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BUREAU OF INDIAN STANDARDS

MINUTES

Name of the Committee	No. of Meeting	Day	Date	Time	Venue
High Voltage Switchgear and Controlgear Sectional Committee, ETD 08	27th	Tuesday	27 Dec 2022	1030h	BIS Webex URL: https://bisindia.webex.com/bisindia/j.php?MTID=m4b0d181b460177f3fded7e5378996074 Meeting no: 2518 385 1064 Password : ETD@08

CHAIRMAN: Shri M K Wadhwani **MEMBER SECRETARY**: Smt Meghna Mudgal

Members Present:

S. No	Organization	Name
1.	*Chairperson (ETD 08)* In personal Capacity	Shri M K Wadhwani
2.	*Member Secretary (ETD 08)* Bureau of Indian Standards	Smt Meghna Mudgal
3.	ABB India Limited	Shri V Ramesh
4.	Bharat Heavy Electrical Limited	Shri Akhilendra Kumar
5.	Brihan Mumbai Electric Supply and Transport Undertaking	Shri Sharad Gaikwad
6.	Calcutta Electric Supply Corporation Limited	Shri Sujit Kumar Pathak
7.	Central Power Research Institute	Shri Manoher Singh Takkher
8.	Central Electricity Authority	Shri Y.K. Swarnkar
9.	CG Power and Industrial Solutions	Shri Ajay Kahane
10.	Eaton Technologies Private Limited	Shri Hari Sreenivasavarma
11.	Electrical Research and Development Association	Shri Y.I.Pathan
12.	Engineers India Limited	Shri Manoj Meena
13.	Engineers India Limited	Shri Harish Kumar
14.	Indian Electrical and Electronics Manufacturers Association	Shri Uttam Kumar
15.	Larsen and Toubro Limited	Shri Pravin K Chhaya
16.	National Hydroelectric Power Corporation	Shri Vimlesh Kumar Pandey
17.	National Hydroelectric Power Corporation	Shri Umesh Kumar Nand

18.	Nuclear Power Corporation of India Limited	Shri Saunak Mondal
19.	Powergrid Corporation of India	Shri Amandeep Singh
20.	Schneider Electric India Private Limited	Shri Ambrish Gandhi
21.	Siemens Limited	Shri Ramadharababu.Thummapal
22.	Siemens Limited	Shri Subodh Kale
23.	Tata Power Delhi Distribution Limited	Shri Brajanath Dey
24.	Vensun Techno Links (Private) Limited	Shri J. Mahendran

Item 0 GENERAL

0.1 WELCOME & OPENING REMARKS BY THE CHAIRMAN

The Chairman welcomed the members present to the meeting. He appreciated the efforts of members actively contributing to the process of standardization and hoped for a fruitful discussion on all Agenda points. He advised the members to examine IEC documents circulated from time to time and to provide comments so that India-specific view-point is considered at the time of development and revision of important IEC standards which are accepted and implemented in India as well.

0.2 Member Secretary welcomed the members to the meeting and briefed the members regarding various agenda points which required detailed discussions and solicited the co-operation of the members for completing the agenda in time.

Item 1 CONFIRMATION OF THE MINUTES OF THE LAST MEETING

The committee formally confirmed the minutes of the 26th meeting of High Voltage Switchgear and Controlgear Sectional Committee, ETD 08, held on 23 Feb 2022 virtually.

Item 2 COMPOSITION OF HIGH VOLTAGE SWITCHGEAR AND CONTROLGEAR SECTIONAL COMMITTEE, ETD 08

2.1 The present composition of High Voltage Switchgear and Controlgear Sectional Committee, ETD 08 as given at Annex 1 of the agenda was reviewed.
It was decided to seek fresh nominations from the following organizations for the committee:

i) Intertek India (Chairman confirmed that Shri Pravin Kumar, M/s Intertek shall provide nominations).
ii) Siemens India confirmed that fresh nominations shall be provided at the earliest.

