have contributed to the tower failures.

During the deliberations in the meeting of Standing Committee, HVPNL stated that the failure was attributed to high-intensity localized wind and the same was supported by heavy trees uprooted in the vicinity of the failed towers. In support of its claim of high intensity wind, HVPNL furnished an IMD press release dated 29.05.2026, which reported that thunderstorms accompanied by squally/gusty winds with speeds ranging from 70–105 kmph (19.45–29.17 m/s) had occurred at isolated places over Haryana and other parts of the country. It is pertinent to note that the failed transmission towers were designed for Wind Zone-IV, corresponding to a basic wind speed of 47 m/s and therefore, the wind speeds reported in the IMD press release, by themselves, do not appear to exceed the design basic wind speed of the transmission towers. However, the reported wind speeds may not necessarily represent the actual wind conditions prevailing at the affected locations, particularly in the case of localized and highly intense wind or whirlwind events.

The Committee further examined the design basis of the failed towers. HVPNL informed that the towers had originally been designed for Wind Zone-IV with a basic wind speed of 47 m/s. **It was also stated by HVPNL that, with the passage of time, the applicable wind-zone classification of the Haryana region had changed from Wind Zone-IV to Wind Zone-V and that new towers were accordingly being designed for Wind Zone-V.** HVPNL further indicated that the existing Unitech tower design, having been



designed for the earlier wind parameters, may not have adequate capacity for the higher wind conditions encountered during the incident.

HVPNL informed that Samples of damaged tower stubs/tower members were also sent to a NABL laboratory for testing of chemical composition and mechanical strength, and the test results are within permissible limits. As per the information received from HVPNL, Circuit-I and Circuit-II of the line have been permanently restored on 09.07.2026.

The Committee noted the information regarding the limitations of conventional observatory wind data in capturing localized wind effects and further suggested HVPNL to get the authenticated data of actual wind conditions prevailing at the time and location of failure to substantiate their claim.

- D.5** The representative of **M/s KPTCL** informed the Committee that the **400 kV Kaiga–Guttur-1 & 2 D/C line**, which evacuates power from the Kaiga Generating Plant towards the 400 kV Guttur substation, tripped on 14.05.2026 at around 17:39 hrs following the failure of towers from Loc. Nos. 80 to 87. The line was commissioned in 2000 and comprises twin ACSR Moose conductors, 7/3.65 mm ground wire and 48F OPGW. The tower design was of RPG type and was based on IS 802:1977 for light wind zone.

The representative from KPTCL informed the Committee that gusty/whirlwind conditions followed by heavy rainfall were reported in the area at the time of the incident. On the basis of field observations, Towers at Loc. Nos. 82, 83, 84, 85 and 87 had completely failed at the main leg member and collapsed in the transverse direction, while Loc. Nos. 80, 81 and 86 had suffered failure/twisting in the cage and peak portions. The adjacent towers at Loc. Nos. 79 and 88 were reported to be in good condition. It was further stated that no missing bracing, redundant members, bolts or nuts were observed and the joints in the leg members and bracings were found intact.

The site visit of Standing Committee for this particular failure held on 26.05.2026. During the site visit, observed failure pattern indicates that the prevailing wind direction may have acted on Tower Locations No. 82 to 87 under an oblique/narrow-front wind loading condition, which appears to have initiated the collapse of these suspension towers. The damage pattern suggests that the dominant wind forces were concentrated over a relatively narrow strip of the transmission line, resulting in localized and progressive failure of the affected towers. Tower No. 79 & 86, being a tension/section tower, appears to have acted as a structural stopping point and thereby restricted the progression of the major failure beyond this location. However, the failure continued beyond the tower no.86 subsequently tower no. 87 also failed.

During the deliberations, the representative stated that the severe gusty/whirlwind and rainstorm had subjected the tower bodies to exceptionally high wind pressure and therefore KPTCL assessed the severe gusty/whirlwind conditions followed by heavy rain as the primary cause of the failure. At the same time, the representative stated that the exact sequence of the initial failure, including the

first tower affected, could not be conclusively established and that the possibility of a cascading effect contributing to the failure of multiple towers could not be ruled out.

The Committee deliberated upon the meteorological conditions associated with the failure and the availability of wind-speed data at the affected location. The representative informed that the IMD report indicated rainfall of 12 mm, whereas wind-speed parameters were not available/not recorded. The discussion also covered the difficulty in establishing the actual wind intensity at the failed tower locations in the absence of localized wind observations. The Committee considered the reported weather conditions along with the observed pattern of tower failures and the condition of the surrounding structures.

The representative further informed that the conductor, ground wire and OPGW were found intact, while the polymer insulator strings had been damaged as a consequence of the tower collapse. Material testing of the failed tower members was also carried out and the material was reported to be within the required parameters. The representative informed that the test report had been submitted to the concerned authorities.

Regarding restoration, the representative informed that replacement of the failed towers with available towers designed as per IS 802 (1995), along with suitable modifications in the foundations, had been taken up. With regard to the IS 802 (2015)-based design, KPTCL stated that the towers would require testing prior to installation, which would further increase the shutdown duration. In view of the urgency of restoration, readily available 400 kV D/C towers from the ongoing 400 kV Kushtagi project were diverted for the restoration work. It was informed that stub concreting and tower erection had been completed, and conductor stringing work was in progress.

The Committee advised KPTCL to furnish the relevant O&M records, material test reports and wind data pertaining to the affected location to facilitate a comprehensive assessment and arrive at a conclusive determination of the cause of failure. KPTCL was also asked to maintain spares conforming to latest codal provisions for use in emergency situations such as above.

D.6 M/s Renew Power reported two tower failure events during the period, both involving the **400 kV Double Circuit Twin HTLS Gadag (PS)–Koppal (PS) line**. In the first event on 23.05.2026, two towers were affected, while in the subsequent event on 24.05.2026, 13 towers were affected. The line was commissioned on 08.03.2026 and is located in Karnataka, which was stated as Wind Zone-I, with Reliability Level-I.

The representative of Renew Power informed the Committee that the first failure event occurred on 23.05.2026, involving two DD+30 towers at Location Nos. 11/5 and 11/6, with a 30 m extension. The representative stated that the two towers collapsed due to gusty wind conditions during the evening and that both circuits tripped simultaneously. During subsequent patrolling, the collapse of the two



towers was observed. The representative further informed that a committee comprising members from the engineering, construction and quality teams visited the site for assessment.

During the deliberations on the first event, the representative informed that a wind mast located at about 50 m from the affected tower recorded a wind speed of approximately 31.85 m/s, excluding the gust component. The representative stated that, based on the preliminary assessment, the failure was attributed to gusty wind conditions. The Committee also considered the material and design aspects of the tower. The representative informed that material samples had been tested through an NABL-accredited laboratory and the material was found satisfactory, with the test report submitted to the concerned authorities.

The representative further informed that the tower had been designed with Reliability Level-I and that the tower design and workmanship had subsequently been reviewed. It was stated that the tower had been designed in-house by the EPC agency and destructive testing of the tower had been carried out at the NABL facility of L&T. The representative also stated that the review by an independent third-party consultant did not identify any major abnormality relating to the design parameters or workmanship.

The Committee deliberated upon the applicable design parameters, particularly the Reliability Level, Twin HTLS conductor requirements, and the suitability of the prevailing Wind Zone-I for the site in view of the failure occurring within a few months of commissioning. The need for considering historical wind and cyclone data for assessing the actual wind conditions at the location was highlighted.

It was noted by the Committee that the failure occurred in the stretch involving a power-line crossing, for which the Committee, in its previous meeting, had already suggested for adopting towers with a higher Reliability Level (+1). It was further noted that a +30 m tower extension has been adopted at the location, which cannot be practically tested. In view of the same, the Committee suggested that an appropriate higher Reliability Level shall be considered for such tower extensions to ensure adequate design reliability. Increase in the wind zone for the design purpose was also suggested by the Committee.

The Committee also deliberated upon the second failure event of 24.05.2026, in which 13 towers of the same line were subsequently affected. The representative stated that the second event occurred approximately 24 hours after the first two towers had collapsed. During the discussion, the Committee specifically considered the fact that the failure had extended beyond the intervening tension tower and sought clarification as to why the failure was not arrested at that locations of tension towers. The representative informed that the exact reason for the propagation of the failure could not be conclusively established; the utility's team and third-party investigation considered the possibility that the continuing high wind conditions and a sudden additional load or jerk may have contributed to the subsequent collapse of the remaining towers.

The Committee examined the sequence of failure in detail and observed that the failure mechanism would need to be correlated with the actual wind conditions along the affected section, particularly between the relevant tension and suspension towers. The representative informed that no wind mast was available in the section between Locations 52 and 59 and that corresponding nearby IMD wind speed data was also not available. Based on the deliberations, the Committee suggested to review the design of Tension towers being used in the line.

With regard to restoration, the representative informed that spare towers available with Renew Power had been utilised. The foundation and tower erection works had been completed, while stringing was under progress. The representative further informed that, although the chimney portion of the foundation was intact, the stub had bent at chimney level and therefore the existing foundation was dismantled and a new foundation was cast. It was stated that three dismantling/re-foundation and re-erection works had been completed for the affected locations, with stringing work progressing over the affected 6.5 km section.

The Committee also deliberated on the design of future spare towers and the use of higher design parameters in view of the failure and the site-specific wind conditions which warranted the consideration of higher Reliability Level and higher Wind Zone parameters. The representative informed that the existing spare inventory had already been procured and was utilised for restoration, while the observations of the Committee would be considered for further inventory and upcoming projects.

D.7 M/s MSETCL has reported one tower failure event during the period, involving the **220 kV Akola–Balapur DCDC Line**. The incident occurred on 24.05.2026 at about 15:40 hrs and involved Tower Nos. 51 and 52. The line was commissioned on 31.08.2012 and the line loading prior to tripping was reported as 19 MW.

The representative of MSETCL informed the Committee that the 220 kV Akola–Balapur DCDC Line is a 27 km long line comprising 91 towers and uses 0.4 Zebra conductor with a single 7/3.15 mm earth wire. The affected locations were Tower No. 51, a (C+0) bend/tension tower, and Tower No. 52, an (A+3) suspension tower. The towers were designed as per IS 802 (1995). The two towers were located near Gaigaon, Taluka Balapur, District Akola, Maharashtra, in flat terrain classified as Terrain Category-1. Tower Nos. 51 and 52 had heights of 34.4 m and 38.8 m respectively, with BC-type foundations.

The representative stated that the incident occurred during severe weather conditions, with heavy winds, rainfall and lightning reported in the vicinity. Following the incident, Tower No. 52 was found to have completely collapsed, while the leg of adjacent Tower No. 51 was found bent. The conductors remained suspended on the adjoining structures. As per the utility's investigation, the failure involved abnormal mechanical stresses generated by the reported high-velocity wind pressure and associated

weather conditions, resulting in excessive transverse and longitudinal loading on Tower No. 52 and subsequent bending of the leg of Tower No. 51.

The Committee deliberated on the reported meteorological conditions and the wind data available for the location. The weather information obtained from DSAO, Akola, for 24.05.2026 indicated a maximum temperature of 43.97°C, minimum temperature of 30.84°C and average wind speed of 7.95 km/h, with a reported wind gust of 28.37 km/h. However, the representative clarified that the actual wind velocity at the time of occurrence was not available from IMD for the affected location. The Committee therefore deliberated upon the adequacy and representativeness of the available meteorological data for assessing the actual wind loading experienced by the tower.

The Committee further deliberated on the sequence of structural damage and the possibility of progressive failure. As reported by MSETCL, the failure of Tower No. 52 was accompanied by bending of the bottom leg of Tower No. 51.

With regard to restoration, the representative informed the Committee that the foundation was found to be in good condition and, accordingly, foundation repair was not required. Site clearance was completed by 25.05.2026, tower erection and replacement of the damaged leg at Loc. No. 51 were carried out from 26.05.2026 to 28.05.2026, and stringing between Loc. Nos. 51–52–53 was completed on 29.05.2026. The line was subsequently charged on 29.05.2026 at 19:26 hrs and was reported to have stood satisfactorily.

The Committee suggested that the line be restored using towers designed as per the latest applicable codal provisions. MSETCL informed that tendering for towers with design as per the latest codal provisions is in progress.

D.8 M/s MPPTCL has reported one tower failure event during the period, involving the **220 kV Satna–Kotar DCDS Line**. The failure occurred on 11.06.2026. The line was commissioned in 1991 and towers were designed as per IS 802 (1977) under Reliability Level-1. As per the Committee’s consolidated record, the event involved one suspension tower and one tension tower.

During the deliberations, the Committee examined the incident in the context of the design and operational characteristics of the line and noted that the line had completed nearly 35 years of service.

The Committee also deliberated upon the meteorological conditions prevailing at the time of the incident and the possible role of wind loading in the failure. However, specific wind-speed data or a detailed meteorological assessment for the affected tower locations was not available; accordingly, no specific wind velocity has been recorded herein. The Committee further discussed the structural aspects of the affected towers, including the possibility of member-level failure and the consequent

load redistribution between the suspension and tension towers. The representative of M/s MPPTCL informed that the failed towers had been restored using spare towers of the same design.

With regard to digitization and patrolling practices, M/s MPPTCL informed that the assets under its scope have already been digitized and that O&M of the lines is being carried out on a monthly basis, considering the age of the lines.

The Committee suggested that the line be restored using towers designed as per the latest applicable codal provisions and directed M/s MPPTCL to submit the digitization records and records of patrolling practices for the line.

D.9 M/s Vena Energy reported the collapse of five (05) Nos. of 220 kV transmission towers at location Nos. 32 (DA+03), 33 (DA+03), 34 (DA+03), 35(DA+03) and 36(DA+03), along with partial damage to one (01) additional tower at location No. 31 (DC+03), in connection with its 220 kV transmission line associated with the with the **160 MW Vena Energy Vidyuth Private Limited** Blended Wind Project on 17.05.2026. The cause of the failures are heavy rain, gusty winds, and lightning reported during the event which may have been a contributing factor to the incident. The line was commissioned in 2024, however, towers have been designed as per IS 802 (1995) for Wind Zone-1.

The site visit of Standing Committee for this particular failure held on 26.05.2026. During the site visit, the Committee observed that there was no damage in nearby Transmissions Towers of other utilities indicating the impact of gusty winds being localized. However, Vena Energy did not furnish any wind speed data or meteorological records for the affected location to substantiate the prevailing weather conditions and assess their impact on the tower. There are several WTGs belonging to Sembcorp Green Infra located in the vicinity of the tower collapse site. During the site visit, the representative of Sembcorp Green Infra, who accompanied the inspection team, informed that the wind speed recorded at the time of the tower collapse was in the range of 18–19 m/s. However, this value represents the 10-minute average wind speed, as the facility does not have provision for recording instantaneous wind speed.

During the deliberations, the representative of M/s Vena Energy informed the Committee that the utility had considered the occurrence in the context of the wind conditions prevailing in the project area. He further stated that nearest IMD observatory at Khustagi did not contain the required wind-speed information and that wind data had therefore been obtained from the nearest wind turbines with measurements recorded at approximately six-second intervals. The records indicated two distinct gust pulses, with the first occurring during the evening of 16.05.2026 and the second during the afternoon of 17.05.2026, the latter coinciding with the reported tower collapse.

The Committee deliberated upon the design and codal aspects of the transmission line. Vena Energy informed the Committee that K_4 factor had been considered as 1 on the basis that the project location



was not classified as a cyclonic zone, and that reliability and drag coefficients had been considered as per the applicable CEA regulations.

It was also informed to the Committee that the Tower designs were procured from GETCO and the tower design had been checked and validated by a third-party consultant for suitability at the project location in accordance with the applicable codal provisions.

The issue of obtaining authenticated wind data for transmission tower locations was also deliberated upon, particularly in view of the absence of a functioning IMD observatory at Khustagi as indicated in the submitted material. The representative informed the Committee that the utility had relied on high-resolution wind-turbine data for assessment of the event.

W.r.to the design of the towers, representative of M/s CPRI informed that upon scrutiny of the submitted design documents, it was observed that the structural drawings were prepared in 2012, whereas the supporting design calculations were prepared in 2021. Further, on Page 34 of the PDF document titled Annexure-IV Tower Structure, it is stated that "No changes in structure due to new loadings according to IS 802 (Part 1): 2015." This indicates that no structural modifications or strengthening measures were undertaken in the adopted GETCO towers to account for the revised loading requirements as specified in IS 802 (Part 1):2015. As per the member design summary presented on Pages 80 to 86 of the design report (Annexure-IV Tower Structure), a majority of the structural members do not satisfy the slenderness ratio (L/r) requirements specified in the latest standard IS 802 (Part 1):2015. The reported L/r values exceed the permissible limit of 120 for leg members and 200 for bracing and belt members, while the redundant members exhibit L/r values exceeding 250. These results indicate that the member designs do not comply with the codal slenderness limits prescribed in the latest standard IS 802 (Part 1):2015. The wind pressure due to Narrow front wind condition has been calculated and presented in the design report. However, it is not clear from the submitted design report whether the tower has been analyzed for the narrow-front wind loading condition. Further, there is no confirmation that the corresponding wind load acting on the tower body has been incorporated in the PLS model. The design report also does not include any calculations or analysis pertaining to the narrow-front wind load on the tower body. Hence, compliance with this loading condition cannot be verified.

The observed failure pattern suggests that the prevailing wind direction acted on Leg B under an oblique/narrow front-loading condition, which initiated the collapse of the suspension towers. Since Tower No. 31 is a tension tower, it acted as a stopping point and prevented the progression of further damage beyond this location. Although Tower No. 37 is a suspension tower, the influence of the dominant wind forces appears to have been concentrated primarily between Tower Locations 32 and 34. The loading effect was not sufficient to cause foundation damage at these locations (i.e 31 & 37). For Tower Locations 35 and 36, the wind dominance gradually reduced toward Tower No. 37, resulting in only minor damage to Leg B.

D.10 M/s NTPC reported one tower failure event during the period, involving Tower No. 183 of the **400 kV NTPC Jhabua–PGCIL Jabalpur D/C transmission line**. The failure occurred on 01.05.2026 at around 17:12 hrs, following tripping of both circuits of the line. The tower was subsequently found in a tilted condition during line patrolling.

The representative of NTPC/Jhabua informed the Committee that the 400 kV Jhabua–Jabalpur Line-2 tripped at 17:12 hrs on 01.05.2026 on R-phase-to-earth fault, followed by unsuccessful auto-reclosure due to persistence of the fault. Subsequently, Line-1 also tripped at about 17:18 hrs on R and B-phase-to-earth fault. During subsequent line patrolling, Tower No. 183 was found damaged and tilted. The tower was a (DA+06) tower, and the 6 m extension provided at the bottom portion was found twisted and damaged.

A Standing Committee subsequently visited the site on 11.05.2026 for assessment of the incident and examination of the possible causes of failure. During the site inspection, the Committee members observed the presence of substantial vegetation growth around the tower base, including a tree located in close proximity to the failed tower. The Committee members noted that under conditions of high wind, the adjacent tree and tree within tower base width would have exerted additional mechanical loading on the tower members either through direct contact or by increasing wind-induced forces on the structure. Such additional loading may have aggravated the stresses experienced by the tower members and contributed to the failure. In the absence of authenticated wind speed data and detailed structural analysis, the exact cause of the failure cannot be conclusively established at this stage; however, the combined effect of severe wind conditions and additional loading due to the presence of a tree in close proximity to the tower, within the tower base width, may have been a contributing factor to the failure.

During the deliberations, the representative informed the Committee that all four tower foundations were found intact and no damage was observed in the forward and backward spans. The conductor on the Line-2 side had sufficient clearance, whereas the Line-1 side conductor had come into contact with the cross-arms due to the tilting of the tower. The weather conditions at the time of the incident were reported as severe storm followed by heavy rainfall. Wind data available from the nearest Jabalpur Airport observatory, located approximately 35 km from Tower No. 183, was also presented for consideration.

