

**BUREAU OF INDIAN STANDARDS****MINUTES**

Name of the Committee	No. of Meeting	Day	Date	Time	Mode	Venue
Fluids for Electrotechnical Applications, Sectional Committee, ETD 03	23rd	Thursday	16-05-2024	1030 h	Hybrid	Samvaad (Green Room), BIS New Delhi

**MEMBERS PRESENT:**

Sr. No.	Organization	Member	Email	Mode of Participation
1	In Individual Capacity	Dr. P Thomas ( <i>Chairperson</i> )	pthomas64@gmail.com	Physical
2	Bureau of Indian Standards, New Delhi	Shri Abinash Bordoloi ( <i>Member Secretary</i> )	eetd@bis.gov.in	Physical
3	Adani Electricity Limited, Mumbai	Shri Asish Nema	ashish.nema@adani.com	Physical
4	Bharat Petroleum Corporation Limited, Mumbai	Dr. Kashinath T. Sutar	kashinaths@bharatpetroleum.in	Physical
5	Bureau of Energy Efficiency, New Delhi	Shri Dheeraj Pandey	dheeraj.pandey96@beeindia.gov.in	Physical
6	Cargill India Private Limited, Gurugram	Shri Naveen Jain	Naveen_Jain@cargill.com	Physical
7	Central Power Research Institute, Bengaluru	Dr. Ann Pamla Cruze	Pamla@cpri.in	Physical
8	CSIR-National Physical Laboratory, New Delhi	Dr. Arun Ram Prasath RT	arunramprasathrt@nplindia.org	Physical
9	Electrical Research and Development Association, Vadodara	Shri Pankaj Chawla	pankaj.chawla@erda.org	Physical
10	Hindustan Petroleum Corporation Limited, Mumbai	Shri Lalit Yadav	lalit.yadav@hpcl.in	Physical
11	Indian Electrical & Electronics Manufacturers Association, New Delhi	Shri Shubham Maurya	shubham.maurya@ieema.org	Physical
12	Indian Oil Corporation Limited, New Delhi	Dr. Chanakya Tripathi	tripathic@indianoil.in	Physical
		Dr. M N K Prasad Bolisetty	bolisettyMNK@indianoil.in	Physical
		Shri Peeyush Dubey	pdubey@indianoil.in	Physical

13	Savita Oil Technologies Limited, Mumbai	Shri D S Dhanak	dsdhanak@savita.com	Physical
		Shri Prabhakar P. Phatak	ppphatak@savita.com	Physical
14	APAR Industries Limited, Mumbai	Dr. TCSM Gupta	tcsm.gupta@apar.com	Virtual
15	Electrical Research and Development Association, Vadodara	Ms. Majusha Nambiar	manjusha.nambiar@erda.org	Virtual
16	Global Electrical Laboratory, Vadodara	Shri Hardik Rana	enquiry@gelab.co.in	Virtual
17	NTPC Limited, New Delhi	Shri Koushik Das	koushikdas@ntpc.co.in	Virtual
18	Power Grid Corporation of India, Gurugram	Shri Gunjan Agarwal	gunjan.agrawal@powergrid.in	Virtual

## **Item 0 GENERAL**

### **0.1 Welcome and Opening Remarks by the Chairman**

Dr. P Thomas, Chairman welcomed all the members present in the meeting. He requested the members to confine their discussions to the agenda and to participate actively in the discussions during the course of the meeting.

Sh. Abinash Bordoloi, Member Secretary welcomed all the members present in the meeting. He briefed about the agenda items of the meeting. He requested the members to ensure participation in all the meetings of the committee and wished for the active participation of the members in the discussions during the meeting.

## **Item 1 CONFIRMATION OF THE MINUTES OF THE LAST MEETING**

The minutes of the 22<sup>nd</sup> Meeting of Fluids for Electrotechnical Applications Sectional Committee held on 25.04.2023 and sectional committee meetings held on 27.07.2023 and 10.11.2023 was confirmed by the committee.

## **Item 2 COMPOSITION OF FLUIDS FOR ELECTROTECHNICAL APPLICATIONS SECTIONAL COMMITTEE**

**2.1** The committee noted the composition of the committee.

### **2.2 Status of Participation of Members in the Previous Three Meetings.**

It was informed to the committee that the absence of a member in two consecutive meetings of the committee would result in termination of membership. The committee noted the status of participation of the Members in the Previous three Meetings.

### **2.3 Notified Vacancy of Academia for membership in ETD 03 Sectional Committee.**

The committee noted the information given in the agenda.

## **Item 3 ANNUAL ACTION PLAN FOR STANDARDIZATION 2024-2025**

The committee noted the Annual Action Plan for Standardization 2024-2025 of ETD 03 Sectional Committee.

#### Item 4 REVIEW OF PERFORMANCE OF ETD 03-FLUIDS FOR ELECTROTECHNICAL APPLICATIONS SECTIONAL COMMITTEE (2023-2024)

The performance of ETD 03 Sectional Committee was reviewed by the committee. The Chairman advised the committee to improve the performance. He further stressed on ensuring attendance in the sectional committee meetings, submission of comments on the P-drafts circulated in the committee, expediting the generation of documents. He also advised the members to exercise proactive approach towards the standardization works for improving the performance of ETD 03 sectional committee.