It was further decided to write to all such organizations who have not participated since the last two meetings for active participation in the committee.

Co-option requests received via Standardization portal which were also attached in Annex 1 were considered by the committee. The following was decided:

i) EIL representative Shri Manoj Meena agreed to confirm if Shri Javed Akhtar can be added as a Young professional representative in the committee (as second alternate member from EIL); individual request of Mr Akhtar was not accepted as EIL is already a member of ETD 08.
ii) It was decided to co-opt M/s GE India Industrial Pvt. Ltd. given the organization's wide experience in the High voltage switchgear field.

iii) In addition to the above requests received, it was decided to co-opt Shri Y V Joshi (superannuated from GETCO) in personal capacity given his expertise and experience in the field of High Voltage Switchgear.

2.2 Shri Uttam Kumar, IEEMA agreed to provide the contact details for M/s Hitachi Energy India Limited for seeking nominations for their participation in the committee.

Item 3 ACTIONS ARISING OUT OF PREVIOUS MEETING

The committee noted the information given in the agenda.

Item 4 PRESENT POSITION OF WORK

The committee noted the information given in the agenda.
Annex 3 of the agenda which lists the IEC standards against which no Indian Standards exist was reviewed and it was decided to adopt the following IEC standard as an Indian Standard given its wide utility from testing perspective in the country:

i) IEC 62271-110: 2017 High-voltage switchgear and controlgear - Part 110: Inductive load switching

It was decided to issue the above standard in ***wide circulation for a period of 60 days.***
In case no comments are received during wide circulation, the committee agreed to send the document for printing with the approval of the Chair of the committee.

Further, the following Working Group (WG) was formed to assess the list of IEC standards against which no Indian Standards exist (given at Annex 3 of the agenda):

i) Shri V Ramesh, M/s ABB India Ltd.- Convener
ii) Shri S Sudhakar Reddy, M/s CPRI
iii) Shri Ambrish Gandhi, M/s Schneider Electric India Pvt. Ltd.
iv) Representative from Powergrid Corporation of India Ltd.

The working group was advised to identify the IEC standards from the list (given at Annex 3 of the agenda) for consideration of the committee for harmonization. Further, the working group shall also state reasons for not recommending the IEC standards, if any, from the list for adaptation in India as Indian Standards.

4.1 DRAFTS UNDER PRINT

The committee noted the information given in the agenda.

4.2 DRAFTS FINALIZED FOR PRINTING

The committee finalized the following documents for printing in case no comments are received during their wide circulation period.