The Committee deliberated upon the prevailing meteorological conditions and their possible relationship with the failure of the tower. The representative informed the Committee that, based on the incident assessment, localized high wind velocity during the severe thunderstorm was suspected to have caused damage to the tower leg members, particularly up to the 6 m extension level. It was further stated that the tower was situated in undulated terrain, which may have resulted in uneven wind loading and differential wind pressure on the tower structure.

The representative further informed the Committee that routine maintenance practices included line patrolling, tower healthiness checks, inspection for missing members and hardware, thermography



and puncture-insulator detection. The PID test carried out in January 2026 had not indicated any defect in the porcelain insulators.

Regarding restoration, the representative informed the Committee that an Emergency Restoration System (ERS) was explored immediately after the incident, with the ERS structures for both lines erected by 16.05.2026 and the circuits subsequently charged through ERS. For permanent restoration, new foundations were completed for all four footings on 30.05.2026, tower materials were supplied on 30.06.2026 and erection of the 54 m high tower was completed on 20.07.2026. Following completion of stringing and receipt of CEA safety clearance, Line-1 was charged on 01.08.2026 and Line-2 on 06.08.2026, thereby completing restoration of the line.

The committee directed NTPC for submission of the patrolling data.

D.11 M/s Adani Energy Solutions Limited, reported two tower failure incidents during the period, both involving the 765 kV S/C Koradi–Akola Ckt-1 transmission line. The first incident occurred on 28.05.2026 and involved damage to Tower No. 399 and the OPGW peak of Tower No. 400, while the second incident occurred on 26.06.2026 and involved damage to Tower No. 396 and the OPGW peak of Tower No. 395. The line is a 222 km long 765 kV single-circuit line with Delta tower configuration, designed as per IS 802:1995, with Reliability Level-2 and Wind Zone-2 (basic wind speed 39 m/s).

(i) 765 kV S/C Koradi–Akola Ckt-1 – Failure on 28.05.2026

The representative of Adani informed the Committee that on 28.05.2026 at about 17:04 hrs, the 765 kV S/C Koradi–Akola Ckt-1 tripped following damage to Tower No. 399, an A+0 suspension tower, while the OPGW peak of Tower No. 400 was also deformed. Approximately 500 MW power flow was affected. The representative stated that the incident occurred during a localized whirlwind accompanied by a severe thunderstorm. The foundation of Tower No. 399 was found intact and no foundation damage was observed during the preliminary assessment.

During the deliberations, the representative informed the Committee that the line was restored on the original coordinates and the restoration work involved deployment of in-house manpower as well as agencies engaged through annual rate contracts. The required tools and materials were mobilized from Koradi and Akola stores. The restoration activities were undertaken under difficult site conditions, including heavy rain, high winds, muddy soil and constraints in movement of cranes and other machinery. The line was ultimately restored on 06.06.2026 at 05:44 hrs using the same tower design.

The Committee deliberated upon the failure in the context of the Delta tower configuration and the prevailing severe weather conditions. The representative subsequently informed the Committee regarding the detailed root-cause-analysis exercise, wherein two independent consultants, Arise Power and Takalkar Power, were engaged. Material testing of MS angles, including chemical, tensile,

yield-strength, ultimate tensile-strength, elongation and bend tests, was carried out at a NABL-accredited laboratory, and the material was reported to conform to the applicable requirements.

The Committee further considered the design-related aspects presented by Adani. The representative informed that the strengthening assessment considered the revised provisions of IS 802:2015, including K_4 factor, reliability, drag coefficient and oblique wind effects. The presentation also referred to the experience of earlier Delta tower failures and strengthening carried out for 765 kV single-circuit Delta towers by PGCIL.

The Committee took note of the revised design and strengthening measures proposed for the Delta tower configuration. The representative informed that a revised strengthening design had been procured from PGCIL, aligned with the design parameters considered for Wind Zones 2 and 4, and that strengthening work involved the 3rd and 4th section legs, central cage, cross-arms and K-frame.

M/s. Adani was asked to submit the material test report and authenticated wind speed data to the Committee.

(ii) 765 kV S/C Koradi–Akola Ckt-1 – Failure on 26.06.2026

The representative of Adani informed the Committee that a second incident occurred on 26.06.2026 at about 16:38 hrs on the same 765 kV S/C Koradi–Akola Ckt-1. Tower No. 396, an (A+0) tower, sustained damage above the waist level, while the OPGW peak of Tower No. 395 was also damaged. Approximately 500 MW power flow was affected. The incident was attributed in the presentation to a localized whirlwind accompanied by a heavy thunderstorm.

During the deliberations, the representative informed the Committee that the preliminary damage assessment was carried out on 27.06.2026. The foundation of Tower No. 396 was found intact, with no foundation damage observed, and restoration was initiated on the original coordinates. The restoration involved deployment of in-house manpower, agencies under annual rate contracts and manpower from multiple agencies, with tools and materials mobilized from Koradi and Akola stores.

The Committee deliberated upon the occurrence of the second failure on the same transmission line and the weather conditions reported at the site. The presentation included photographs indicating thunderstorm activity and heavy rainfall in the Amravati area. The representative informed that the line was restored on the original coordinates using the same tower design as original, and the total restoration period was 20.5 days, with restoration completed on 16.07.2026 at 22:30 hrs.

The Committee also considered the design and material-related aspects in light of the two failure incidents. The representative informed that the detailed RCA and subsequent strengthening exercise considered earlier Delta tower-collapse incidents, independent consultant assessment, material testing and the revised provisions of IS 802:2015. The Committee deliberated upon the revised K_4

factor, reliability level, drag coefficient and oblique wind effects incorporated in the strengthening design, along with the reference to Clause 85(j) of the CEA Regulations, 2022.

The representative further informed the Committee regarding the ongoing strengthening programme for the Delta tower configuration. The strengthening work covers the existing 765 kV S/C Tiroda–Koradi, Koradi–Akola and Akola–Aurangabad lines, with strengthening works planned/completed in phases. The Committee took note of the revised design approach and the strengthening measures being implemented in view of the failure experience and the design considerations presented by Adani.

D.12 M/s UP Power Transmission Corporation Ltd. (UPPTCL) reported two tower failure events during the period, involving 220 kV transmission lines and a total of five (05) affected towers. The first event involved the 220 kV Bareilly–C.B. Ganj-I line, while the second involved the 220 kV Roza–Dohana D/C line. The failure reports indicate severe storm/thunderstorm/cyclonic wind conditions in both cases, with reported wind velocities ranging from 76 km/h to 100 km/h.

The cases reported by M/s UPPTCL could not be deliberated upon as its representatives had to leave the meeting. Accordingly, the details furnished by M/s UPPTCL in the prescribed reporting proforma are reproduced below:

(i) 220 kV Bareilly–C.B. Ganj-I Line – Failure on 12.05.2026

The failure occurred on 12.05.2026 involving Tower No. 22, a (DB+5) tower, of the 220 kV Bareilly–C.B. Ganj-I line due to violent storm accompanied by heavy rain experienced at the time of the incident, with the reported wind velocity being about 100 km/h. The line was commissioned in 1995 and constructed by M/s SAE, with ACSR Zebra single conductor and porcelain tension insulators. The power flow prior to the incident was reported as approximately 60 MW.

The foundation of the affected tower was reported to have been damaged. The failure report identified heavy localized cyclone as the probable cause of the tower failure. However, any authenticated wind speed data during the time of failure has not been furnished. The tree cutting and replacement of missing tower parts had been undertaken during the period from 15.04.2026 to 20.04.2026. Restoration of the affected section was completed on 31.05.2026.

(ii) 220 kV Roza–Dohana D/C Line – Failure on 25.05.2026

The failure occurred on 25.05.2026 involving Tower Nos. 314, 315, 316 and 317, affected on the 220 kV Roza–Dohana D/C line. The affected towers comprised one (DA+0), two (DA+5) and one (DC+0) tower. The line, having a length of approximately 108.07 km, was commissioned in 2016 and



constructed by M/s SEW, with KTPL make towers. The line carried ACSR Zebra single conductor and porcelain insulators, with a reported power flow of approximately 177 MW prior to the incident.

The failure report identified violent storm accompanied by heavy rain as the probable cause of failure with a reported wind velocity of about 76 km/h. However, any authenticated wind speed data during the time of failure has not been furnished. The affected tower foundations were reported as damaged, with butt-joint work required.

The patrolling, tree cutting/lopping/chopping and replacement of missing tower parts had been carried out during the period from 15.04.2026 to 23.05.2026. Restoration of the affected section was completed on 10.06.2026.

D.13 M/s RVPNL reported one tower failure event during the period from January 2026 to June 2026, involving the 220 kV Bap–Barsingsar line. The failure occurred on 04.05.2026 at Loc. No. 278, a Double Suspension Tower (TTA+0), located at Haripura, Jamba, BAP. The line was commissioned in 2003 with ACSR Single Zebra. The wind zone reported is WZ-4. M/s RVPNL further informed that reconductoring of the line with HTLS conductor has been completed in December, 2025.

The representative stated that Tower Loc. No. 278 had collapsed during heavy wind storm and cyclone conditions prevailing in the area on the date of failure. The failure was accordingly presented by M/s RVPNL in the context of the severe weather conditions experienced at the location.

M/s. RVPNL informed about the weather information including the weather report obtained from the Meteorological Centre, Jaipur. The available meteorological information was taken into consideration while deliberating upon the reported cause of failure and the possibility of severe wind conditions contributing to the collapse.

The Committee took note of the weather report and suggested M/s. RVPNL to submit all the data and records to the Standing Committee for analysis.

5. Statistics and Analysis of the EHV Transmission Line Tower failure:

5.1 General Statistics of Reported EHV Transmission Line Tower Failures:

- a) Failure of 86 Nos. of EHV Transmission Line Towers (68 Nos. Suspension Towers and 18 Nos. Tension Towers) in 22 Nos. Transmission Lines of voltage class of 220 kV, 400 kV and 765 kV AC have been reported to CEA during the period of January, 2026 to June, 2026. The total 22 Nos. of EHV Transmission Lines failure are mentioned in the Table 1 given below:



Table 1: Details of failure of EHV Transmission Lines

S . N .	Name of the Transmiss ion Line	Name of Utility	Date of Failur e	Year of Commi ssionin g	Wi nd Zo ne	No. of Towers Failed		
						Su sp en si o n	Te nsi on	Tot al
1	765 kV Bhiwani- Moga Transmiss ion line	PGCIL	03.05.2026	2012	4	1	3	4
2	220 kV D/C Guna- Shivpuri Line	PGCIL	08.05. 2026	2022	4	4	0	4
3	400 kV D/C (Quad) Raipur PS - Dhamtari 1&2 TL	PGCIL	19.05. 2026	2025	3	3	1	4
4	765 kV Agra- Jhatikara Line	PGCIL	28.05. 2026	2013	4	1	1	2
5	400 kV ORAI (PG)- ORAI(UP)- II 400 kV Garautha (UP)- Orai(UP)-I	PGCIL	28.05. 2026	2018	4	5	0	5



6	400 kV D/C (Twin) Nagapatti 7nam PS – T8richy Line9-1 & 2	PGCIL	31.05. 2026	1993	4	7	1	8
7	220 kV Charkhi Dadri- Ballabgar h Ckt 220 KV Charkhi Dadri- Samaypur Ckt (Double Circuit Line)	BBMB	03.05. 2026	1976 1988	4	2	0	2
8	220 kV Jamnagar - Essar Line 1 & 2	GETCO	19.03. 2026	2006	5	3	1	4
9	400 kV Varsana Hadala Line / 400 kV Mundra Mansar Line	GETCO	19.03. 2026	2011	5	1	0	1
10	400 kV D/C Khedar – Nuhiyawa li	HVPNL	28.05. 2026	2010	4	8	1	9
11	400 kV KAIGA-	KPTCL	14.05. 2026	2000	2	7	1	8



	Guttur 1 & 2							
12	400 kV Double Circuit Twin HTLS Gadag(PS) – Koppal (PS)	Renew Power	23.05.2026	2026	1	0	3	3
13	400 kV Double Circuit Twin HTLS Gadag(PS) – Koppal (PS)	Renew Power	24.05.2026	2026	1	11	2	13
14	220 kV Akola-Balapur DCDC Lines	MAH ATRA NSCO	24.05.2026	2012	1	1	0	1
15	220 kV Satna-Kotar DCDS line	MP TRAN SCO	11.06.2026	1991	3	1	1	2
16	Vena Energy Vidyuth Private limited / 220 kV	Vena Energy	17.05.2026	2024	1	5	1	6
17	400 kV D/C Jhabua Jabalpur Line	NTPC	01.05.2026	2015	2	1	0	1



18	765 kV S/C AKOLA (2) – KORADI (3) LINE – 1	ADAN I	26.06. 2026	2014	2	1	0	1
19	765 KV S/C AKOLA (2) – KORADI (3) LINE – 1	ADAN I	28.05. 2026	2014	2	1	0	1
20	220 kV Bareilly(4 00)-CB Ganj Ckt-I	UPPT CL	12.05. 2026	1995	4	1	1	2
21	220 kV Roza - Dohna Line	UPPT CL	12.05. 2026	2016	4	3	1	4
22	220 kV S/C Bap- Barsingsa r line	RVPN	04.05. 2026	2013	5	1	0	1
Total						68	18	86

- b) The total number of incidences of failures of EHV Transmission Line Towers, and the Nos. of affected Tension type and Suspension type towers that have been reported to CEA for the period of January, 2026 to June, 2026 are indicated in the Fig. 1 given below.

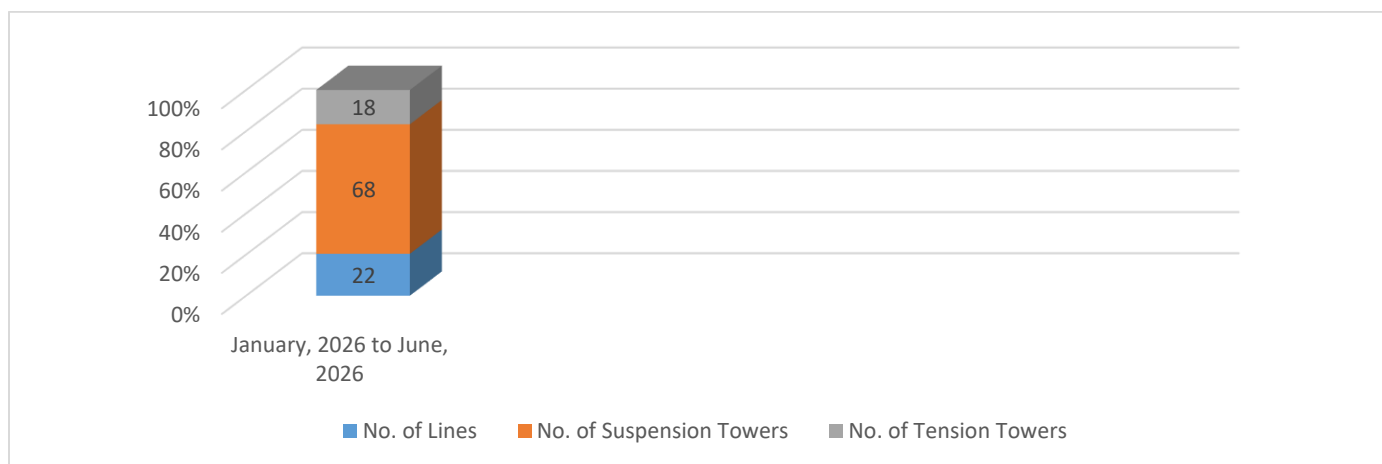


Fig. 1

- c) The number of failed Suspension and Tension type towers at various voltage levels, reported for the period of January, 2026 to June, 2026 are indicated in Table-2 below:

Table 2: Voltage wise Tower failure

Volta ge Level	Utility	No of affect ed line	No of Tower failed					Tot al no of Tow er
			Suspens ion tower	Tension Tower				
				A	B	C	D	
765 kV	PGCIL	2	2	1	2	1	4	6
	Adani	2	2					2
	Total	4	4	1	2	1	4	8
400 kV	PGCIL	3	15	2			2	17
	GETCO	1	1					1
	HVPNL	1	8			1	1	9
	KPTCL	1	7	1			1	8
	NTPC	1	1					1
	Renew	2	11	3		2	5	16
	Total	9	43	6	0	3	9	52
220 kV	PGCIL	1	4					4
	BBMB	1	2					2
	GETCO	1	3		1		1	4
	MAHATRAN SCO	1	1					1



	MP TRANSCO	1	1	1			1	2
	Vena Energy	1	5		1		1	6
	UPPTCL	2	4	1	1		2	6
	RVPN	1	1					1
	Total	9	21	2	3	0	5	26
Total		22	68	9	5	4	18	86

- d) It can be seen from the below **Fig. 2** that at 765 kV Voltage level, 04 Nos. of Suspension type tower and 04 Nos. of Tension Type towers were failed in 02 Nos. of Transmission Line, at 400 kV Voltage level 43 Nos. of Suspension type tower and 09 Nos. of Tension type towers have failed in 06 Nos. of Transmission Line, and at 220 kV Voltage level 21 Nos. of Suspension type tower and 05 Nos. of Tension type towers was failed in 08 Nos. of Transmission Line.

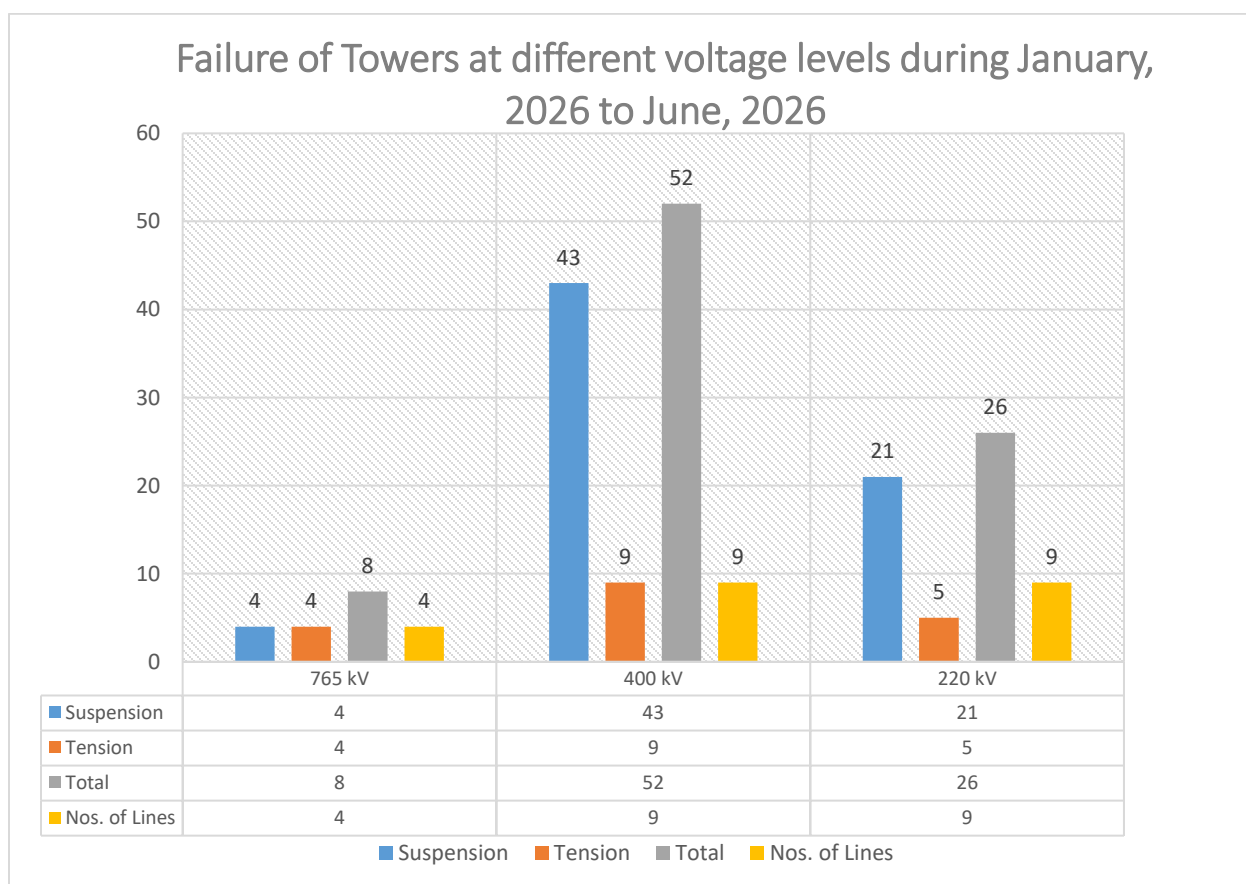


Fig. 2

- e) It can be seen from the below **Fig. 3** that out of total 86 Nos. of EHV Line Tower failure, 68 Nos. are of Suspension type tower leading to its share of 79 % of total towers failed and 18 Nos. are of Tension

type towers leading to its share of 21 % of total towers failed. Out of total 18 Nos. of Tension Type tower, 09 No. are of Type B leading to its share of 10 %, 05 Nos are of Type C leading to its share of 06 % and 04 Nos. are of Type D leading to its share of 05 % Tension tower.