Sl No.	IS No.	TITLE	Eqv. IEC	Latest IEC	Action reported in the agenda

1.	IS/IEC 62271 : PART 1 : 2007	High - Voltage switchgear and controlgear Part 1 common specifications	IEC 62271-1 : 2007	IEC 62271-1:2017+AMD1 :2021 CSV	Document is under wide circulation as Doc ETD 08 (21278) Last date of comments: 11 Feb 2023
2.	IS/IEC 62271 : PART 100 : 2008	High - Voltage Switchgear and Controlgear Part 100 Alternating - Current Circuit - Breakers	IEC 62271-100 : 2008	IEC 62271-100:2021	Document is under wide circulation as Doc ETD 08 (21451) Last date of comments: 13 Feb 2023
3.	IS/IEC 62271 : Part 101 : 2012	High - Voltage Switchgear and Controlgear Part 101 Synthetic Testing	IEC 62271-101 : 2012	IEC 62271-101: 2021	Document is under wide circulation as Doc ETD 08 (21471) Last date of comments: 13 Feb 2023
4.	IS/IEC 62271 : Part 103 : 2011	High - Voltage switchgear and controlgear Part 103 switches for rated voltages above 1 kV up to and including 52 kV	IEC 62271-103 : 2011	IEC 62271-103:2021	Document is under wide circulation as Doc ETD 08 (21473) Last date of comments: 13 Feb 2023
5.	IS/IEC 62271 : Part 105 : 2012	High - Voltage switchgear and controlgear Part 105 alternating current switch - Fuse combinations for rated voltages above 1 kV up to and including 52 kV (First Revision)	IEC 62271-105 : 2015	IEC 62271-105:2021	Document is under wide circulation as Doc ETD 08 (21475) Last date of comments: 13 Feb 2023
6.	IS/IEC 62271 : Part 106 : 2012	High-Voltage Switchgear and Controlgear Part 106 Alternating Current Contactors Contactor-Based Controllers and Motor-Starters	IEC 62271-106 : 2012	IEC 62271-106:2021	Document is under wide circulation as Doc ETD 08 (21477) Last date of comments: 13 Feb 2023
7.	IS/IEC 62271 : PART 109 : 2008	High - Voltage Switchgear and Controlgear Part 109 Alternating - Current Series Capacitor by - Pass Switches	IEC 62271-109 : 2008	IEC 62271-109:2019	Document is under wide circulation as Doc ETD 08 (21478) Last date of comments: 13 Feb 2023
8.	IS/IEC 62271 : Part 111 : 2012	High - Voltage switchgear and controlgear Part 111 automatic circuit reclosers and fault interrupters for alternating current systems up to 38 kV	IEC 62271-111 : 2012	IEC 62271-111:2019	Document is under wide circulation as Doc ETD 08 (21479) Last date of comments: 13 Feb 2023

9.	IS/IEC 62271 : Part 200 : 2011	High-Voltage Switchgear and Controlgear Part 200 a c Metal-Enclosed Switchgear and Controlgear for Rated Voltages Above 1 kV Up to and Including 52 kV (First Revision)	IEC 62271-200 : 2011	IEC 62271-200:2021	Document is under wide circulation as Doc ETD 08 (21481) Last date of comments: 13 Feb 2023
10.	IS/IEC 62271 : Part 203 : 2011	High - Voltage switchgear and controlgear Part 203 gas - Insulated metal - Enclosed switchgear for rated voltages above 52 kV (First Revision)	IEC 62271-203 : 2011	IEC 62271-203:2022 PRV Note: This IEC standard is to be issued in wide circulation once published by IEC.	Document is under wide circulation as Doc ETD 08 (21482) Last date of comments: 13 Feb 2023

4.3 DRAFTS APPROVED FOR WIDE CIRCULATION

Sl No.	Subject/IS/IEC no.	Action reported in the last meeting	Decision Taken	Action Reported in the agenda	Decision Taken
1.	**Doc ETD 08 (18961)** Code of Practice for on-site Diagnostic Tests and Condition Monitoring of High Voltage Substation Equipment	P-draft circulated as Doc ETD 08 (18961) on 16 Feb 2022. Last date of comments : 18 March 2022	Committee members were requested to examine the draft and submit their comments. The comments received shall be referred to Panel ETD 08/P1 for preparing draft resolutions/recommendations for consideration of the committee.	No comments have been received from the committee members.	The committee approved the document for wide circulation for a period of 60 days. It was decided to write to the state utilities/DISOMs separately seeking comments during wide circulation. Further, Shri Uttam Kumar, M/s IEEMA agreed to circulate the document among industry participants to obtain their

					comments on the draft during the wide circulation period.

4.4 P-DRAFTS

Sl No.	Subject/IS/IEC no.	Decision Taken	Action reported in the agenda	Decision Taken
1.	**GIS Switchgear for voltage levels ≤ 52 kV**	The panel ETD 08/P2 composition was reviewed and the panel was reconstituted as given below: 1) Shri S S Reddy, CPRI Bengaluru- Convener 2) Representative from CEA (member ETD 08) 3) Shri Koushik Choudhury, CESC 4) Shri Subodh Kale, Siemens 5) Shri V. Ramesh, ABB 6) Shri B.P. Soni, GETCO 7) Shri Pravin K Chhaya, L&T 8) Shri V.K. Gajjar, Schneider 9) Representative of IEEMA 10) Shri Brajanath Dey, Tata Power-DDL 11) Shri Abhishek Harsh, BYPL Panel P2 was advised to review, assess, and propose action with a draft document for	Panel P2 to update the committee on the progress of work.	Panel P2 members informed that the panel had discussed regarding coverage of all requirements of the subject in IS/IEC 62271-200. Shri V Ramesh, M/s ABB India submitted the following view point for consideration of the committee: i)GIS is a new technology yet to get matured in India and still most are working with the imported technologies. ii) With the world under discussion regarding the ban of SF6 or use of SF6 on MV equipment from 2024, alternate to SF6 is also being evaluated by various manufacturers. iii) The present GIS requirements are covered and handled under IEC 62271-200. Hence the necessity of new Indian standard

		consideration of the committee. This task shall be completed within 2 months by the panel.		creation must be revisited before moving forward with drafting the document. He opined that the committee must assess the development for the next 2 to 3 years and revisit this requirement in 2025. The panel was asked to take the above comments into consideration and submit its final recommendation in the next 2 months for final consideration of the committee.

Item 5 Review of Published Standards for Revision/Reaffirmation

5.1 The committee noted the information given in the agenda.

5.2 Comments on Published Standards

Comment on IS 5561: 2018

Comment received	**Decision taken in the last meeting**	**Action reported in the agenda**	**Decision Taken**
See Annex 4 of the agenda	After detailed discussions, the committee decided that the comments must be re-visited and data be collected as to how the Resistance test is being carried out as per the IS requirements/methodology. Panel ETD 08/P3 was constituted for completing the above task:	1. A panel meeting of ETD 08/P3 was held on 16 June 2022 and the minutes were circulated on 20 June 2022. The same are enclosed at	1. The committee discussed and deliberated on the panel recommendation in detail and agreed that testing procedure of the resistance test is not specified for all types of conductors/configurations which may lead to significant difference in results. Further, the contact resistance can be

	1) Shri R K Tyagi, Convener (ETD 08/P3) 2) Representative from CEA (member ETD 08) 3) Shri Subodh Kale, Siemens 4) Shri Ambrish Gandhi, Schneider Electric India Private Limited 5) Shri Himashu Bahirat, IIT Bombay 6) Shri Pravin K Chhaya, Larsen and Toubro Limited 7) Shri M. S. Takkher, CPRI 8) Representative from Intertek India Private Limited 9) Shri Jayanth Kumar Boppa, NPCIL 10) Shri B.P Soni, GETCO 11) Shri Koushik Choudhury, CESC 12) Shri Abhishek Harsh, BYPL 13) Shri J Mahendran, Vensun Techo Links (P) Convener was authorized to co-opt and seek inputs from other relevant stakeholders viz. other utilities in order to assess and collect data relevant to the comments submitted by M/s Vensun Techo Links. Based on the data and assessment, the panel shall submit its recommendation and	Annex 5 of the agenda for consideration of the sectional committee. 2. Further, M/s Vensun have submitted the following comment for consideration of the sectional committee: "*All electrical contact surface area shall be machined & from cast skin machined*" for addition of this requirement to IS 5561.	correlated from the Temperature rise test. Given the inconsistencies being faced in the field as reported by the panel, the committee decided the following: An amendment shall be prepared stating that the "Resistance Test shall be kept in abeyance" to avoid any inconsistencies in interpretation. Inputs shall be invited from all relevant stakeholders especially State utilities/DISCOMS seeking their comments on the same. 2. W.r.t point no. 2, committee members pointed out that process of achieving the surface smoothness and desired resistivity should not be added as part of the standard. However, from the user perspective, a recommendatory note may be added to give guidance for achieving the same. The committee therefore, decided that the following recommendatory note shall be added after Clause 8.1: "NOTE - Electrical Contact surfaces may be machined and free from cast skin." The above note shall be added to the draft amendment mentioned at Point no. 1 above. The committee decided to issue the draft amendment

	report for consideration of the committee.		in ***wide circulation for 60 days***. ***Inputs shall be invited from all relevant stakeholders especially State utilities/DISCOMS seeking their comments on the same during the wide circulation period.***