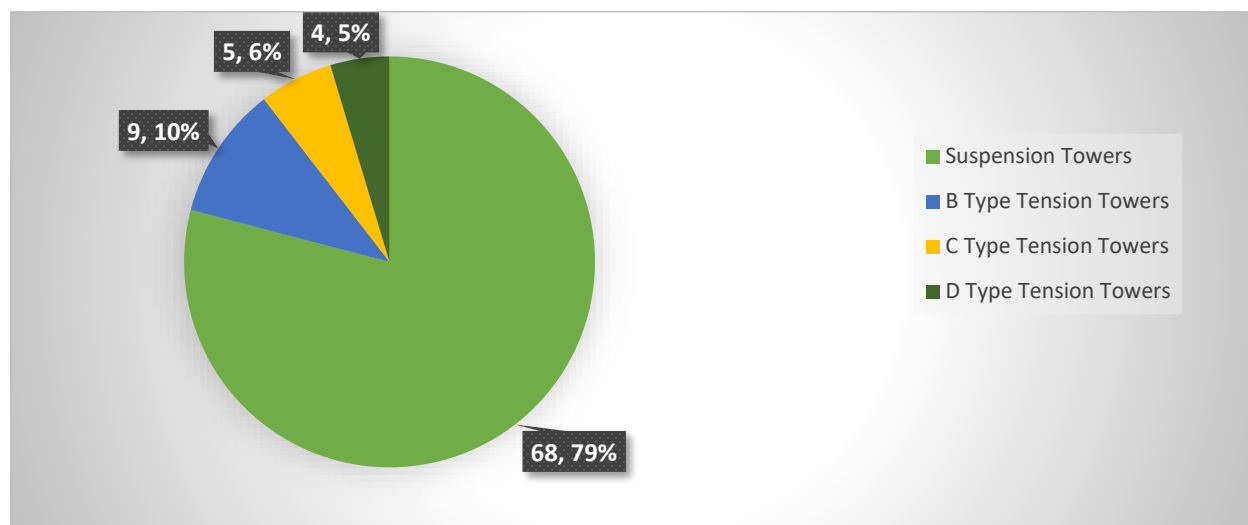


Fig. 3

- f) It has been observed that the failure rate of Suspension type tower is higher in comparison to Tension type tower. This may be because in normal terrain, generally, the Nos. of Suspension type tower in any particular line is much higher than that of Tension type tower. Further, the Suspension type towers are not designed to take horizontal forces in the longitudinal direction and hence the failures of one suspension type tower causes secondary failure of adjacent Suspension towers due to the pulling force of conductors. In view of above, the loading criteria for the Suspension type towers have been made more stringent and the longitudinal and transverse force acting on Suspension type towers under security condition has been increased in revised IS 802: 2015.
- g) The wind map of India was divided into three wind pressure zones that is light, medium & heavy, before the revision of IS 802 in 1995. In the third revision of IS 802: 1995, 6 wind zones were specified dividing various regions on the basis of 3 second wind gust speed. The No. of transmission lines and towers, failed during the period from January, 2026 to June, 2026 and designed according to various wind zones is given in **Fig. 4** below. It can be seen that the maximum No. of failure of towers have occurred for transmission lines which were designed for wind zone 4. It may be noted that maximum area of India is covered under the wind zones 2 and 4.

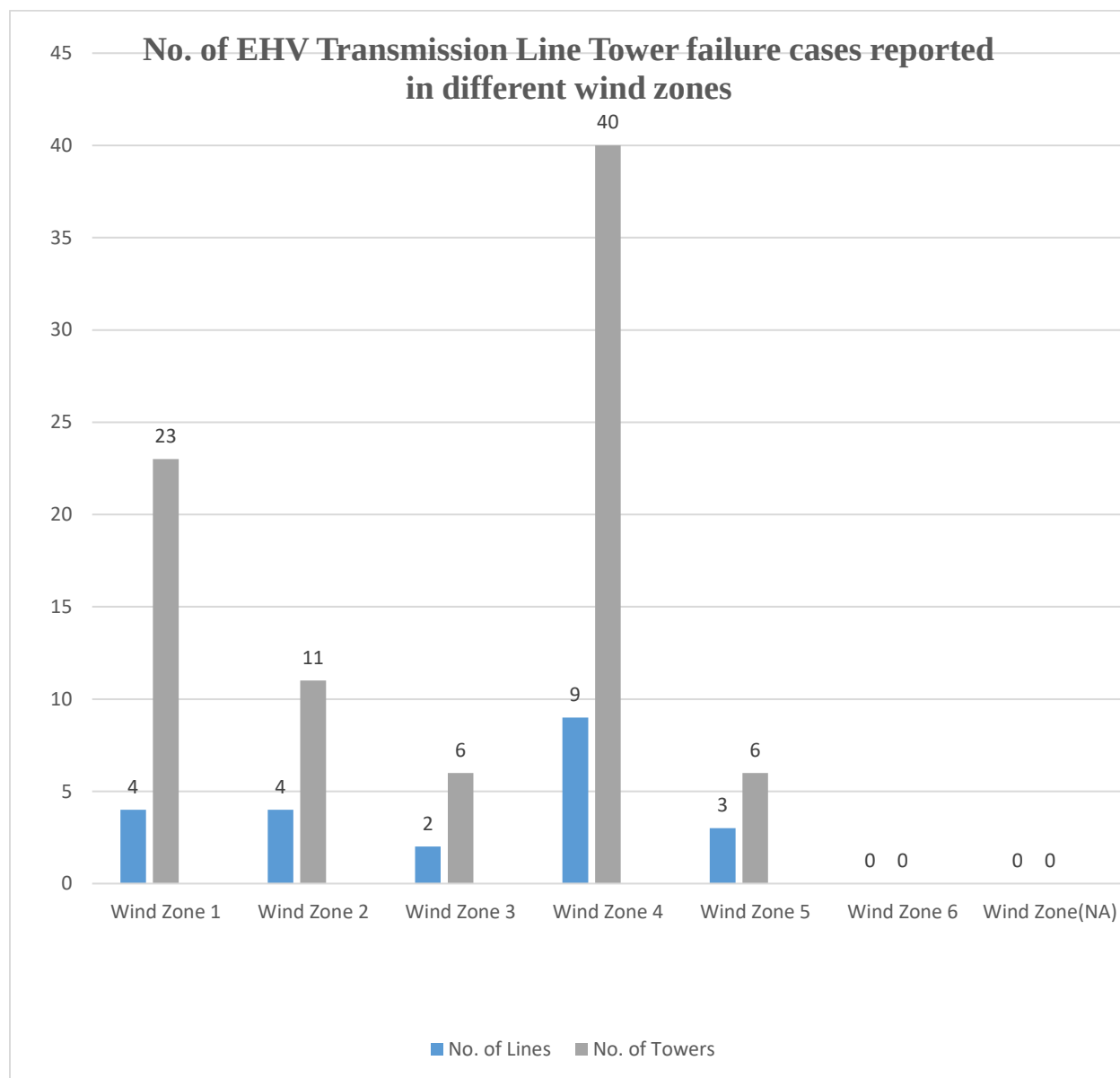


Fig. 4

5.2 Insights into Tower Failure Incidents during Past Years:

- a) The details of previous EHV Transmission Line Tower failure incidents which were reported to CEA and have been discussed in the past Standing Committee meetings from the year 2014 onwards have been analysed by CEA and the graph depicting the failures of EHV Transmission Line towers occurred during past years (2014-June, 2026) that have been discussed in the previous Standing committee meetings are shown below in **Fig. 5**. The maximum No. of failures, i.e., 163 cases of tower failures occurred during year 2014. As has been observed in the previous Standing Committee meetings, the failure rate of suspension towers is much higher in comparison to tension towers. This may be because of the cascading effect of failure of suspension type towers i.e. secondary failure of adjacent



suspension towers due to the pulling force of conductors which have been developed due to failure of another tower.

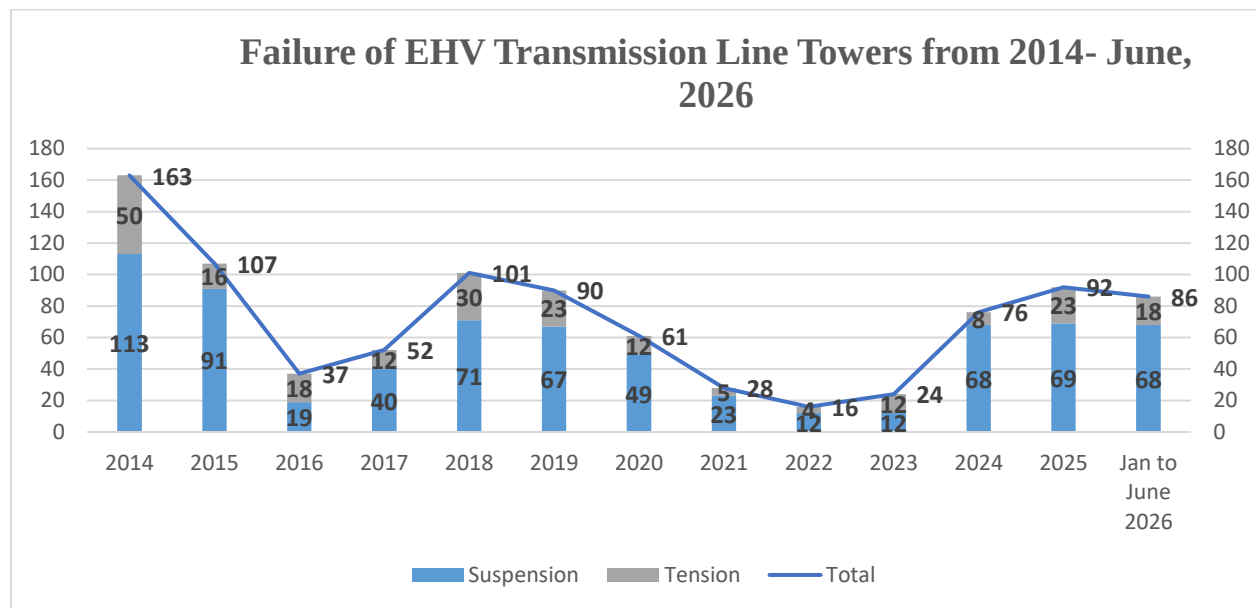


Fig. 5

- b) The graph depicting the failures of towers at various voltage levels that have occurred in past years (2012-June, 2026) and intimated to CEA which have been discussed in the Standing committee meetings are shown below in Fig. 6. It may be observed that towers of 400 kV voltage level have maximum incidents of failure. It may be noted that the mandate of the Standing Committee is to investigate failure of towers of 220 kV and above voltage class transmission line and the graph shows the details of only those transmission line failures which have been intimated to CEA.

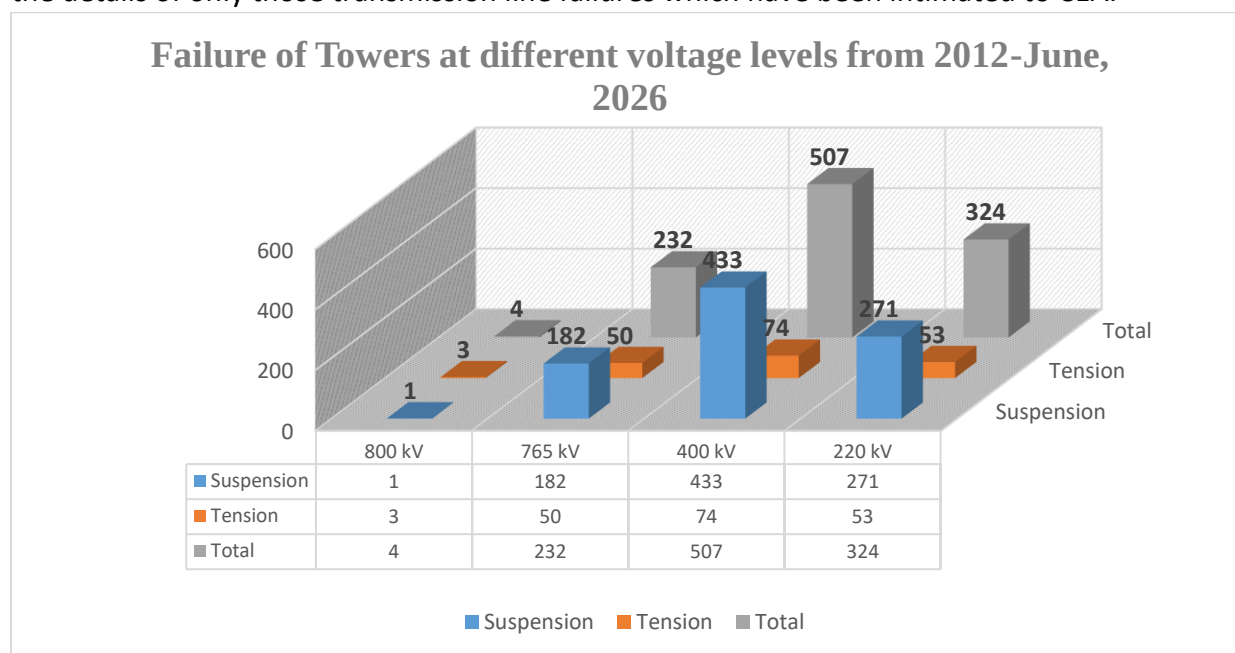


Fig. 6

6. General Observations of the Standing Committee

- a) The type of failures of EHV Transmission Line Towers of various voltage levels can be broadly classified as under:
- Tower design as per old Codal provisions
 - Tower design as per improper Codal & Regulatory provisions
 - Non-consideration of k3 & k4 factors
 - Use of improper foundation
 - Shearing of stubs of leg members of towers.
 - Deformation in legs of towers and cage portion of bottom cross arm level.
 - Buckling at stub level leading to complete collapse of towers with/without damage to tower foundation.
 - Buckling above 1st panel (normal tower) level with/ without damage to tower foundation.
 - Buckling from bottom cross arm level or top cross arm level or peak broken without any damage to lower portion of the tower and foundation.
- b) The main cause of tower failures is attributed to high intensity localized wind/ cyclonic wind, however, the utilities failed to produce wind data in majority of cases of EHV Transmission Line Tower failures which could substantiate their reasoning. The transmission utilities are unable to produce the actual real time wind speed data on the day of failures due to non-availability of wind speed data at the failure location. The standing committee observed that wherever reporting of tower failure is due to wind, the utility needs to get the wind data for the area from the IMD observatory/ nearby Airport/ nearest wind farms, or the State Irrigation Department which would serve as representative wind speed prevailing in that area at the time of failure. It was agreed that the high wind velocity during storm and local condition of whirl wind might have exceeded the design wind speed for which the tower is designed, however, this needs to be verified. Assistance of IMD & other agencies involved in metrological field may be taken by the affected utilities in this regard and utilities may request for sharing of the wind data obtained from Observatory/Satellite/ Radar.
- c) The structural integrity of transmission towers depends on many factors including adequacy of technical standard/ stipulated codal requirement considered for designing the transmission tower, quality of material grade used in tower body, Construction methodology, workmanship and erection practices, Operations & Maintenance practices of the transmission utilities etc.
- d) Over the years, Indian Standards for design of transmission line tower has undergone changes. As revision of codal provisions is a continuous process, the changes are to be implemented prospectively. Strengthening of towers of existing transmission lines due to change in the codal provisions could be decided on case to case basis, if repeated failures are observed in a particular line. **The Committee recommended that the tower erected after restoration shall be based on latest standards/ codal**



provisions. And Spare towers which the Utilities procure also should conform to latest standards/codal provisions.

7. General recommendations and remedial measures suggested by the Committee:

The recommendations and remedial measures suggested by the Committee after detailed deliberations are given under:

- a) Apart from intimating incidents of tower failures and furnishing detailed Report in stipulated format as per Regulation 48 (8) of CEA (Measures relating to Safety and Electric Supply) Regulations, 2023, concerned utilities shall furnish a closure report for the event within 3 months including all the details and records. All utilities are requested to adhere to these timelines strictly.
- b) Digitization of Spares and Inventory Management of transmission system assets using suitable software like SAP shall be taken up on priority basis.
- c) Recommendations of the Task Force on Cyclone Resilient Robust Electricity Transmission and Distribution (T&D) Infrastructure in Coastal area [Report brought out in May, 2021) shall be considered for appropriate adoption by the Utilities concerned.
- d) All utilities to develop in-house teams equipped with relevant tower design software to simulate, analyze, and address design issues in failed towers.
- e) It has been observed that wind intensity has changed in certain parts of the country due to climate change. In response, the wind map was revised by SERC in 2016 and incorporated into the National Building Code (NBC) by BIS. However, the revised wind map has yet not been included in IS 875. SERC, in coordination with IMD, has been requested to update the wind map. Until IS 875 is formally revised, utilities are advised to refer to the wind map provided in the National Building Code for the design of towers.
- f) After every failure, the concerned utility needs to submit the actual wind velocity prevailed in the affected area so that the Investigating Team of Standing Committee could get reference wind speed prevailed over that area. In this matter, the respective utility may seek the help of IMD/ nearest Airport/ nearest wind farms, or the State Irrigation Department to estimate the wind speed in affected area based on data obtained from observatory/ Satellite/Radar.
- g) The towers which were designed based on old technical standards shall be checked and strengthened based on latest technical standards.



- h) For Towers having special design with high body extensions and having powerline crossing (single or multiple) beneath it, the Committee recommended to increase the reliability level (+1) to ensure reliability and greater structural stability. It was also suggested that CPRI may be consulted to validate this approach.
- i) For power line crossing, the towers may be designed for higher reliability level and further emphasized that in RFPs, the reliability level should be specified for power line crossings.
- j) For towers located in overlapping wind zones, the Committee recommended that higher wind zone shall be considered if the tower is situated within 50 km of the border area, and the Tower may be designed accordingly.
- k) Due to climatic change, incidents of high winds are increasing. Transmission Utilities need to take proactive measures such as increased line patrolling, immediate replacement of missing members/bolts. Various deficiencies such as missing members, missing bolts, bent members, incorrect attachment of cross arm, chimney covered with soil, rusted stub/members etc. has been observed during the failure site visit of various transmission towers of different utilities. These deficiencies may be attributed to poor workmanship, erection deficiency, O&M issues etc. Utilities shall take necessary precautions and carry out proper maintenance of their lines so as to avoid failure of towers due to such deficiencies.
- l) In case of damage of foundation of towers, the foundation design is required to be examined in accordance with applicable technical standards and latest codal provisions.
- m) The material test report of failed towers should be examined to ascertain the quality of the material.
- n) Committee suggested to clear the encroachment in the ROW of the line. Committee advised that utilities should improve their erection, patrolling and operation and maintenance practices.
- o) Regular patrolling of the lines is required for smooth and trouble-free operation of line. During patrolling any unauthorized construction/use/ storage under and around the towers should also be checked and if such activity is observed, local administrative authority should be immediately informed for assistance and necessary action.
- p) In most of the cases, the failure of EHV transmission towers are attributed to wind exceeding the normative design wind speed. However, the failure may also happen due to tower design inadequacies such as inappropriate design aspects, reliability level, loading calculations, O&M issues etc. All these aspects should also be taken care of comprehensively while investigating and analysing the causes of failure and same may be addressed appropriately



- q) Wherever, transmission lines are passing through cyclone prone areas i.e. areas upto 60 km from coast following practices shall be adhered to:
- Importance factor for cyclonic region (k₄) of 1.3 shall be considered for tower design.
 - The fabricated tower parts and stubs shall have a minimum overall zinc coating of 900 gram/m² of surface area except for plates and sections below 5 mm which shall have a minimum overall zinc coating of 610 gram/m² of surface area. The average zinc coating for all sections and plates 5 mm and above shall be maintained as 127 microns and that for plates and sections below 5 mm shall be maintained as 87 microns.
- r) Practices of using towers designed as per older versions of IS codes shall be stopped by the utilities and it shall be ensured that the transmission lines are designed and erected as per latest IS codes, Regulations and recommendations of the Standing Committee, as applicable. The failed towers, which are designed as per old codes/Regulations shall be replaced by towers designed as per latest IS codes.