5.3 Action Research Projects (ARP)

Action Research projects to review and assess the existing Indian Standards published prior to the year 2000 have been undertaken by committee members/BIS officials on the following Indian Standards under the purview of ETD 08:

i) **IS 8084: 1976** Specification for interconnecting bus - Bars for ac voltage above 1 kV up to and including 36 kV – *reviewed by Shri Rahul Vishwarma (BIS official)*
The review report as enclosed at Annex 6 of the agenda was reviewed.
As decided in the last meeting, Shri V Ramesh, M/s ABB presented his recommendation before the committee stating that the Indian Standard IS 8084 must be revised in line with latest BS 159:1992. In addition, Shri V Ramesh and Shri S S Reddy shall review and confirm further if all requirements of IS 8084 are covered under IS/IEC 62271-200 and recommendation to this effect shall be submitted by them in 2 months for further consideration of the committee.

The committee decided that in the meantime, revised draft of IS 8084 in line with BS 159: 1992 must be put in ***wide circulation for 60 days*** for review by all stakeholders.

ii) IS 9135: 1979 Guide for testing of circuit - Breakers with respect to out - Of - Phase switching – The committee noted that IS 9135 shall be superseded by IS/IEC 62271-100: 2021 (currently under WC as Doc ETD 08 (21451) once it is published.

Item 6 IMPLEMENTATION OF INDIAN STANDARDS

The committee noted the information given in the agenda.

Item 7 INTERNATIONAL ACTIVITIES

7.1 The committee noted the information given in the agenda. *See also* Item 4 of these Minutes.

7.2 Shri R K Tyagi, Powergrid Corporation of India is a nominated Indian expert in MT 36 'Maintenance of IEC 62271-100' under IEC SC 17A. A meeting of MT 36 is now scheduled during 24,25,26 January 2023 at Oslo, Norway wherein Shri Tyagi would be representing India being the registered expert from India. Agenda of the meeting was enclosed at Annex 7 of the agenda.

As decided in the last meeting, Shri Amandeep, Powergrid Corporation of India made a presentation on the work being carried out at IEC and apprised the Indian stakeholders of the

development (*see* enclosed presentation). He apprised the Indian National committee members that SC17A had proposed to split the IEC 62271-100 into two parts for HV & MV breakers. However, Indian NC had opposed the idea for this split (through correspondence) during the last meeting of SC 17A held in San Francisco, USA in Oct 2022. ETD 08 members supported the above Indian comment. Shri Amandeep informed that the comment from India was considered favorably during the SC 17A meeting and the proposed split has been disapproved.

He informed that the next meeting of MT 36 is now scheduled during 24-26 Jan 2023 at Norway. Members agreed to provide inputs for the draft Amendment which would be drafted by the MT 36 once made available to them after the MT meeting so that Indian view point is captured in the content of the draft Amendment.

Members were also requested to consider submitting their nomination for registration as an expert in the MT 36 of IEC SC 17A so that continued Indian view point gets presented during the discussions in the future as well. Members agreed to confirm with their respective organizations and submit their nominations as soon as possible.
It was clarified to the members that it is an obligation for the registered experts to regularly participate in the MT/WG meetings at IEC and submit their comments, else the membership may be downgraded to 'Observer' status by the IEC.

Item 8 FUTURE PLANS AND STRATEGIES

The committee noted the information given in the agenda.

Item 9 DATE AND PLACE OF NEXT MEETING

It was decided to hold the next meeting tentatively in the month of May 2023 in New Delhi (BIS Office). The final date and place of the meeting shall be decided in consultation with the Chair of the committee.

Item 10 ANY OTHER BUSINESS

There being no other business, the meeting ended with a vote of thanks to the Chair.