Annexure-I: List of Participants (24.08.2026)

CEA

1. Sh. NRLK Prasad, Chief Engineer, PSETD
2. Smt. Kavita Jha, Director, PSETD
3. Sh. Ashish Lohiya, Dy. Director (PSE&TD)
4. Smt. Jyothi Singh, Dy. Director (PSE&TD)
5. Sh. Amrendra Pratap Singh, Assistant Director (PSE&TD)

POWERGRID

1. Sh. Amit Kumar, GM (AM)
2. Ms. Beni Madhav, Sr. DGM (AM)
3. Ms. Indra Singh Rouriya, DGM(Engg.TL)

MSETCL

1. Sh. Sanjeev Gopal Bhole, Chief Engineer
2. Sh. Vinod Janardhan Hambad, Executive Engineer

VENA

1. Ms. Mangal Joyti Meena, AGM
2. Sh. Dileep Kumar R, AGM
3. Sh. Aditya Devnath, AGM (Engineering)

MPPTCL

1. Sh. Ankit Kumar, EE
2. Sh. Ravendra Patel, EE
3. Sh. Vikas, SE

UPPTCL

1. Sh. Sanjay Kumar Paswan, CE

ADANI ENERGY SOLUTION LTD

1. Sh. Milan Popat, Head
2. Sh. Rajat Bajpai, Associate Manager

CPRI

1. Sh. K. Vijaya Kumar, Joint-Director

CSIR-SERC

1. Dr. R.P. Rokade, Scientist-F

DTL

1. Sh. Devender Singh, GM(T)
2. Sh. Subhash Chandra Jha, Sr. Mgr. (Tech)

IMD

1. Sh. Sudhaeer Kumar Dwivedi, Sc-D

NTPC

1. Sh. Pawan Sharma, Manager Electrical
2. Sh. Prem Reddy P, DGM, PE-Elect.

HVPNL

1. Sh. Kapil, EE
2. Sh. Rajesh Kumar, SE
3. Sh. Pushpendra Singh, SE
4. Sh. Sanjeev Kumar XEN

JUSNL (Ranchi)

1. Sh. Prashant Chaturvedi, DGM

BSPTCL

1. Sh. Sunil Kumar Gupta, ESE O&M

KPTCL

1. Sh. Ramesh babu M, EE
2. Sh. Sudhakar Garapati, Asst. EE
3. Sh. V.K. Shoba, Senior Executive Engineer

NHPC

1. Sh. Keshav Kishore Jha, Sr. Manager (Engineering)

RRVNL

1. Sh. S.K. Khatry, Executive Engineer
2. Sh. G.L. Jain, Superintending Engineer
3. Sh. R.N. Kadhala, Superintending Engineer
4. Sh. Mohit Jain, AEN (Design)

RRVUNL

1. Sh. Raman Jain, EE

Annexure-II: Detailed information of EHV Transmission Line Tower Failure cases as reported by Various Transmission Utilities

S.N.	Utility	Date of Failure	Description	Page No
PGCIL				
1.1	PGCIL	03.05.2026	765 kV Bhiwani-Moga Transmission line	
1.2	PGCIL	08.05.2026	220 kV D/C Guna-Shivpuri Line	
1.3	PGCIL	19.05.2026	400 kV D/C (Quad) Raipur PS - Dhamtari 1&2 TL	
1.4	PGCIL	28.05.2026	765 kV Agra-Jhatikara Line	
1.5	PGCIL	29.05.2026	400 kV ORAI (PG)-ORAI(UP)-II 400 kV Garautha(UP)-Orai(UP)-I	
1.6	PGCIL	31.05.2026	400 kV D/C (Twin) Nagapattinam PS - Trichy Line-1 & 2	
BBMB				
2.1	BBMB	03.05.2026	220 kV Charkhi Dadri-Ballabgarh Ckt 220 KV Charkhi Dadri-Samaypur Ckt (Double Circuit Line)	
GETCO				
3.1	GETCO	19.03.2026	220 kV Jamnagar - Essar Line 1 & 2	
3.2	GETCO	19.03.2026	400 kV Varsana Hadala Line / 400kV Mundra Mansar Line	
HVPNL				
4.1	HVPNL	28.05.2026	400 kV D/C Khedar – Nuhyawali	
KPTCL				
5.1	KPTCL	14.05.2026	400 kV KAIGA- Guttur 1 & 2	
RENEW				
6.1	RENEW	23.05.2026	400 kV Double Circuit Twin HTLS Gadag(PS) – Koppal (PS) Transmission Line	
6.2	RENEW	24.05.2026	400 kV Double Circuit Twin HTLS Gadag(PS) – Koppal (PS) Transmission Line	
MAHATRANSCO				
7.1	MAHATRANSCO	24.05.2026	220 kV Akola-Balapur DCDC Lines	

MP TRANSCO				
8.1	MP TRANSCO	11.06.2026	220 kV Satna-Kotar DCDS line	
Vena Energy				
9.1	Vena Energy	17.05.2026	220 kV Transmission line tower failure of Vena Energy Vidyuth Private limited	
NTPC				
10.1	NTPC	01.05.2026	400 kV DC Jhabua Jabalpur Transmission Line	
ADANI				
11.1	ADANI	28.05.2026	765 kV S/C Akola (2) – Koradi (3) line – 1	
11.2	ADANI	26.06.2026	765 kV S/C Akola (2) – Koradi (3) line – 1	
UPPTCL				
12.1	UPPTCL	12.05.2026	220 kV Bareilly(400)-CB Ganj Ckt-I	
12.2	UPPTCL	25.05.2026	220 kV Roza - Dohna Line	
RVPN				
13.1	RVPN	04.05.2026	220 kV S/C Bap-Barsingsar line	

1. PGCIL

1.1 765 kV Bhiwani-Moga Transmission line

Sl. No.	Details	Remarks
1.	Name of Transmission line with voltage level:	765 kV Bhiwani-Moga Transmission line
2.	Date and time of occurrence/discovery of failure:	03.05.2026 at 21:44 hrs
3.	Length of line (km):	273 kM
4.	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	S/C (Single Circuit)
5.	Number of Towers and Type of Towers failed: [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	1 Suspension- (A+6) (Loc No 84) 3 Tension [C+9 (Loc No 50), B+18 (Loc No 51), C+0 (Loc No 52)]
6.	Tower location No. with reference to nearest substation(indicate Name):	84, 50, 51, 52
7.	Name and size of conductor:	Bersimis (dia-35.05 mm)
8.	No. of sub-conductors per bundle and bundle spacing:	4 sub conductors, bundle spacing-457 mm
9.	Number and size of Ground wire/OPGW (if provided):	2 Ground wire (dia-10.98 mm)
10.	Type of insulators in use(Porcelain / Glass / Polymer):	Polymer
11.	Configuration of insulators (I / V / Y / tension):	Suspension- I-V-I
12.	No. of insulators per string and No. of strings per phase:	Suspension- 2 insulator per string and 2 string per phase
13.	Year of construction / commissioning:	2012
14.	Executing Agency:	EMCO Limited
15.	Weather condition on the date of failure:	Severe Thunderstorm
16.	Terrain Category:	Plain
17.	Reliability Level:	2
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind:	4

19.	Details of earthing of tower (pipe type/ Counter poise):	Pipe type
20.	Line designed as per IS:802 (1977/1995/2015 any other code):	IS:802 1995
21.	The agency who designed the line:	POWERGRID Corporation of India Ltd
22.	Any Special consideration in design:	Strengthening was carried out.
23.	Details of last maintenance activity along with date:	10.03.2026 (Insulator replacement at Tower no. 40)
24.	Power flow in the line prior to failure:	(-) 51 MW, (-) 451 MVar
25.	Any missing member found before / after failure of towers:	NIL
26.	Condition of foundation after failure:	Normal
27.	Brief Description of failure: [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	765kV Bhiwani-Moga tripped on 03.05.2026 at 21:44 hrs on Y-E (Ph-Earth). FLR Bhiwani: Y-N 15.37 KA, 25.98 KM (Main-1), 26.01 KM (Main-2). TWFL: 28 KM from Bhiwani.
28.	Probable cause of failure:	Heavy winds
29.	Details of previous failure of the line / tower :	In 2021 under Hisar TLM, Loc no.-293
30.	Whether line will be restored on ERS or Spare tower will be used:	Spare Tower
31.	Likely date of restoration:	18.05.2026
32.	Present Status:	Restoration work in progress.
33.	Details of any Tests carried out after failure(attach test reports):	Physical Inspection
34.	Wind speed data of date & time of failure from nearby authorized observatory:	Data not available; being arranged from IMD department.
35.	Location of failed tower a. Location Coordinates: b. Nearest Airport: c. District and State:	Tower Number 50, 51, 52, 84 • Coordinates: 28.810289"N 76.035168"E, 28.812208"N 76.035441"E, 28.815522"N 76.035855"E • Nearest Airport: Hisar Airport (HSS) • District & State: Bhiwani, Haryana
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Attached (with all horizontal & vertical dimensions including base width)
37.	Tower weight:	Tower Number 84 (A+6) – 26.327 MT
38.	Tower spotting data:	Attached.
39.	Tower schedule of affected section:	Attached in excel file
40.	Sag tension calculation considered for design of tower:	Yes
41.	Design document of failed towers:	Attached.

42.	Any other relevant information:	NA
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1.2 220 kV D/C Guna-Shivpuri Line

Sl. No.	Details	Remarks / Data
1.	Name of Transmission line with voltage level	220 kV D/C Guna-Shivpuri Line
2.	Date and time of occurrence/discovery of failure	08-05-2026, 20:43 Hrs
3.	Length of line (km)	101.646Km
4.	Type of configuration [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	D/C
5.	Number of Towers and Type of Towers failed [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	03 Nos. -Suspension Collapsed DA+6-(T.No.-123) DA+1.5-(T.No.-124) DA+3 (T.No.-125) DA+0 (T No.-126) X Arm Damaged
6.	Tower location No. with reference to nearest substation (indicate Name)	Loc No.-123,124,125,126
7.	Name and size of conductor	Single Zebra, ACSR
8.	No. of sub-conductors per bundle and bundle spacing	Single Conductor
9.	Number and size of Ground wire/OPGW (if provided)	OPGW
10.	Type of insulators in use (Porcelain / Glass / Polymer)	Polymer
11.	Configuration of insulators (I / V / Y / tension)	"I" Type
12.	No. of insulators per string and No. of strings per phase	01/String, 01string/Phase
13.	Year of construction / commissioning	Oct'2022
14.	Executing Agency	M/s KEC

15.	Weather condition on the date of failure	Wind & Thunderstorm
16.	Terrain Category	Plain
17.	Reliability Level	I
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind:	Zone IV- 47 m/sec
19.	Details of earthing of tower (pipe type/ Counter poise):	Counterpoise-123 Pipe-124-125-126
20.	Line designed as per IS:802 (1977/1995/2015 any other code	IS:802 (1995)
21.	The agency who designed the line	M/s KEC
22.	Any Special consideration in design	NIL
23.	Details of last maintenance activity along with date	123-124/15.04.2026 125/08.10.2025 126/15.10.2025
24.	Power flow in the line prior to failure	158MW
25.	Any missing member found before / after failure of towers	NO
26.	Condition of foundation after failure	123-Ok 124-Chimney Damaged 125-Chimney Damaged 126-Ok
27.	Brief Description of failure [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / windstorm etc.]	Tower No.-123 to 125 towers collapsed and X-arm of 126 damaged during very heavy localized cyclonic wind.
28.	Probable cause of failure	As above
29.	Details of previous failure of the line / tower	NA
30.	Whether line will be restored on ERS or Spare tower will be used	On ERS
31.	Likely date of restoration	Through ERS Ckt-1/17.05.2026

		Ckt-2/20.05.2026 Permanent by-15.06.2026
32.	Present Status	ERS work under progress
33.	Details of any Tests carried out after failure (attach test reports)	Material are being sent to lab for testing
34.	Wind speed data of date & time of failure from nearby authorized observatory	Applied with nearest observatory
35.	Location of failed tower a. Location Coordinates b. Nearest Airport c. District and State	a. Lat-/Long- • 25.022419444/77.591483333 • 25.025363889/77.59186111 • 25.028380556/77.59225277 • 25.03172222/77.59267777 b. Gwalior c. Guna, MP
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Attached.
37.	Tower weight	DA+6-(T.No.-123)-5.6MT DA+1.5-(T.No.-124)-4.606MT DA+3 (T.No.-125)-5.59MT DA+0 (T No.-126)-4.26MT
38.	Tower spotting data	-
39.	Tower schedule of affected section	Attached
40.	Sag tension calculation considered for design of tower	Attached
41.	Design document of failed towers	Attached
42.	Any other relevant information	-

1.3 400 kV D/C (Quad) Raipur PS – Dhamtari 1&2 TL

Sl. No.	Details	Remarks
1.	Name of Transmission line with voltage level	400 kV D/C (Quad) Raipur PS – Dhamtari 1&2 TL
2.	Date and time of occurrence/discovery of failure	19-05-2026, 16:52 Hrs
3.	Length of line (km)	88.06kM
4.	Type of configuration [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	D/C Vertical Configuration
5.	Number of Towers and Type of Towers failed [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with/without extension (indicate the type & length of extension)]	01 No (Loc No 30) “DB1+6” Type Tension CKT 1 Top cross arm damaged 01 No. (Loc No 31) “DA+6” Type Suspension Tower collapsed 01 No (Loc No 32) DA+3 Type Suspension Tower collapsed 01(Loc No 33) No DA+0 Type Suspension Tower Earth wire peak CKT 1 Damaged
6.	Tower location No. with reference to nearest substation (indicate Name)	Location no.-30, 31, 32 & 33 Near 765KV Raipur Pooling Station
7.	Name and size of conductor	AL59 Quad Moose
8.	No. of sub-conductors per bundle and bundle spacing	04 sub-conductors per bundle,
9.	Number and size of Ground wire/OPGW (if provided)	01 EW (7/3.66) & 01 OPGW
10.	Type of insulators in use (Porcelain / Glass / Polymer)	Polymer(CLR)
11.	Configuration of insulators (I/V/Y/tension)	Loc No -31 & 32 “DI” Type both Side, Loc N 30 – Quad Tension
12.	No. of insulators per string and No. of strings per phase	01/String, 02string/Phase

13.	Year of construction/commissioning	March 2025
14.	Executing Agency	M/s BAJEL
15.	Weather condition on the date of failure	Heavy Rain & Heavy cyclonic Windy condition.
16.	Terrain Category	Plain
17.	Reliability Level	-
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind: Zone	WZ-3 & 44 m/sec
19.	Details of earthing of tower (pipe type/ Counter poise):	Pipe type
20.	Line designed as per IS:802 (1977/1995/2015 any other code	IS:802 2015
21.	The agency who designed the line	POWERGRID
22.	Any Special consideration in design	NA
23.	Details of last maintenance activity along with date	Sept 2025
24.	Power flow in the line prior to failure	322 MW Ckt-1 / 324 MW Ckt-2
25.	Any missing member found before / after failure of towers	NO
26.	Condition of foundation after failure	1. Loc. No 30 ("DB1+6") is OK. 2. Loc. No. 31 ("DA+6") Stub of all legs are bend/damaged. Chimney cracked 3. Loc No. 32 (DA+3) Stub of all leg are bend/damaged and chimney found cracked. 4. Loc No 33 (DA+0) is OK
27.	Brief Description of failure [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / windstorm etc.]	Heavy cyclonic nature wind flow observed nearby locations, many heavy trees are found uprooted. Keeping in view the facts collapse of towers observed due to heavy cyclonic wind (Photograph attached)

28.	Probable cause of failure	Heavy cyclonic wind
29.	Details of previous failure of the line / tower	NA
30.	Whether line will be restored on ERS or Spare tower will be used	Initially the line shall be restored on ERS.
31.	Likely date of restoration	29.05.2026 on ERS
32.	Present Status	Restoration is under progress
33.	Details of any Tests carried out after failure (attach test reports)	Material shall be sent to lab for testing
34.	Wind speed data of date & time of failure from nearby authorized observatory	Applied with nearest observatory
35.	Location of failed tower a. Location Coordinates b. Nearest Airport c. District and State	a. Location Coordinates: • Loc 30: 21°17'58" N, 81°17'9" E • Loc 31: 21°17'47" N, 81°17'0" E • Loc 32: 21°17'37" N, 81°16'52" E • Loc 33: 21°17'27" N, 81°16'45" E b. Nearest Airport: Raipur c. District and State: Durg / CG
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Attached
37.	Tower weight	DA+6/DA+3:-19.36 MT/18.697 MT
38.	Tower spotting data	Attached
39.	Tower schedule of affected section	Attached
40.	Sag tension calculation considered for design of tower	Attached
41.	Design document of failed towers	Attached
42.	Any other relevant information	None

1.4 765 kV Agra-Jhatikara Line

Sl. No.	Details	Remarks
1.	Name of Transmission line with voltage level:	765 kV Agra-Jhatikara Line
2.	Date and time of occurrence/discovery of failure:	17:06 Hrs, 28.05.2026
3.	Length of line (km):	252.7 km
4.	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	S/C
5.	Number of Towers and Type of Towers failed: [Suspension/tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	01 No. of Tower, D+25m (Fully damaged), Tension tower, Power Line Crossing 01 no. of tower, A+0m (partially damaged), Suspension tower
6.	Tower location No. with reference to nearest substation(indicate Name):	Tower location No. 501, From Jhatikara end (177 no tower)
7.	Name and size of conductor:	Bersimis Conductor, 35.05mm dia
8.	No. of sub-conductors per bundle and bundle spacing:	4 Sub-conductors,
9.	Number and size of Ground wire/OPGW (if provided):	02 Ground wire,
10.	Type of insulators in use(Porcelain / Glass / Polymer):	Polymer
11.	Configuration of insulators (I / V / Y / tension):	Tension
12.	No. of insulators per string and No. of strings per phase:	4
13.	Year of construction / commissioning:	2013
14.	Executing Agency:	Aster

15.	Weather condition on the date of failure:	Severe Weather, heavy Windstorm
16.	Terrain Category:	I
17.	Reliability Level:	II
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind:	Wind Zone 4
19.	Details of earthing of tower (pipe type/ Counter poise):	Pipe type
20.	Line designed as per IS:802 (1977/1995/2015 any other code):	
21.	The agency who designed the line:	Powergrid
22.	Any Special consideration in design:	N/A
23.	Details of last maintenance activity along with date:	27.05.2026
24.	Power flow in the line prior to failure:	654 MW
25.	Any missing member found before / after failure of towers:	No
26.	Condition of foundation after failure:	Foundation got damaged due to collapsed tower D+25. Foundation of A type tower is intact.
27.	Brief Description of failure: [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	Nuh area is near to Aravali Hills, where the wind blows during the normal course of time. On 28.06.2026, wind gusts formed and localized windstorm caused the tower to collapse. Tower no. 501 was completely damaged. The foundation of the tower also got damaged due to collapsing of tower. Tower No. 500 was found partially damaged. from above waist level. Newspaper clipping is attached
28.	Probable cause of failure:	Localized windstorm near Aravali hill, Nuh
29.	Details of previous failure of the line / tower :	No Failure
30.	Whether line will be restored on ERS or Spare tower will be used:	Spare Tower
31.	Likely date of restoration:	20.06.2026
32.	Present Status:	Restoration work under progress
33.	Details of any Tests carried out after failure(attach test reports):	Test under progress

34.	Wind speed data of date & time of failure from nearby authorized observatory:	
35.	Location of failed tower a. Location Coordinates: b. Nearest Airport: c. District and State:	Village-Rithora, Tehsil-Nuh, Distt- Nuh a. Location Coordinates: 28.155935 N, 77.035822 E b. Nearest Airport: IGI Airport c. District and State: Nuh District, Haryana
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	
37.	Tower weight:	92093.56 Kg
38.	Tower spotting data:	Attached
39.	Tower schedule of affected section:	Attached
40.	Sag tension calculation considered for design of tower:	Attached
41.	Design document of failed towers:	Attached
42.	Any other relevant information:	Nil

1.5 400 kV ORAI (PG)-ORAI(UP)-II 400kV Garautha (UP)-Orai (UP)-1

Sl. No.	Details	Remarks
1.	Name of Transmission line with voltage level	400 kV ORAI (PG)-ORAI(UP)-II 400 kV Garautha(UP)-Orai(UP)-I
2.	Date and time of occurrence/discovery of failure	28-05-2026, 23:22 Hrs
3.	Length of line (km)	41.876 KM
4.	Type of configuration [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	D/C Vertical Configuration
5.	Number of Towers and Type of Towers failed [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	05 No. (DA+0 – Loc 47, 48, 50 & DA+6 – Loc-49,51 Type Suspension Tower)
6.	Tower location No. with reference to nearest substation (indicate Name)	Location no.-47 to 51 Near Orai Substation
7.	Name and size of conductor	ACSR QUAD MOOSE & Dia- 31.77mm
8.	No. of sub-conductors per bundle and bundle spacing	04 sub-conductors per bundle, bundle spacing: 457 mm.
9.	Number and size of Ground wire/OPGW (if provided)	01 EW (7/3.66) & 01 OPGW
10.	Type of insulators in use (Porcelain / Glass / Polymer)	LOC. 47-51 – POLYMER
11.	Configuration of insulators (I / V / Y / tension)	“DI” Type both Side
12.	No. of insulators per string and No. of strings per phase	01/String, 02string/Phase

13.	Year of construction / commissioning	March 2018
14.	Executing Agency	M/s L&T
15.	Weather condition on the date of failure	Heavy cyclonic wind
16.	Terrain Category	I
17.	Reliability Level	I
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind: Zone	IV- 47 m/sec
19.	Details of earthing of tower (pipe type/ Counter poise):	Pipe type
20.	Line designed as per IS:802 (1977/1995/2015 any other code	IS:802 (1995)
21.	The agency who designed the line	POWERGRID
22.	Any Special consideration in design	NFW taken.
23.	Details of last maintenance activity along with date	22 May 2026
24.	Power flow in the line prior to failure	418MW
25.	Any missing member found before / after failure of towers	No
26.	Condition of foundation after failure	Due to heavy cyclonic wind
27.	Brief Description of failure [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / windstorm etc.]	Failure occurred due to heavy cyclonic wind on 28.05.2026 leading to excessive conductor swing and mechanical stress on line components. Photographs attached.
28.	Probable cause of failure	Heavy cyclonic wind
29.	Details of previous failure of the line / tower	NIL

30.	Whether line will be restored on ERS or Spare tower will be used	ERS
31.	Likely date of restoration	ERS-06.06.2026 & Normal tower - 15.06.2026
32.	Present Status	Mobilization for restoration work
33.	Details of any Tests carried out after failure (attach test reports)	Sample being sent for testing
34.	Wind speed data of date & time of failure from nearby authorized observatory	Requested from IMD
35.	Location of failed tower	
	Location Coordinates Nearest Airport District and State	79.4340277778, 25.9297194444 Loc 47 79.4371277, 25.9317977– Loc 48 79.4402138889, 25.9338111111 Loc 49 79.4434111111, 25.9359416667 Loc50 79.4468421, , 25.9380292 Loc51 KANPUR(U. P) JALAUN (U.P)
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Attached
37.	Tower weight	15.72
38.	Tower spotting data	Attached
39.	Tower schedule of affected section	Attached
40.	Sag tension calculation considered for design of tower	Attached
41.	Design document of failed towers	Attached
42.	Any other relevant information	-

1.6 400 kV D/C (Twin) Nagapattinam PS – Trichy Line-1 & 2

Sl. No.	Details	Remarks
1.	Name of Transmission line with voltage level	400 kV D/C (Twin) Nagapattinam PS – Trichy Line-1 & 2
2.	Date and time of occurrence/discovery of failure	31-05-2026, 17:04 Hrs
3.	Length of line (km)	158.7kM
4.	Type of configuration [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	D/C Vertical Configuration
5.	Number of Towers and Type of Towers failed [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	02 Nos (Loc Nos 437 & 438) “DA+0” Type Suspension Tower collapsed. 01 No (Loc No 439) “DB+0” Type Tension Tower collapsed. 01 No (Loc No.435) “DA+0” Type Suspension Tower Earth wire peak CKT-1 Damaged. 01 No (Loc No.436) “DA+0” Type Suspension Tower Earth peak CKT-1 & 2 Damaged. 01 No (Loc No.434) “DA+0” Type Suspension Tower Earth peak CKT-1 Damaged. 01 No. (Loc No 440) “DA+0” Type Suspension Tower Top cross arms CKT-1 and Earth peak CKT-1&2 Damaged. 01(Loc No 441) “DA+0” Type Suspension Tower Earth wire peak CKT 1 Damage.
6.	Tower location No. with reference to nearest substation (indicate Name)	Location no.- 434 to 441 Near 400kV Trichy Sub Station
7.	Name and size of conductor	ACSR Twin Moose
8.	No. of sub-conductors per bundle and bundle spacing	02 sub-conductors per bundle

9.	Number and size of Ground wire/OPGW (if provided)	01 EW (7/3.66) & 01 OPGW
10.	Type of insulators in use (Porcelain / Glass / Polymer)	Porcelain
11.	Configuration of insulators (I/V/Y/tension)	Loc No. 434, 435, 436, 437, 438, 440 & 441 "Single I" Type both Side Loc No.439 – Double Tension
12.	No. of insulators per string and No. of strings per phase	23/String, 01String/Phase (SI) 24/String, 02String/Phase (DT)
13.	Year of construction / commissioning	31-12-1993
14.	Executing Agency	M/s Best & Crompton, Chennai
15.	Weather condition on the date of failure	Heavy Wind
16.	Terrain Category	I
17.	Reliability Level	I
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind: Zone	IV-47 m/sec
19.	Details of earthing of tower (pipe type/ Counter poise):	Loc.434 – Counter poise Loc.435 – Counter poise Loc.436 – Counter poise Loc.437 – Counter poise Loc.438 – Pipe type Loc.439 – Pipe type Loc.440 – Counter poise Loc.441 – Counter poise
20.	Line designed as per IS:802 (1977/1995/2015 any other code)	IS:802 1977
21.	The agency who designed the line	SAE (India) Limited
22.	Any Special consideration in design	NA
23.	Details of last maintenance activity along with date	April 2026
24.	Power flow in the line prior to failure	30 MW Ckt-1 / 30 MW Ckt-2
25.	Any missing member found before / after failure of towers	NO

26.	Condition of foundation after failure	1. Loc. No.434 (DA+0) is OK 2. Loc. No.435 (DA+0) is OK. 3. Loc. No.436 (DA+0) is OK. 4. Loc. No.437 (DA+0) Stub of all leg are damaged. 5. Loc. No.438 (DA+0) Stub of all leg are damaged. 6. Loc. No.439 (DB+0) is OK. 7. Loc. No.440 (DA+0) is OK. 8. Loc. No.441 (DA+0) is OK.
27.	Brief Description of failure [Along with photographs (if available), other related information like tower schedule, newspaper clipping cyclone / windstorm etc.]	Heavy whirlwind accompanied by raining flow observed nearby for locations, many heavy trees are found uprooted and many TNEB LT and HT Poles turn it over. Keeping in view the facts collapse of towers observed due to heavy whirlwind (Photograph attached)
28.	Probable cause of failure	Heavy whirlwind
29.	Details of previous failure of the line / tower	NA
30.	Whether line will be restored on ERS or Spare tower will be used	1. Line will be restored with ERS. Permanent restoration activities will be carried out parallelly by destringing, Tower dismantling, stub/chimney rectification and tower erection (both DA tower) & restoration with stringing.
31.	Likely date of restoration	By 14.06.2026 (Through ERS)
32.	Present Status	Restoration is under progress
33.	Details of any Tests carried out after failure (attach test reports)	Material are being sent to lab for testing
34.	Wind speed data of date & time of failure from nearby authorized observatory	Applied with nearest observatory
35.	Location of failed tower a. Location Coordinates b. Nearest Airport c. District and State	a. Location Coordinates: • Loc.435: 10°37'59.34"N, 78°42'37.68"E • Loc.436: 10°38'0.42"N, 78°42'24.90"E

		• Loc.437: 10°38'1.20"N, 78°42'13.92"E • Loc.438: 10°38'2.22"N, 78°42'1.14"E • Loc.439: 10°38'2.22"N, 78°41'48.96"E • Loc.440: 10°38'4.74"N, 78°41'37.56"E • Loc.441: 10°38'5.76"N, 78°41'23.88"E b. Nearest Airport: Trichy c. District and State: Pudukottai Dist / Tamilnadu
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Attached
37.	Tower weight	DA+0 – 9.085 MT, DB+0 – 17.201 MT
38.	Tower spotting data	Shall be submitted later
39.	Tower schedule of affected section	Attached
40.	Sag tension calculation considered for design of tower	Shall be submitted later
41.	Design document of failed towers	Shall be submitted later
42.	Any other relevant information	-

2. BBMB

2.1 220 kV Charkhi Dadri-Ballabgarh Ckt 220 KV Charkhi Dadri-Samaypur Ckt (Double Circuit Line)

Sl. No.	Details	Remarks
1.	Name of Transmission line with voltage level:	220 kV Charkhi Dadri-Ballabgarh Ckt 220 KV Charkhi Dadri-Samaypur Ckt (Double Circuit Line)
2.	Date and time of occurrence/discovery of failure:	03.05.2026, at 22.05 hrs
3.	Length of line (km):	T 220 KV Charkhi Dadri-Ballabgarh Ckt -120.117 km and 220 KV Charkhi Dadri-Samaypur Ckt- 118.396 km
4.	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	Double Circuit
5.	Number of Towers and Type of Towers failed: [Suspension/tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	Two no. (Suspension Towers without Extension)
6.	Tower location No. with reference to nearest substation(indicate Name):	296 & 297 (Tower no. 268 starts from 220 Substation, BBMB, Charkhi Dadri, Substation.
7.	Name and size of conductor:	ACSR Goat Conductor, 0.3 sq inch Copper Equivalent of both circuits
8.	No. of sub-conductors per bundle and bundle spacing:	Single Conductor of both circuits
9.	Number and size of Ground wire/OPGW (if provided):	Earth Wire, 19/0.104"
10.	Type of insulators in use(Porcelain / Glass / Polymer):	Polymer of both circuits
11.	Configuration of insulators (I / V / Y / tension):	Suspension of both circuits
12.	No. of insulators per string and No. of strings per phase:	Single of both circuits

13.	Year of construction / commissioning:	220 KV Charkhi Dadri-Ballabgarh Ckt - 1976 220 KV Charkhi Dadri-Samaypur Ckt- 1988
14.	Executing Agency:	BBMB
15.	Weather condition on the date of failure:	Heavy storm and Wind zone-4 as per IS 875 failure: (Part 3)
16.	Terrain Category:	Plain
17.	Reliability Level:	-
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind:	Zone 4
19.	Details of earthing of tower (pipe type/ Counter poise):	Pipe type
20.	Line designed as per IS:802 (1977/1995/2015 any other code):	-
21.	The agency who designed the line:	BCB
22.	Any Special consideration in design:	No
23.	Details of last maintenance activity along with date:	15.04.2026
24.	Power flow in the line prior to failure:	42 MW
25.	Any missing member found before / after failure of towers:	No
26.	Condition of foundation after failure:	Ok
27.	Brief Description of failure: [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	Stub Broken and foundation is ok
28.	Probable cause of failure:	Very Heavy storm
29.	Details of previous failure of the line / tower :	NA
30.	Whether line will be restored on ERS or Spare tower will be used:	Spare tower will be used
31.	Likely date of restoration:	10.05.2026
32.	Present Status:	Circuit under breakdown
33.	Details of any Tests carried out after failure(attach test reports):	No
34.	Wind speed data of date & time of failure from nearby authorized observatory:	NA

35.	Location of failed tower a. Location Coordinates: b. Nearest Airport: c. District and State:	28.617344°,76:311661° for T. No-296 28.617772°,76.314725° for T. No. -297 IGI,Delhi and Charkhi Dadri, Haryana
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	106.ft Height & 5.57 stub to stub distance of both towers
37.	Tower weight:	6500 kg of both tower
38.	Tower spotting data:	NA
39.	Tower schedule of affected section:	Stub leg
40.	Sag tension calculation considered for design of tower:	NA
41.	Design document of failed towers:	As per BBMB design
42.	Any other relevant information:	NO

3. GETCO

3.1 220kV Jamnagar – Essar Line 1 & 2

S I. N o .	Details	Remarks
1	Name of Transmission line with voltage level:	220 kV Jamnagar – Essar Line 1 & 2
2	Date and time of occurrence/discovery of failure	19.03.2026/15:37
3	Length of line (km):	48.123
4	Type of configuration:[(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)	D/C
5	Number of Towers and Type of Towers failed:[Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	Tower Loc no: 18(S) & 19(S) Collapsed, 17(T) & 20(S) tower peak damaged Type of tower: 18, 19 & 20 – Suspension, DA+0 17 – Tension, DC+0
6	Tower location No. with reference to nearest substation(indicate Name):	220KV Jamnagar SS loc no 18
7	Name and size of conductor:	Zebra (7 Strands of steel 3.18MM and 54 Strands of Alu. 3.18MM)
8	No. of sub-conductors per bundle and bundle spacing:	NA
9	Number and size of Ground wire/OPGW (if provided):	OPGW 24 Fibre
10	Type of insulators in use(Porcelain / Glass / Polymer):	Silicon Rubber Insulator

1 1	Configuration of insulators (I / V / Y / tension):	I
1 2	No. of insulators per string and No. of strings per phase:	Single insulator per phase, Single string per phase.
1 3	Year of construction / commissioning:	09.03.2006
1 4	Executing Agency:	M/s Urja & M/s Jyoti
1 5	Weather condition on the date of failure:	Heavy cyclonic wind and heavy rainfall
1 6	Terrain Category:	Plain
1 7	Reliability Level:	Design as old IS:802, Not applicable in old tower design (IS)
1 8	Wind Zone (1/2/3/4/5/6) and velocity of wind:	5
1 9	Details of earthing of tower (pipe type/ Counter poise):	PIPE Type
2 0	Line designed as per IS:802 (1977/1995/2015 any other code):	1977
2 1	The agency who designed the line:	KPTL
2 2	Any Special consideration in design:	No any special design not considered
2 3	Details of last maintenance activity along with date:	Line Ground Patrolling carried out from loc. 01 to 40 dated 13.10.2025 Tree cutting work carried out from loc 01 to 40 dated 04.11.2025 Line Ground Patrolling work Carried Out from loc. 41 to 80 dated 17.12.2025 Tree cutting work carried out from loc 41 to 80 dated 23.12.2025

2 4	Power flow in the line prior to failure:	220KV Jamnagar Essar 1 = 10.8 MW & 220KV Jamnagar Essar 2 = 10.8 MW
2 5	Any missing member found before / after failure of towers:	No
2 6	Condition of foundation after failure:	At failure location extra earth filling work carried out by local people and tower's chimney not seen properly and due vegetation
2 7	Brief Description of failure:[Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	Due to heavy cyclonic wind and heavy rainfall loc 18(S) & 19(S) of 220KV Jamnagar Essar line 1&2 collapsed. Also Loc 17(T) & 20(S) tower peak damaged.
2 8	Probable cause of failure:	Due to heavy cyclonic wind and heavy rainfall
2 9	Details of previous failure of the line / tower :	Previously on date 17.07.2021 location no 42(S) & 43(S) of 220KV Jamnagar – Essar line 1&2 collapsed.
3 0	Whether line will be restored on ERS or Spare tower will be used:	New tower erection will be carried out
3 1	Likely date of restoration:	31.03.2026
3 2	Present Status:	New tower erection work will be started shortly.
3 3	Details of any Tests carried out after failure(attach test reports):	Not taken any test
3 4	Wind speed data of date & time of failure from nearby authorized observatory:	60km/h on 19.03.2026 at 15.30 hrs
3 5	Location of failed towera. Location Coordinates:b. Nearest Airport:c. District and State:	A) Village – Jamnagar, Sivdhara residency, B) Loc 18 – 22.41705854°/ 70.08428894°, Loc 19 – 22.41469491°/ 70.08212138°, Loc 17 – 22.41937098°/ 70.08642029°, Loc 20 – 22.41260711°/

		70.08020025° dist – Jamnagar state – Gujarat C) Jamnagar Airport.
3 6	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	NA
3 7	Tower weight:	3.87 MT Approx
3 8	Tower spotting data:	Attached herewith
3 9	Tower schedule of affected section	Attached herewith
4 0	Sag tension calculation considered for design of tower	For ASCR zebra conductor, 32 degree full wind, 3950kg 0 degree 2/3 full wind, 4360kg
4 1	Design document of failed towers:	DA+0 tower
4 2	Any other relevant information	IMD warning press release of date 19.03.2026

3.2 400 kV Varsana Hadala Line / 400kV Mundra Mansar Line

S I. N o .	Details	Remarks
1	Name of Transmission line with voltage level:	400 kV Varsana Hadala Line / 400 kV Mundra Mansar Line
2	Date and time of occurrence/discovery of failure	19.03.2026/02:32
3	Length of line (km):	145.45/ 230.65
4	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	D/C
5	Number of Towers and Type of Towers failed: [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	Tower Loc no: 261/534 Type of tower: Suspension, DR+0
6	Tower location No. with reference to nearest substation(indicate Name):	400KV Mansar SS loc no 537
7	Name and size of conductor:	Twin Moose (7 Strands of steel 3.53MM and 54 Strands of Alu. 3.53MM)
8	No. of sub-conductors per bundle and bundle spacing:	2 & 450 mm
9	Number and size of Ground wire/OPGW (if provided):	OPGW 24 Fibre
10	Type of insulators in use(Porcelain / Glass / Polymer):	Silicon Rubber Insulator
11	Configuration of insulators (I / V / Y / tension):	I
12	No. of insulators per string and No. of strings per phase:	Single insulator per phase, Single string per phase.

1 3	Year of construction / commissioning:	12.01.2011
1 4	Executing Agency:	M/s Kalpataru Power Transmission Ltd.
1 5	Weather condition on the date of failure:	Heavy Wind
1 6	Terrain Category:	Tower design as per IS:802, 1977
1 7	Reliability Level:	Tower design as per IS:802, 1977
1 8	Wind Zone (1/2/3/4/5/6) and velocity of wind:	5
1 9	Details of earthing of tower (pipe type/ Counter poise):	PIPE Type
2 0	Line designed as per IS:802 (1977/1995/2015 any other code):	1977
2 1	The agency who designed the line:	KPTL
2 2	Any Special consideration in design:	Wind pressure on conductor/EW 75 kg/sq. mtr.
2 3	Details of last maintenance activity along with date:	Line Patrolling carried out from loc. 227 to 280 dated 19.03.2026 Line Patrolling work Carried Out in 400kv Mansar Mundra line from loc. 575 to 616 dated 08.03.2026 Line Patrolling carried out in 400kv Mansar Mundra line from Loc no 590 to 616 dated 03.10.2025 Line Patrolling carried out in 400kv Mansar Mundra line from Loc no 570 to 616 dated 29.09.2025 Tree cutting carried out in 400kv Varsana Hadala line on Dt. 13.06.2025 Line Patrolling carried out in 400kv Mansar Mundra line from Loc no 500 to 550 dated 06.05.2025

		Both Line Ground Patrolling 82iagram out on Dt. 03.01.2025
2 4	Power flow in the line prior to failure:	400kv Varsana Hadala line = HV off & 400kv Mundra Mansar Line = 200 MW
2 5	Any missing member found before / after failure of towers:	No
2 6	Condition of foundation after failure:	Good
2 7	Brief Description of failure:[Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	Servere wind condition and abnormal weather during night hour link wind strom & Location falls under a high wind speed zone.
2 8	Probable cause of failure:	Due to heavy wind condition
2 9	Details of previous failure of the line / tower :	400kv Varsana Hadala line on Dt. 14.05.2019 Loc no 262 Deformed & displaced from original foundation
3 0	Whether line will be restored on ERS or Spare tower will be used:	New tower erection will be carried out
3 1	Likely date of restoration:	08.04.2026
3 2	Present Status:	New tower erection work under progress & Agency allotted
3 3	Details of any Tests carried out after failure(attach test reports):	Not taken any test
3 4	Wind speed data of date & time of failure from nearby authorized observatory:	40-50 Kmph

3 5	Location of failed towera. Location Coordinates:b. Nearest Airport:c. District and State:	A) Village – Moti barar, B) 23.04230 , 70.73030 Ta.- Maliya, dist – Morbi – Gujarat C) Bhuj Airport.
3 6	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Single line diagram of Tower is Attached herewith
3 7	Tower weight:	10.49 MT Approx
3 8	Tower spotting data:	Attached herewith
3 9	Tower schedule of affected section	Attached herewith
4 0	Sag tension calculation considered for design of tower	For ASCR Twin Moose conductor, AS per GETCO standard
4 1	Design document of failed towers:	DR+0 tower
4 2	Any other relevant information	NA

4. HVPNL

4.1 400 kV D/C JALANDHAR(PG)- SAMBA(PG) (NRSS XXIX) Line

Sr. No.	Details	Remarks
1	Name of Transmission line with voltage level	400 kV D/C Khedar – Nuhiyawali
2	Date and time of occurrence/discovery of failure	28.05.2026 at 18:53 hrs
3	Length of line (Km)	114KM
4	Type of configuration (S / C , D / C , M / C , S / C strung on D / C towers, narrow based etc	Double Ckt.
5	Number of Tower and Type of Towers failed (Suspension / Tension / dead end / special tower / river crossing tower / Power line crossing / Railway crossing etc. with without extension (indicate the type & length of extension)	Total no. of towers – 09 DA + 0 type tower – 06 DA + 3 type tower – 01 DA + 6 type tower – 01 DD + 0 type Towers – 01
6	Tower location no. with reference to nearest substation (indicate name)	TL no. 35 to 43.
7	Name and size of conductor	Twin Moose Conductor
8	No. of sub conductor per bundle and bundle spacing	2
9	No. and size of Ground wire / OPGW (if provided)	1 peak earth wire (7/3.66mm) & 2 peak OPGW
10	Type of insulator in use (Porcelain / Glass / Polymer)	Porcelain
11	Configuration of Insulators (I / V / Y / Tension)	I / Tension
12	No. of insulator per string and No. of string per phase	23 for Suspension & 24 for Tension
13	Year of construction / commissioning	25.07.2010.

14	Executive Agency	Turnkey.
15	Weather condition on the date of failure	Heavy wind cyclone.
16	Terrain Category	2
17	Reliability Level	1
18	Wind zone (½/3/4/5/6) and velocity of wind	
19	Details of earthing of tower (pipe type / counter poise)	Pipe
20	Line designed as per IS:802(1977/1995/2015any other code)	IS:802(1995)
21	The agency who designed the line	Unitech Design
22	Any special consideration in design	NIL
23	Details of last maintenance activity along with date	----
24	Power flow in the line prior to failure	----
25	Any missing member found before / after failure of towers	----
26	Conditions of foundation after failure	Cracks were found.
27	Brief description of failure (along with photographs) Other related information like tower schedule, newspaper clipping for cyclone/wind storm etc	----
28	Probable cause of failure	Heavy whirl wind storm of high intensity with Cyclonic affect.
29	Details of previous failure of the line / tower	-----
30	Whether line will be restored on ERS or spare tower will be used	-----
31	Likely date of restoration	-----
32	Present status	Collapsed towers are being removed from the site.

33	Details of any test carried out after failure from NABL accredited lab on the failed member(attach test report)	-----
34	Wind speed data of date and time of failure from nearby authorized observatory	28.05.2026 (18:53 hrs)
35	Location of failed tower	Near Kirmara Village
	(a) Location co-ordinates	-----
	(b) Nearest air port	Hisar
	© District & state	Hisar, Haryana
36	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Not Available. However basic design data of 400kV DA & DD type normal tower is as under:- Normal Span length – 400 meter. Tower width at ground level – DA type tower – 10500mm DD type tower – 17500mm Height upto peak – DA type tower – 45375mm DD type tower – 45700mm Height upto Lowest Conductor DA type tower – 22625mm DD type tower – 22300mm
37	Tower weight	DA=10249.37Kg, DA+3= 11898Kg, DA + 6 = 12638.42Kg & DD = 26043.42Kg including weight of stub & tower extension
38	Tower spotting data	----
39	Tower schedule of affected section	Attached along with committee report
40	Sag tension calculation considered for design of tower	-----
41	Design document of failed tower	Design document not traceable being very old design
42	Any other relevant information	-----

5. KPTCL

5.1 400 kV KAIGA- Guttur 1 & 2

Sl. No.	Details	Remarks
1.	Name of Transmission line with voltage level:	400 kV KAIGA- Guttur 1 & 2
2.	Date and time of occurrence/discovery of failure:	14.05.2026 at 17:39 Hrs
3.	Length of line (km):	168 Kmtrs
4.	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	DC on DC
5.	Number of Towers and Type of Towers failed: [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	7 Nos Suspension: - A+0 = 2 Nos - A+3 = 2 Nos - A+6 = 3 Nos 1 No Tension: - B+0 = 1 No
6.	Tower location No. with reference to nearest substation(indicate Name):	LOC No. 80 to 87 Near Guttur Substation
7.	Name and size of conductor:	Twin Moose ACSR
8.	No. of sub-conductors per bundle and bundle spacing:	Twin Moose ACSR
9.	Number and size of Ground wire/OPGW (if provided):	48F OPGW & Ground Wire 7/3.65
10.	Type of insulators in use(Porcelain / Glass / Polymer):	Polymer
11.	Configuration of insulators (I / V / Y / tension):	I & Tension
12.	No. of insulators per string and No. of strings per phase:	Single string for suspension and Twin strings for tension
13.	Year of construction / commissioning:	2000
14.	Executing Agency:	KEC
15.	Weather condition on the date of failure:	Gusty Wind & Heavy Rain
16.	Terrain Category:	Plain
17.	Reliability Level:	NA
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind:	Wind Zone 2, More than 20 Kmtrs/Hr
19.	Details of earthing of tower (pipe type/ Counter poise):	Pipe type earthing
20.	Line designed as per IS:802 (1977/1995/2015 any other code):	IS:802-1977
21.	The agency who designed the line:	KEC
22.	Any Special consideration in design:	No
23.	Details of last maintenance activity along with date:	Line patrolling from Loc No. 55 to 135 carried out on 21-04-2026; no visible fault found.

24.	Power flow in the line prior to failure:	178 MW in each circuit
25.	Any missing member found before / after failure of towers:	No
26.	Condition of foundation after failure:	Damaged
27.	Brief Description of failure: [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	During inspection it is found that 400KV tower from location no 80 to 87 is in damaged/collapsed condition. As per information received from public during the time of tower collapse heavy wind and rain is observed. Many Big trees and Hescom poles also collapsed due to heavy wind. Details of damages to 400KV Kaiga Guttur Line: • Location no 87 (A+3): Tower completely collapsed from stub level. Stub found in damaged condition. • Location no 86 (B+0): Tower damaged above bottom crossarm. All crossarms and top tower structure are damaged. • Location no 85 (A+6): Tower completely collapsed from stub level. Stub found in damaged condition. • Location no 84 (A+6): Tower completely collapsed from stub level. Stub found in damaged condition. • Location no 83 (A+0): Tower collapsed. Stub found in damaged condition. All crossarms damaged. • Location no 82 (A+3): Tower collapsed above bottom part. All crossarms damaged. • Location no 81 (A+0): Tower partially damaged and twisted condition above Middle crossarm. • Location no 80 (A+6): Tower partially damaged and twisted condition above Middle crossarm.

		From location no 80 to 88 conductor is fallen on ground and due to this 3 Nos of Tar road is blocked. Line is fallen on many 11KV HT/LT lines. In many suspension towers Polymer insulator are broken and damaged because of tower collapse. Twin moose spacers are damaged and broken between location no 79 to 91.
28.	Probable cause of failure:	Gusty Wind
29.	Details of previous failure of the line / tower :	LOC No. 90 twisted/partially damaged on 19-04-2025 due to conductor snap between LOC 90-91.
30.	Whether line will be restored on ERS or Spare tower will be used:	No
31.	Likely date of restoration:	2 Months
32.	Present Status:	Faulty
33.	Details of any Tests carried out after failure(attach test reports):	Detailed inspection along with Technical team from Planning section, KPTCL, Bangalore.
34.	Wind speed data of date & time of failure from nearby authorized observatory:	15.07 m/s (54.25 Kmph) (Recorded in the Solar Pooling Station of M/s G Anandswamy at Sunkalbidri village, which is very near to the incident site)
35.	Location of failed tower a. Location Coordinates: b. Nearest Airport: c. District and State:	a) 14.5821590, 75.5417900 b) Hubballi c) Haveri, Karnataka
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Enclosed
37.	Tower weight:	A Type: 8.85 MT B Type: 15.62 MT
38.	Tower spotting data:	Enclosed
39.	Tower schedule of affected section:	Enclosed
40.	Sag tension calculation considered for design of tower:	NA
41.	Design document of failed towers:	Not available
42.	Any other relevant information:	

6. Renew Power

6.1 400 kV Double circuit Twin HTLS Gadag (PS)-Kopal (PS) Transmission Line

Sl. No.	Details	Remarks
1.	Name of Transmission line with voltage level:	400 kV Double Circuit Twin HTLS Gadag(PS) – Koppal (PS) Transmission Line
2.	Date and time of occurrence/discovery of failure:	23rd May , 2026- 18:15:17 Hrs
3.	Length of line (km):	49.768 KM
4.	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	Double circuit strung on Double Circuit Tower
5.	Number of Towers and Type of Towers failed: [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	AP-11/5 Loc-65 DD+30 +3M RC Collapsed AP-11/6 Loc-66 DD+30 +3M RC Collapsed AP-11/7 Loc-67 DB+6 OPGW Peak damage due to fallen tension from 11/6
6.	Tower location No. with reference to nearest substation(indicate Name):	400/220 kV Gadag Substation 65,66,67
7.	Name and size of conductor:	HTLS Conductor ACSS/AW 478 SQMM
8.	No. of sub-conductors per bundle and bundle spacing:	Twin Bundle HTLS
9.	Number and size of Ground wire/OPGW (if provided):	1 Earthwire & 1 OPGW (24 Fiber)
10.	Type of insulators in use(Porcelain / Glass / Polymer):	Polymer
11.	Configuration of insulators (I / V / Y / tension):	Tension
12.	No. of insulators per string and No. of strings per phase:	2 (Two)
13.	Year of construction / commissioning:	8 th march 2026
14.	Executing Agency:	Jyoti Structures Limited
15.	Weather condition on the date of failure:	Heavy Wind & cyclonic whirling winds with thunderstorms.
16.	Terrain Category:	Plain

17 .	Reliability Level:	1
18 .	Wind Zone (1/2/3/4/5/6) and velocity of wind:	WZ-1 velocity 33m/sec
19 .	Details of earthing of tower (pipe type/ Counter poise):	Pipe type earthing
20 .	Line designed as per IS:802 (1977/1995/2015 any other code):	IS 802 (Part 1 / Sec 1) : 2015/TS
21 .	The agency who designed the line:	RS Infraprojects Private Limited
22 .	Any Special consideration in design:	Drag Coefficient as per IS 802 (1995) & WZ as per National Building Code
23 .	Details of last maintenance activity along with date:	30 th April 2026
24 .	Power flow in the line prior to failure:	95 MW in 400 kV Line -01 & 95 MW in 400 kV Line -02. Total 126 MW
25 .	Any missing member found before / after failure of towers:	No
26 .	Condition of foundation after failure:	Foundation are ok, however few stubs are bend & at some places chimney are cracked due to load of fallen structure.
27 .	Brief Description of failure: [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	Formation of wind tunnel or whirl nearby tower collapsed area where the wind speed was very high resulting into collapse of towers. The affected area, including nearby regions, has been experiencing continuous heavy winds and thunderstorms over the past 3–4 days, which have also impacted other utility infrastructure 220 Kv and 33 KVs Lines (bent/collapsed lines). Relevant photographs of these damages are also attached for reference.
28 .	Probable cause of failure:	Heavy Wind & cyclonic wind whirl
29 .	Details of previous failure of the line / tower :	Nil
30 .	Whether line will be restored on ERS or Spare tower will be used:	Spare Tower will be used

31 .	Likely date of restoration:	30 th july 2026
32 .	Present Status:	Approach Road clearance under progress, fallen structure dismantling U/P. Work is at hold for CEA/CPRI/PGCIL inspection.
33 .	Details of any Tests carried out after failure(attach test reports):	No
34 .	Wind speed data of date & time of failure from nearby authorized observatory:	
35 .	Location of failed tower a. Location Coordinates: b. Nearest Airport: c. District and State:	1 AP-11/5 Loc-65 DD+30 +3M RC 600988.2 1722038 2 AP-11/6 Loc-66 DD+30 +3M RC 601047.5 1721850 3 AP-11/7 Loc-67 DB+6 601185.5 1721411 Hubali Koppal, Karnataka
36 .	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Enclosed in tower test report
37 .	Tower weight:	DB+6 15.652 DD+30 38.213
38 .	Tower spotting data:	Copy Enclosed annexure-38
39 .	Tower schedule of affected section:	Copy Enclosed annexure-39
40 .	Sag tension calculation considered for design of tower:	
41 .	Design document of failed towers:	Copy Enclosed
42 .	Any other relevant information:	No

6.2 400 kV Double Circuit Twin HTLS Gadag (PS)- Kopal (PS) Transmission Line

Sl. No.	Details	Remarks
1.	Name of Transmission line with voltage level:	400 KV Double Circuit Twin HTLS Gadag(PS) – Koppal (PS) Transmission Line
2.	Date and time of occurrence/discovery of failure:	24th May , 2026- 21:30 Hrs
3.	Length of line (km):	49.768 km
4.	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)	Double circuit strung on Double Circuit Tower
5.	Number of Towers and Type of Towers failed: [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	1) 10C/2 Loc-52 DA+6 Collapsed 2) 10C/3 Loc-53 DA+6 Collapsed 3) 10C/4 Loc-54 DA+6 Collapsed 4) 10C/5 Loc-55 DA+6 Collapsed 5) 10C/6 Loc-56 DA+0 Collapsed 6) 10C/7 Loc-57 DA+3 Collapsed 7) 10C/8 Loc-58 DA+6 Collapsed 8) 10C/9 Loc-59 DA+0 Collapsed 9) AP-11 Loc-60 DB+3 Collapsed 10) 11/1 Loc-61 DA+3 Collapsed 11) 11/2 Loc-62 DA+6 Collapsed 12) 11/3 Loc-63 DA+3 Collapsed 13) AP-11/4 Loc-64 DB+9 Collapsed <i>due to Backload conductor Theft, resulting to commencement of collapse of towers of Preceding section due to cascading effect.</i>
6.	Tower location No. with reference to nearest substation(indicate Name):	400/220KV Gadag Substation 52,53,54,55,56,57,58,59,60,61,62,63,64
7.	Name and size of conductor:	HTLS Conductor ACSS/AW 478 SQMM
8.	No. of sub-conductors per bundle and bundle spacing:	Twin Bundle HTLS
9.	Number and size of Ground wire/OPGW (if provided):	1 Earthwire & 1 OPGW (24 Fiber)
10.	Type of insulators in use(Porcelain / Glass / Polymer):	Polymer
11.	Configuration of insulators (I / V / Y / tension):	I and tension
12.	No. of insulators per string and No. of strings per phase:	2 (Two)
13.	Year of construction / commissioning:	8 th march 2026
14.	Executing Agency:	Jyoti Structures Limited

15.	Weather condition on the date of failure:	Normal Day
16.	Terrain Category:	Plain
17.	Reliability Level:	1
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind:	WZ-1 velocity 33m/sec
19.	Details of earthing of tower (pipe type/ Counter poise):	Pipe Type Earthing
20.	Line designed as per IS:802 (1977/1995/2015 any other code):	IS 802 (Part 1 / Sec 1) : 2015/TS
21.	The agency who designed the line:	RS Infraprojects Private Limited
22.	Any Special consideration in design:	Drag Coefficient as per IS 802 (1995) & WZ as per National Building Code
23.	Details of last maintenance activity along with date:	30 th April 2026
24.	Power flow in the line prior to failure:	95 MW in 400 kV Line -01 & 95 MW in 400 kV Line -02. Total 126 MW
25.	Any missing member found before / after failure of towers:	No
26.	Condition of foundation after failure:	Foundation are ok, however few stubs are bend & at some places chimney are cracked due to load of fallen structure.
27.	Brief Description of failure: [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	On 23rd June, tower locations 11/5–11/6 collapsed, resulting in a shutdown of the transmission line. Later, it was discovered that miscreants took advantage of the shutdown condition and stole conductors that were providing backstay support to the towers. During the day, the line was under shutdown due to the initial collapse at tower locations 11/5–11/6. Till late evening, the Transmission line patrolling team conducted inspections and found all tower structures intact and stable. At approximately 21:30 Hrs, unidentified miscreants arrived at tower location 11/4 and cut the backstay (backload) conductors. The removal of these critical support conductors destabilized the tower structures. This led to a cascading failure, causing a total of 13 towers to collapse, extending from tower location

		11/4 to 10C/2. Local villagers reported seeing suspicious individuals working near the towers that night. The intentional cutting and theft of backstay conductors directly caused the structural instability. This unlawful act resulted in a domino (cascading) effect, leading to multiple tower failures. The incident was immediately reported to the local police authorities. Police conducted a site inspection and confirmed evidence of conductor theft, establishing it as the primary cause of the incident. Investigation is currently underway to identify and apprehend the perpetrators. The collapse of 13 towers from location 11/4 to 10C/2 was not due to natural or technical failure but was a direct result of criminal activity involving conductor theft, which compromised the structural integrity of the transmission line.
28.	Probable cause of failure:	Theft of Back stay conductor by unknown miscreants, resulting into imbalance load in the tower resulting into 13 tower collapsed of preceding section
29.	Details of previous failure of the line / tower :	yes- one (two tower collapsed loc 11/4, 11/5 on 23 rd May 2026)
30.	Whether line will be restored on ERS or Spare tower will be used:	Spare tower will be used
31.	Likely date of restoration:	30 th july 2026
32.	Present Status:	Approach Road clearance under progress, fallen structure dismantling U/P. Work is at hold for CEA/CPRI/PGCIL inspection
33.	Details of any Tests carried out after failure(attach test reports):	No
34.	Wind speed data of date & time of failure from nearby authorized observatory:	
35.	Location of failed tower a. Location Coordinates: b. Nearest Airport: c. District and State:	1) 10C/2 Loc-52: DA+6 599060.3; 1727276 2) 10C/3 Loc-53: DA+6 599208; 1726912 3) 10C/4 Loc-54: DA+6 599367.8; 1726518 4)10C/5 Loc-55: DA+6 599528.1; 1726123 5) 10C/6 Loc-56: DA+0 599688.8; 1725726 6)10C/7 Loc-57: DA+3 599842.4; 1725347 7) 10C/8 Loc-58: DA+6 600003.9; 1724949

		8) 10C/9 Loc-59: DA+0 600149.4; 1724590 9) AP-11 Loc-60: DB+3 600308.3; 1724198 10) 11/1 Loc-61: DA+3 600437.4; 1723788 11) 11/2 Loc-62: DA+6 600567.3; 1723375 12) 11/3 Loc-63: DA+3 600696.4; 1722965 13) AP-11/4 Loc-64: DB+9 600826.7; 1722551 Hubali Koppal, Karnataka
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Enclosed in tower test report
37.	Tower weight:	Type Total DA+ 0 8.43 DA+3 9.25 DA+6 10.48 DB+3 13.615 DB+9 17.586
38.	Tower spotting data:	Copy Enclosed as Annexure 38
39.	Tower schedule of affected section:	Copy Enclosed as Annexure 39
40.	Sag tension calculation considered for design of tower:	
41.	Design document of failed towers:	Copy Enclosed
42.	Any other relevant information:	No

7. MAHATRANSCO

7.1 220 kV Akola-Balapur DCDS Line

Sl. No.	Details	Remarks
1	Name of Transmission line with voltage level:	220 kV Akola-Balapur DCDS Lines
2	Date and time of occurrence/discovery of failure	Dt. 24.05.2026 at 15.40 Hrs
3	Length of line (km):	220kV Akola-Balapur DCDC Lines – 27 KM
4	Type of configuration:	
	[(S/C, D/C, S/C sirving on D/C towers, narrow base etc.)	DCDC tower
5	Number of Towers and Type of Towers failed: (suspension/ tension/dead end/special tower/river crossing lower/ Powerline crossing/Railway Crossingete, with/without extension (indicatethe type & length of extension))	01 nos of Transmission Towers (Suspension Tower 1Nos. of A+3 DCDC tower)
6	Tower location No. with reference to nearest substation(indicate Name):	Tower Location Nos. 52 nearest to 220kV Balapur Substation
7	Name and size of conductor:	0.4 Zebra
8	No. of sub-conductors per bundle and bundle spacing:	NA
9	Number and size of Ground wire/OPGW (if provided):	Single 7/3.15 earth wire
10	Type of insulators in use(Porcelain/Glass/Polymer)	Porcelain
11	Configuration of insulators (1/V/Y/tension)	1
12	No. of insulators per string and No. of strings per phase	No. of insulators per string=14 and single string per phase

13	Year of construction/commissioning:	31.08.2012
14	Executing Agency:	M/s K. C. Power Infra Pvt. Ltd, Navi Mumbai, MH
15	Weather condition on the date of failure:	Heavy storm, heavy raining and lightning
16	Terrain Category:	Terrain Category:1 (Flat terrain)
17	Reliability Level	
18	Wind Zone (1/2/3/4/5/6) and velocity of wind	Wind Zone -1 and velocity of wind 39m/s
19	Details of earthing of tower (pipe type/Counter poise);	Tower Loc no 52 -Pipe type earthing
20	Line designed as per IS:802 (1977/1995/any other code):	IS:802
21	The agency who designed the line:	M/s. M N Nilawar , EC&C
22	Any Special consideration in design	NA
23	Details of last maintenance activity along with date	Thermoscanning- 22.01.2026; Ground patrolling-29.10.2025
24	Power flow in the line prior to failure:	Load before tripping- 19 MW 51 Amp exported from 220kV Akola substation.
25	Any missing member found before/after failure of towers	No
26	Condition of foundation after failure:	Foundations are in good conditions after failure.
27	Brief Description of failure: along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	Very heavy storm/cyclone ,lighting & rain observed on dt. 24/05/2026 at 15=40 Hrs near Gaigaon Tal. Balapur, Dist. Akola.
28	Probable cause of failure:	Very heavy storm/cyclone ,lighting & rain
29	Details of previous failure of the line/tower:	On dtd 22.07.2021, loc no. 15 of 220kV Akola Balapur DCDC line

		found collapsed in river flood near Kanadi Village , Akola
30	Whetherline will be restored on ERS or Spare tower will be used:	Spare tower is used
31	Likely date of restoration:	29.05.2026
32	Present Status:	Line supply restored on dt.29.05.2026 at 19.26Hrs.
33	Details of any Tests carriedout after failure:	NIL
34	Wind speed data of date & time of failure from nearby 100authorized observatory:	Not available
35	Location of failed tower	Near Gaigaon Tal. Balapur, Dist. Akola
	a) Location Coordinates	20°41'57.4"N 76°54'27.7"E
	b)Nearest Airport:	Amravati
	C) District and State:	Akola, Maharashtra
36	Single Line diagram/clearance diagram of failed tower(s) with all dimensions(Horizontal & vertical dimensions including base width of tower	Attached
37	Tower weight:	Approx. 4.6MT
38	Tower spotting data:	Not available
39	Tower scheduled of affected section	Attached
40	Sag tension calculation considered for design of tower	Ground clearance is 12.1meter
41	Design document of failed towers:	Not available
42	Any other relevant information	_____

8. MP TRANSCO

8.1 220 kV Satna-Kotar DCDS Line

Sl. No.	Details	Remarks
1.	Name of Transmission line with voltage level:	220 kV Satna-Kotar DCDS line
2.	Date and time of occurrence/discovery of failure:	11.06.2026 at 20:40 Hrs
3.	Length of line (km):	45.53 km
4.	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	DCDS
5.	Number of Towers and Type of Towers failed: [Suspension/tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	01. 01 no. suspension tower without extension collapsed at loc. No. 130 02. 01 no. tension tower with 10M extension collapsed at loc. No. 131
6.	Tower location No. with reference to nearest substation(indicate Name):	220 kV S/s Satna
7.	Name and size of conductor:	ACSR Zebra conductor size 28.62 mm Dia.
8.	No. of sub-conductors per bundle and bundle spacing:	Single Conductor
9.	Number and size of Ground wire/OPGW (if provided):	1 No. OPGW 24 fiber, size 12.5mm Dia.
10.	Type of insulators in use(Porcelain / Glass / Polymer):	Porcelain
11.	Configuration of insulators (I / V / Y / tension):	I type
12.	No. of insulators per string and No. of strings per phase:	13 no. disc insulator per string and 01 no. string per phase in suspension tower and 14 no. disc insulator per string and 02 no. strings per phase in tension tower
13.	Year of construction / commissioning:	1991
14.	Executing Agency:	MPPTCL
15.	Weather condition on the date of failure:	Heavy thunder storm & cyclone
16.	Terrain Category:	2
17.	Reliability Level:	1
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind:	Wind zone – 3
19.	Details of earthing of tower (pipe type/ Counter poise):	Rod type Earthing (04 leg)

20.	Line designed as per IS:802 (1977/1995/2015 any other code):	1977
21.	The agency who designed the line:	MPSEB
22.	Any Special consideration in design:	No
23.	Details of last maintenance activity along with date:	Ground patrolling done on date 28.05.2026
24.	Power flow in the line prior to failure:	Both circuits of line was in operation.
25.	Any missing member found before / after failure of towers:	No missing member found
26.	Condition of foundation after failure:	Foundation is intact
27.	Brief Description of failure: [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	Enclosed
28.	Probable cause of failure:	High Speed Wind Pressure in the Area
29.	Details of previous failure of the line / tower :	Tower of this line collapsed in the year 2021
30.	Whether line will be restored on ERS or Spare tower will be used:	Spare tower will be used
31.	Likely date of restoration:	26.06.2026
32.	Present Status:	Rectification is under progress
33.	Details of any Tests carried out after failure(attach test reports):	Mechanical & Chemical test of tower part will be carried out
34.	Wind speed data of date & time of failure from nearby authorized observatory:	A request to provide Wind Speed Data is being made to IMD
35.	Location of failed tower a. Location Coordinates: b. Nearest Airport: c. District and State:	01 no suspension tower collapse loc. No.130(NB0) & 01 no tension tower collapse at loc. No. 131 (B60+10M List enclosed Satna Satna (M.P.)
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Enclosed
37.	Tower weight:	B60+10M (14.32MT) & (NB0)-4.80 MT
38.	Tower spotting data:	
39.	Tower schedule of affected section:	Enclosed
40.	Sag tension calculation considered for design of tower:	
41.	Design document of failed towers:	
42.	Any other relevant information:	No

9. Vena Energy Pvt. Ltd.

9.1 Vena energy Vidyuth Private limited 220 kV

Sl. No.	Details	Remarks
1.	Name of Transmission line with voltage level:	Vena Energy Vidyuth Private limited / 220 kV
2.	Date and time of occurrence/discovery of failure:	17.05.2026 & 16:14 / Tower uplifted – During the event, heavy rain, gusty winds, and lightning were observed at the site.
3.	Length of line (km):	58 KM
4.	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	D/C (Double Circuit)
5.	Number of Towers and Type of Towers failed: [Suspension/tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	Suspension Towers (6 Nos: CP 31 to SP 36), Type: DC+03, DA+03. Peak Damage: Collapsed. Affected Section: AP4, 4/1, 4/2, 4/3, 4/4, 4/5 & 400KV Gadag Transmission Limited
6.	Tower location No. with reference to nearest substation(indicate Name):	Kushtagi, Tenguti village
7.	Name and size of conductor:	“AL 59 MOOSE” & 597 Sq.mm
8.	No. of sub-conductors per bundle and bundle spacing:	Single conductor
9.	Number and size of Ground wire/OPGW (if provided):	13 mm
10.	Type of insulators in use(Porcelain / Glass / Polymer):	Polymer
11.	Configuration of insulators (I / V / Y / tension):	Tension
12.	No. of insulators per string and No. of strings per phase:	Per phase 1 insulator & 1 string
13.	Year of construction / commissioning:	2024 / 2024
14.	Executing Agency:	Kshema Power
15.	Weather condition on the date of failure:	Gusty wind with heavy rain
16.	Terrain Category:	Plain terrain
17.	Reliability Level:	High reliability in temperature trends
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind:	Wind zone 1

19.	Details of earthing of tower (pipe type/ Counter poise):	Counter poise
20.	Line designed as per IS:802 (1977/1995/2015 any other code):	IS:802
21.	The agency who designed the line:	Kshema Power
22.	Any Special consideration in design:	No
23.	Details of last maintenance activity along with date:	18.06.2025
24.	Power flow in the line prior to failure:	37 MW
25.	Any missing member found before / after failure of towers:	No
26.	Condition of foundation after failure:	Few foundations noted to be cracked due to load of fallen structures.
27.	Brief Description of failure: [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	Attached Photographs, newspaper cutting
28.	Probable cause of failure:	Gusty wind
29.	Details of previous failure of the line / tower :	Nil
30.	Whether line will be restored on ERS or Spare tower will be used:	Checking for the ERS option
31.	Likely date of restoration:	15-Jun-2026
32.	Present Status:	Shutdown / non operation
33.	Details of any Tests carried out after failure(attach test reports):	Yet to start
34.	Wind speed data of date & time of failure from nearby authorized observatory:	Will be shared shortly
35.	Location of failed tower a. Location Coordinates: b. Nearest Airport: c. District and State:	Kushtagi, Tenguti village Nearest Airport: Hubballi Airport (HBX) District and State: Koppal and Karnataka
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Refer to attachments for all dimensions (horizontal & vertical dimensions including base width)
37.	Tower weight:	15 MT
38.	Tower spotting data:	Attached
39.	Tower schedule of affected section:	Attached
40.	Sag tension calculation considered for design of tower:	Yes
41.	Design document of failed towers:	Available in attachments
42.	Any other relevant information:	NA

10.NTPC

10.1 400 kV D/C Jhabua Jabalpur Line

Sl. No.	Details	Remarks
1.	Name of Transmission line with voltage level:	400 kV D/C Jhabua Jabalpur Line
2.	Date and time of occurrence/discovery of failure:	01-05-2026 at 17:12Hrs
3.	Length of line (km):	65 km
4.	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	
5.	Number of Towers and Type of Towers failed: [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	DA+06
6.	Tower location No. with reference to nearest substation(indicate Name):	Tower 183 near to PGCIL Bhedaghat.
7.	Name and size of conductor:	AL-59 (Equivalent to Moose)
8.	No. of sub-conductors per bundle and bundle spacing:	Twin
9.	Number and size of Ground wire/OPGW (if provided):	Both Peak earth wire
10.	Type of insulators in use(Porcelain / Glass / Polymer):	Porcelain
11.	Configuration of insulators (I / V / Y / tension):	I (Suspension)
12.	No. of insulators per string and No. of strings per phase:	23 (1 string per phase)
13.	Year of construction / commissioning:	2015
14.	Executing Agency:	L&T

15.	Weather condition on the date of failure:	High speed storm
16.	Terrain Category:	Undulated terrain with black cotton soil
17.	Reliability Level:	99.9%
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind:	Tower is designed for Wind zone2
19.	Details of earthing of tower (pipe type/ Counter poise):	Pipe type
20.	Line designed as per IS:802 (1977/1995/2015 any other code):	IS:802 (1995 (DBR attached)
21.	The agency who designed the line:	L&T
22.	Any Special consideration in design:	
23.	Details of last maintenance activity along with date:	In year 2024 (During AOH).
24.	Power flow in the line prior to failure:	509 MW
25.	Any missing member found before / after failure of towers:	No missing member found.
26.	Condition of foundation after failure:	Foundation intact before failure, foundation found crack after tower failure.
27.	Brief Description of failure: [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	
28.	Probable cause of failure:	Cyclone effect on tower
29.	Details of previous failure of the line / tower :	No incident Happen
30.	Whether line will be restored on ERS or Spare tower will be used:	ERS in progress
31.	Likely date of restoration:	On ERS within 12-15 days, further tower foundation/ Erection and stringing will take place 106pprox.. 2 months depending on availability of spare tower.
32.	Present Status:	Line charged with ckt-2
33.	Details of any Tests carried out after failure(attach test reports):	NA
34.	Wind speed data of date & time of failure from nearby authorized observatory:	The wind data record from IMD attached.

35.	Location of failed tower a. Location Coordinates: b. Nearest Airport: c. District and State:	a. N-79°48'56.1" E-23° 8'36.2" b. Jabalpur c. Jabalpur MP
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Tower GA Attached
37.	Tower weight:	12.101 MT
38.	Tower spotting data:	Tower Schedule attached
39.	Tower schedule of affected section:	Tower Schedule attached
40.	Sag tension calculation considered for design of tower:	
41.	Design document of failed towers:	Attached
42.	Any other relevant information:	

11.ADANI

11.1 765 kV S/C AKOLA (2) – KORADI (3) LINE – 1

Sl. No.	Details	Remarks
1.	Name of Transmission line with voltage level:	765 KV S/C AKOLA (2) – KORADI (3) LINE – 1
2.	Date and time of occurrence/discovery of failure:	28.05.2026, 17:04 hrs. 29.05.2026, 12:15 hrs.
3.	Length of line (km):	223.37 km
4.	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	S/C Delta type
5.	Number of Towers and Type of Towers failed: [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	One Suspension Tower (1 no.) collapsed A+0 Single circuit delta configuration
6.	Tower location No. with reference to nearest substation(indicate Name):	Tower No. 399, 75 kms from Akola-2 Substation
7.	Name and size of conductor:	ACSR BERSIMIS CONDUCTOR, 35.05 mm Overall diameter 42/4.57 mm Al + 7/2.54 mm steel
8.	No. of sub-conductors per bundle and bundle spacing:	4 nos. of sub conductor/phase (Quad Bundle), Bundle spacing – 457 ± 5 mm
9.	Number and size of Ground wire/OPGW (if provided):	A. 1 no. of 7/3.66 G.S EARTHWIRE B. 1 no, of 8-Fiber OPGW.
10.	Type of insulators in use(Porcelain / Glass / Polymer):	120kN Suspension Porcelain Insulator in I Strings, 210kN Suspension Porcelain insulator in V String.
11.	Configuration of insulators (I / V / Y / tension):	Double I-Type Configuration of Insulator (Suspension) & V-Type Configuration of Insulator (I-V-I Type Configuration)
12.	No. of insulators per string and No. of strings per phase:	Double I : 80 nos. of disc insulators per string & 2 Strings per phase Single V : 70 nos. disc of insulators per string

		& 1 Strings per phase
13.	Year of construction / commissioning:	2014
14.	Executing Agency:	KALPATARU POWER TRANSMISSION LIMITED (M/s KPTL)
15.	Weather condition on the date of failure:	Sporadic heavy whirl wind followed by localized cyclonic storm with rainfall
16.	Terrain Category:	Category-2
17.	Reliability Level:	Reliability Level – 2
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind:	Wind Zone-2, Basic wind speed – 39 m/s
19.	Details of earthing of tower (pipe type/ Counter poise):	Pipe type Earthing
20.	Line designed as per IS:802 (1977/1995/2015 any other code):	IS 802:1995
21.	The agency who designed the line:	Powergrid Corporation of India Limited (PGCIL)
22.	Any Special consideration in design:	No
23.	Details of last maintenance activity along with date:	10.02.2026
24.	Power flow in the line prior to failure:	769 MW
25.	Any missing member found before / after failure of towers:	No
26.	Condition of foundation after failure:	The foundation is in good condition. No damage found.
27.	Brief Description of failure: [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	Enclosed as Annexure B1
28.	Probable cause of failure:	Due to heavy gusty wind followed by localized whirl wind.
29.	Details of previous failure of the line / tower :	No previous failure since commissioning
30.	Whether line will be restored on ERS or Spare tower will be used:	Spare tower materials shall be used for permanent restoration
31.	Likely date of restoration:	05.06.2026
32.	Present Status:	Permanent restoration work done on 05-06-2026.
33.	Details of any Tests carried out after failure(attach test reports):	It is observed that the tower collapsed due to

		nature's fury. No technical deficiencies were observed in the collapsed tower. Sample collection of damaged towers is in progress and shall be sent to NABL certified laboratory.
34.	Wind speed data of date & time of failure from nearby authorized observatory:	We have requested Indian Meteorological Department (IMD) to provide relevant weather data at incident location from their nearest observatory. However, as per local sources and newspaper details weather condition were heavy thunderstorm along with sporadic whirl wind condition at that time.
35.	Location of failed tower a. Location Coordinates: b. Nearest Airport: c. District and State:	a. 21° 4'16.52"N, 77°37'52.11"E b. Amravati (Maharashtra) Airport 40 km, from tower, Akola (Maharashtra) Airport 117 km from Tower & Nagpur Airport, 185 Km from Tower c. District: Amravati, State: Maharashtra
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Enclosed as annexure H1
37.	Tower weight:	19.2 MT MS-11.91 MT, HT- 6.57 MT, B&N- 0.72 MT
38.	Tower spotting data:	Enclosed as Annexure D1
39.	Tower schedule of affected section:	Enclosed as Annexure I1
40.	Sag tension calculation considered for design of tower:	Enclosed as Annexure D1
41.	Design document of failed towers:	Not available as tower drawings were purchased from PGCIL.
42.	Any other relevant information:	-

11.2 765 kV S/C AKOLA (2) – KORADI (3) LINE – 1

Sl. No.	Details	Remarks
1.	Name of Transmission line with voltage level:	765 KV S/C AKOLA (2) – KORADI (3) LINE – 1
2.	Date and time of occurrence/discovery of failure:	26.06.2026, 16:38 hrs. 26.06.2026, 20:15 hrs.
3.	Length of line (km):	223.37 km
4.	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	S/C Delta type
5.	Number of Towers and Type of Towers failed: [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	One Suspension Tower (1 no.) collapsed A+0 Single circuit delta configuration
6.	Tower location No. with reference to nearest substation(indicate Name):	Tower No. 396, 76 kms from Akola-2 Substation
7.	Name and size of conductor:	ACSR BERSIMIS CONDUCTOR, 35.05 mm Overall diameter 42/4.57 mm Al + 7/2.54 mm steel
8.	No. of sub-conductors per bundle and bundle spacing:	4 nos. of sub conductor/phase (Quad Bundle), Bundle spacing – 457 ± 5 mm
9.	Number and size of Ground wire/OPGW (if provided):	A. 1 no. of 7/3.66 G.S EARTHWIRE B. 1 no, of 8-Fiber OPGW.
10.	Type of insulators in use(Porcelain / Glass / Polymer):	120kN Suspension Porcelain Insulator in I Strings, 210kN Suspension Porcelain insulator in V String.
11.	Configuration of insulators (I / V / Y / tension):	Double I-Type Configuration of Insulator (Suspension) & V -Type Configuration of Insulator (I-V-I Type Configuration)
12.	No. of insulators per string and No. of strings per phase:	Double I : 80 nos. of disc insulators per string & 2 Strings per phase Single V : 70 nos. disc of insulators per string & 1 Strings per phase
13.	Year of construction / commissioning:	2014
14.	Executing Agency:	KALPATARU POWER TRANSMISSION

		LIMITED (M/s KPTL)
15.	Weather condition on the date of failure:	Sporadic heavy whirl wind followed by localized cyclonic storm with rainfall
16.	Terrain Category:	Category-2
17.	Reliability Level:	Reliability Level - 2
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind:	Wind Zone-2, Basic wind speed – 39 m/s
19.	Details of earthing of tower (pipe type/ Counter poise):	Pipe type Earthing
20.	Line designed as per IS:802 (1977/1995/2015 any other code):	IS 802:1995
21.	The agency who designed the line:	Powergrid Corporation of India Limited (PGCIL)
22.	Any Special consideration in design:	No
23.	Details of last maintenance activity along with date:	10.02.2026
24.	Power flow in the line prior to failure:	769 MW
25.	Any missing member found before / after failure of towers:	No
26.	Condition of foundation after failure:	The foundation is in good condition. No damage found.
27.	Brief Description of failure: [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	Enclosed as Annexure B2
28.	Probable cause of failure:	Due to heavy gusty wind followed by localized whirl wind.
29.	Details of previous failure of the line / tower :	Tn 399 (A+0), dt. 28.05.2026
30.	Whether line will be restored on ERS or Spare tower will be used:	Spare tower materials shall be used for permanent restoration
31.	Likely date of restoration:	16.07.2026
32.	Present Status:	Permanent restoration work done on 16.07. 2026.
33.	Details of any Tests carried out after failure(attach test reports):	It is observed that the tower collapsed due to nature's fury. No technical deficiencies were observed in the collapsed tower. Sample

		collection of damaged towers is in progress and shall be sent to NABL certified laboratory.
34.	Wind speed data of date & time of failure from nearby authorized observatory:	We have requested Indian Meteorological Department (IMD) to provide relevant weather data at incident location from their nearest observatory. However as per local sources and newspaper details weather condition were heavy thunderstorm along with sporadic whirl wind condition at that time.
35.	Location of failed tower a. Location Coordinates: b. Nearest Airport: c. District and State:	a. 21° 4'44.54"N, 77°38'2.78"E b. Amravati (Maharashtra) Airport 40 km, from tower, Akola (Maharashtra) Airport 117 km from Tower & Nagpur Airport, 185 Km from Tower c. District: Amravati, State: Maharashtra
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Enclosed as annexure H2
37.	Tower weight:	19.2 MT MS-11.91 MT, HT- 6.57 MT, B&N- 0.72 MT
38.	Tower spotting data:	Enclosed as Annexure D2
39.	Tower schedule of affected section:	Enclosed as Annexure I2
40.	Sag tension calculation considered for design of tower:	Enclosed as Annexure D2
41.	Design document of failed towers:	Not available as tower drawings were purchased from PGCIL.
42.	Any other relevant information:	-

12.UPPTCL

12.1 220 kV Bareilly(400)-CB Ganj Ckt-I

S.N.	Details of Transmission line	Remark
1	Name of Transmission line with voltage level:	220 kV Bareilly(400)-CB Ganj Ckt-I
2	Date and time of occurrence/discovery of failure	12.05.2026 AT 10:47 hrs
3	Length of line (km):	16.5 Km
4	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	S/C
5	Number of Towers and Type of Towers failed: [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	01 No,Tension Tower(DB+5)
6	Tower location No. with reference to nearest substation (indicate Name):	Tower No 22 (B+5) (220 KV S/S C.B. Ganj ,Bareilly)
7	Name and size of conductor	ACSR Zebra Conductor,3.18 mm dia
8	No. of sub-conductors per bundle and bundle spacing:	01 Sub conductor
9	Number and size of Ground wire/OPGW (if provided)	01 No,
10	Type of insulators in use(Porcelain / Glass / Polymer	Porcelain
11	Configuration of insulators (I / V / Y / tension):	Tension
12	No. of insulators per string and No. of strings per phase	16 Insulators Per String,01 Strings Per Phase
13	Year of construction / commissioning	1995
14	Executing Agency:	-

15	Weather condition on the date of failure	Violent Strom with heavy rain
16	Terrain Category	Plain Terrain
17	Reliability Level:	High
18	Wind Zone (1/2/3/4/5/6) and velocity of wind:	Wind Zone 4 & 169 Kmph
19	Details of earthing of tower (pipe type/ Counter poise):	Pipe Type Earthing
20	Line designed as per IS:802 (1977/1995/2015 any other code):	1977
21	The agency who designed the line:	SAE
22	Any Special consideration in design:	NO
23	Details of last maintenance activity along with date	Tree Cutting and Missing tower Parts replacement from 15 April 2026 to 20 April 2026
24	Power flow in the line prior to failure:	60 MW Power Flow from 400 KV Bareilly to 220 KV S/S C.B. Ganj
25	Any missing member found before / after failure of towers	No Missing Tower Parts
26	Condition of foundation after failure:	INTACT
27	Brief Description of failure: [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	Attached
28	Probable cause of failure:	Heavy localised cyclone
29	Details of previous failure of the line / tower :	No Any
30	Whether line will be restored on ERS or Spare tower will be used:	KPTL (C+5) Tower
31	Likely date of restoration:	31-05-2026
32	Present Status:	New Tower foundation work is in process

33	Details of any Tests carried out after failure(attach test reports):	Chemical & Mechanical Strength tests of Tower parts has been sent for testing
34	Wind speed data of date & time of failure from nearby authorized observatory:	100 Kmph
35	Location of failed tower a. Location Coordinates: b. Nearest Airport: c. District and State:	A. 28.504722N,79.420556E b. Bareilly Airport c.Bareilly(U.P.)
36	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Attached
37	Tower weight:	—
38	Tower spotting data:	—
39	Tower schedule of affected section	Tower Schedule 21(B+5),22(B+5),23(C+0)
40	Sag tension calculation considered for design of tower	—
41	Design document of failed towers:	—
42	Any other relevant information:	—

12.2 220 KV Roza – Dohna Line

S.N.	Details of Transmission line	Remark
1	Name of Transmission line with voltage level:	220 kV Roza – Dohna Line
2	Date and time of occurrence/discovery of failure	25.05.2026 AT 21:52 hrs
3	Length of line (km):	108.07 Km
4	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	D/C
5	Number of Towers and Type of Towers failed: [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	01 No, Tension Tower(C+0) & 03 No. Suspension Tower (A+0), (A+5), (A+5)
6	Tower location No. with reference to nearest substation(indicate Name):	Tower No 314(A+0), 315(A+5), 316(A+5), 317(C+0) (220 KV Roza Thermal Power Plant)
7	Name and size of conductor	ACSR Zebra Conductor, 3.18 mm dia
8	No. of sub-conductors per bundle and bundle spacing:	02 Sub conductor
9	Number and size of Ground wire/OPGW (if provided)	01 No,
10	Type of insulators in use(Porcelain / Glass / Polymer	Porcelain & Polymer
11	Configuration of insulators (I / V / Y / tension):	I and Tension
12	No. of insulators per string and No. of strings per phase	15 Insulators Per String, 01 Strings Per Phase
13	Year of construction / commissioning	2016
14	Executing Agency:	M/s SEW
15	Weather condition on the date of failure	Violent cyclone with heavy rain

16	Terrain Category	Plain Terrain
17	Reliability Level:	High
18	Wind Zone (1/2/3/4/5/6) and velocity of wind:	Wind Zone 4 & 169 Kmph
19	Details of earthing of tower (pipe type/ Counter poise):	Pipe Type Earthing
20	Line designed as per IS:802 (1977/1995/2015 any other code):	2015
21	The agency who designed the line:	KPTL
22	Any Special consideration in design:	NO
23	Details of last maintenance activity along with date	Petrolling, Tree Cutting/Loping 119ocalize and Missing tower Parts replacement from 15 April 2026 to 23 May 2026
24	Power flow in the line prior to failure:	177 MW Power Flow from Roza Thermal Plant to 220 KV S/S Dohna
25	Any missing member found before / after failure of towers	No Missing Tower Parts
26	Condition of foundation after failure:	INTACT
27	Brief Description of failure: [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	Attached
28	Probable cause of failure:	Heavy 119ocalized cyclone
29	Details of previous failure of the line / tower :	-
30	Whether line will be restored on ERS or Spare tower will be used:	KPTL (C+0), (A+5), (A+5) & (A+0) Tower
31	Likely date of restoration:	10.06.2026
32	Present Status:	Butt joint work at same foundation in process
33	Details of any Tests carried out after failure(attach test reports):	Chemical & Mechanical Strength tests of Tower parts will be send for testing

34	Wind speed data of date & time of failure from nearby authorized observatory:	76 Kmph
35	Location of failed tower a. Location Coordinates: b. Nearest Airport: c. District and State:	A. 27.806405N , 79.901628E b. Bareilly Airport c. Shahjhanpur (U.P.)
36	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	Attached
37	Tower weight:	A+0 – 4.17568 MT A+5 – 5.27908 MT C+0 – 9.47724 MT
38	Tower spotting data:	-
39	Tower schedule of affected section	Tower Schedule 314(A+0), 315(A+5), 316(A+5), 317(C+0)
40	Sag tension calculation considered for design of tower	-
41	Design document of failed towers:	-
42	Any other relevant information:	-

13.RVPN

13.1 220 kV S/C Bap-Barsingsar line

S.N.	Details	Remarks
1.	Name of Transmission line with voltage level:	220 kV S/C Bap-Barsingsar line
2.	Date and time of occurrence/discovery of failure:	04.05.2026 at 16:35 Hrs.
3.	Length of line (km):	141.453 KM
4.	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)]	S/C (Single Circuit)
5.	Number of Towers and Type of Towers failed: [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	01 Nos., Double Suspension(TTA+O)
6.	Tower location No. with reference to nearest substation(indicate Name):	Location No.278
7.	Name and size of conductor:	HTLS Conductor (ACCC Hamburg)
8.	No. of sub-conductors per bundle and bundle spacing:	Anealed Aluminium- TW 14/TW 8, CFC core 8.76 mm
9.	Number and size of Ground wire/OPGW (if provided):	Ground wire(7/4.00 mm)
10.	Type of insulators in use(Porcelain / Glass / Polymer):	Porcelain
11.	Configuration of insulators (I / V / Y / tension):	1
12.	No. of insulators per string and No. of strings per phase:	13 of 2
13.	Year of construction / commissioning:	20.08.2013
14.	Executing Agency:	RVPN
15.	Weather condition on the date of failure:	Heavy wind Storm & cyclone
16.	Terrain Category:	Sandy Plain
17.	Reliability Level:	
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind:	5 and 50 m/s
19.	Details of earthing of tower (pipe type/ Counter poise):	Pipe Type Earthing
20.	Line designed as per IS:802 (1977/1995/2015 any other code):	1995
21.	The agency who designed the line:	RVPN
22.	Any Special consideration in design:	New Design 2015
23.	Details of last maintenance activity along with date:	Line Patrolling done on dt. 05.06.2025 to 04.12.2025
24.	Power flow in the line prior to failure:	Approximate 100MW

25.	Any missing member found before / after failure of towers:	No
26.	Condition of foundation after failure:	Found Damaged
27.	Brief Description of failure: [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	Heavy wind Storm & cyclone
28.	Probable cause of failure:	Heavy wind Storm & cyclone
29.	Details of previous failure of the line / tower :	-
30.	Whether line will be restored on ERS or Spare tower will be used:	No
31.	Likely date of restoration:	19.05.2026
32.	Present Status:	
33.	Details of any Tests carried out after failure(attach test reports):	
34.	Wind speed data of date & time of failure from nearby authorized observatory:	
35.	Location of failed tower a. Location Coordinates: b. Nearest Airport: c. District and State:	A Lat.27.331306° Long 72.573453° b. Phalodi c. Phalodi and Rajasthan
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	
37.	Tower weight:	2.900 MT
38.	Tower spotting data:	
39.	Tower schedule of affected section:	2.922 KM
40.	Sag tension calculation considered for design of tower:	
41.	Design document of failed towers:	
42.	Any other relevant information:	

Annexure-III: Proforma for reporting of failure of EHV Transmission Line Towers

Sl. No.	Details	Remarks
1.	Name of Transmission line with voltage level:	
2.	Date and time of occurrence/discovery of failure:	
3.	Length of line (km):	
4.	Type of configuration: [(S/C, D/C, M/C, S/C strung on D/C towers, narrow base etc.)	
5.	Number of Towers and Type of Towers failed: [Suspension/ tension/dead end/special tower /river crossing tower/ Power line crossing/Railway Crossing etc., with / without extension (indicate the type & length of extension)]	
6.	Tower location No. with reference to nearest substation (indicate Name):	
7.	Name and size of conductor:	
8.	No. of sub-conductors per bundle and bundle spacing:	
9.	Number and size of Ground wire/OPGW (if provided):	
10.	Type of insulators in use(Porcelain / Glass / Polymer):	
11.	Configuration of insulators (I / V / Y / tension):	
12.	No. of insulators per string and No. of strings per phase:	
13.	Year of construction / commissioning:	
14.	Executing Agency:	
15.	Weather condition on the date of failure:	
16.	Terrain Category:	
17.	Reliability Level:	
18.	Wind Zone (1/2/3/4/5/6) and velocity of wind:	
19.	Details of earthing of tower (pipe type/ Counter poise):	
20.	Line designed as per IS:802 (1977/1995/2015 any other code):	
21.	The agency who designed the line:	
22.	Any Special consideration in design:	
23.	Details of last maintenance activity along with date:	
24.	Power flow in the line prior to failure:	
25.	Any missing member found before / after failure of towers:	
26.	Condition of foundation after failure:	

27.	Brief Description of failure: [Along with photographs (if available), other related information like tower schedule, newspaper clipping for cyclone / wind storm etc.]	
28.	Probable cause of failure:	
29.	Details of previous failure of the line / tower :	
30.	Whether line will be restored on ERS or Spare tower will be used:	
31.	Likely date of restoration:	
32.	Present Status:	
33.	Details of any Tests carried out after failure (attach test reports):	
34.	Wind speed data of date & time of failure from nearby authorized observatory:	
35.	Location of failed tower a. Location Coordinates: b. Nearest Airport: c. District and State:	
36.	Single line diagram/clearance diagram of failed tower(s) with all dimensions (horizontal & vertical dimensions including base width of tower)	
37.	Tower weight:	
38.	Tower spotting data:	
39.	Tower schedule of affected section:	
40.	Sag tension calculation considered for design of tower:	
41.	Design document of failed towers:	
42.	Any other relevant information:	

Annexure-IV: Composition of Standing Committee of Experts

Central Electricity Authority
Office of the Secretary

Date 24/9/99

No.5-41/98/Secy/CEA / 809

(Technical Committee No. 16)

Office Memorandum

Subject: Constitution of Standing Committee of Experts to investigate the Failure of Towers.

Because of transmission line tower failures taking place in the country, resulting in disruption of power on large scale for long periods, it has been decided as per chapter-II, para 3 (viii) of the Electricity (Supply) Act, No 54 of 1948 to constitute a Standing Committee, consisting of experts in the field of EHV Transmission lines from CEA, Power Grid, CPRI, IIT Delhi, & SEB (of the State, where tower failure has taken place). In the event of any failure of towers for transmission lines of 220kV and higher voltages of power utilities, members of the committee should immediately visit the site to have first hand information and ascertain the causes of failure and give recommendations to prevent such recurrences in future.

2. The scope and terms of reference of the committee shall be as follows:

(i) To investigate the causes of failure of towers.

(ii) Recommendations to avert recurrences, of such failures in future.

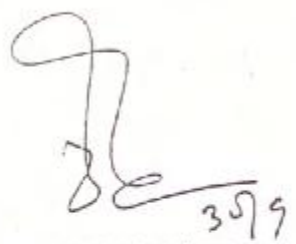
3. Committee will submit its report within three months, from the date of failure.

4. Concerned power utility will provide all assistance, required by the committee in carrying out the meetings, make arrangements for immediate site visit after failure of towers by providing transport and travel facilities and preparation of the report.

5. All the Organisations/Power Utilities are requested to nominate their officers/alternate as their representative, and intimate to Chief Engineer STC, C

Every incident of Tower failure must be immediately reported to Chairman, CEA and Members of the Standing Committee.

8. This issues with the approval of Chairman, CEA.


(VIJOY KUMAR)
Secretary (CEA)

✓ CMD Power Grid, New Delhi.

✓ DG CPRI, Bangalore.

✓ Head of Civil Engg. Deptt., IIT Delhi

Chairman of SEBs/Transmission Corporation/Grid Companies

PS to Chairman, CEA

PS to Member (PS), CEA

As per list
Enclosed.

✓ Copy to: Chief Engineer (GM), CEA

PS to Secy, CEA

ssm
11/10/99

केविप्रा
CEA

भारत सरकार
केन्द्रीय विद्युत प्राधिकरण
सचिव का कार्यालय
सेवा भवन, आरओ केओ पुरम्,
नई दिल्ली - 110 066



(अ.प्र.सं. 3001/2004)

o.CEA/5-41(18)/Secy-2012 / 166

Dated: 06.08.2012

OFFICE ORDER

Subject: Re-composition of the Standing Committee of Experts to investigate failure of towers-Amendment - Reg.

Standing Committee of Experts was constituted vide this Office Memorandum Technical Committee No. 16) of even no. dated 30.09.1999 to investigate the causes of failure of towers. After the enactment of Electricity Act, 2003, it is felt necessary to re-compose the above said Committee. The revised Composition of the Standing Committee of Experts to investigate failure of towers is given below:

- | | | |
|---|---|------------------|
| 1. Chief Engineer, SETD, CEA | - | Chairperson |
| 2. Additional Director, (CPRI) | - | Member |
| 3. Head, Deptt. of Civil Engg, Delhi Technological University- | - | Member |
| 4. Representative from Power Utility
where Power failure occurred | - | Member |
| 5. Member Secretary, Regional Power Committee
where Power failure occurred | - | Member |
| 6. Director (Transmission), SETD, CEA | - | Member Secretary |

The other terms of reference shall remain the same as indicated in the above referred Office Memorandum.

(M.S. Puri)

Secretary, CEA

Tel. No.26108476

To:

- ✓ 1. Chief Engineer, SETD, CEA
2. Director (Transmission), SETD, CEA
3. Additional Director, Mechanical Engineering Division, Central Power Research Institute (CPRI), C.V. Raman Road, Bangalore
4. Head, Deptt. of Civil Engineering, Delhi Technological University, Shahbad Daulatpur, Bawana Road, Delhi

Sh. Salvoor

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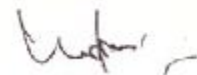
5. Representative from Power Utility (as per list enclosed)
6. Member Secretary, Regional Power Committee
(NRPC, WRPC, SRPC, ERPC & NERPC)

Copy for information to:

1. SA to Chairperson, CEA
2. SA to Member (PS), CEA

Copy for kind information to:

1. Secretary, Ministry of Power, Sharam Shakti Bhawan, Rafi Marg, New Delhi
2. Chairman and Managing Director, Powergrid Corporation of India Ltd., Saudamini, Plot No.2, Sector-29, Gurgaon



(M.S. Puri)
Secretary, CEA
Tel. No.26108476