#### Item 5 ACTIONS ARISING OUT OF PREVIOUS MEETING

Sl. No.	Item No. of last minutes	Subject	Decision	Action Taken/Proposed	Remarks/Decision
1	2.1	<b>Composition of Fluids for Electrotechnical Applications Sectional Committee</b>	The Committee decided to drop the following organizations: 1. B.R. Industrial Services, Mumbai  2. Raj Petro Specialities Private Limited, New Delhi  3. United Phosphorus Limited, Mumbai	Dropped.  The committee may note.	The committee noted.
2	2.1	<b>Composition of Fluids for Electrotechnical Applications Sectional Committee</b>	The committee decided to send a reminder email to following organizations for participation in the committee in view of low attendance:  1. Bureau of Energy Efficiency, New Delhi  2. Calcutta Electric Supply Corporation Limited, Kolkata (Shri Rajaram Shinde to provide the contact details)  3. Defence Research and Development Organization, Hyderabad  4. Indian Transformers Manufacturers Association, Vaishali  5. NTPC Limited, New Delhi  6. Siemens Limited, Mumbai  7. Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited, Lucknow  8. Tamil Nadu Electricity Board, Chennai	Reminders were sent to the following organization to ensure participation in the sectional committee meetings and due to non-participation in two consecutive meetings held on 25/07/2023 and 11/11/2023 the membership of the following organizations have been terminated.  1. Calcutta Electric Supply Corporation Limited, Kolkata (Shri Rajaram Shinde to provide the contact details)  2. Defence Research and Development Organization, Hyderabad  3. Indian Transformers Manufacturers Association, Vaishali	The list of terminated members was reviewed by the committee. However, it was requested to review the membership of NTPC Limited in view of its participation in the last meeting dated 10.11.2023 and in the current meeting. Further, NTPC Limited is also included in the current composition of ETD 03 Sectional Committee. The same was reviewed and informed to the committee that it was a typographical error and inadvertently got added in the list.

				<p>4. NTPC Limited, New Delhi</p> <p>5. Siemens Limited, Mumbai.</p> <p>7. Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited, Lucknow</p> <p>8. Tamil Nadu Electricity Board, Chennai.</p> <p>The committee may note.</p>	
3	3.1	<b>Composition of the Committee</b>	<p>The committee had requested Shri Rajaram Shinde to obtain the nomination details from the following organizations:</p> <p>i) PSEB ii) GETCO iii) MSEB iv) GE T&amp;D</p>	<p>Shri Rajaram Shinde may update the committee.</p>	<p>Dr. Rajaram Shinde was not available during the meeting. The committee requested BIS to follow up with the organizations i.e. PSEB, GETCO, MSEB and GE T&amp;D for obtaining the nominations. The contact details of the same would be provided by the committee.</p>
4	3.2	<b>IS 16785: 2018/IEEE C57.155-2014</b>	<p>Data on DGA for ester-filled transformers to be obtained from GETCO, Tata Power, ERDA, &amp; CPRI. Specific changes occurring due to change in average ambient temperature need to be identified to undertake revision, if necessary.</p> <p>Shri Rajaram Shinde, informed that IEC is working on consolidated DGA standard for all dielectric fluids.10/1192/CDV IEC 60567 ED5: Oil filled electrical equipment - Sampling of free gases and analysis of free and dissolved gases – Guidance circulated vide email dated 13 Feb 2023 with last date</p>	<p>IEC 60567:2023 has been published on 08/12/2023. The committee may note.</p> <p>Shri Naveen Jain may update the committee.</p>	<p>Shri Naveen Jain informed that DGA data for ester-filled transformers could not be obtained due to non-sharing of data by the utilities. It was informed by the member secretary that a research project on ‘DGA data for ester-based transformer fluids and conclude method for interpretation of DGA for fault identifications of Ester Fluid Filled Transformer’ was hosted on the BIS website and proposal submitted by NIT Mizoram has been approved for undertaking the project. It has been decided by the committee that the</p>

			of comments 24/03/2023.  The committee has requested Shri Naveen Jain from Cargill India Private Limited to obtain DGA data for ester-filled transformers from GETCO and Tata Power.		data on DGA for Ester Filled Transformers would be collected by NIT, Mizoram during their course of research since the proposal submitted by them on the R & D Project on the said subject has been approved. The committee decided to provide the necessary assistance to NIT Mizoram for the same.  The committee noted the information regarding publication of IEC 60567:2023.
5	3.3	<b>Revision of IS 335:2018</b>	The committee decided to review IEC 60296:2020 for a period of 3 months for revision of IS 335.  A Proposal was received from Central Electricity Authority (CEA) to align IS 335: 2018 with IEC 60296: 2020 in-order to have uniformity in the Country and manufacturers exporting insulating oil do not face any problem. The same was discussed during the Sectional Committee meeting dated 27/07/2023. However, Consensus couldn't be achieved during the meeting due to the difference in opinion amongst various stakeholders i.e. some were of the opinion that IS 335:2018 caters to all the requirements and revision was not required whereas some stakeholders were of the opinion to adopt IEC 60296 as an Indian Standard. It was therefore decided to obtain inputs from utilities in order to reach consensus as they are the end-users.	Inputs was sought from the utilities and the inputs received from the utilities are attached at <b>Annex 4</b> .  The committee may deliberate and decide.	It has been decided to constitute a working panel for the revision of IS 335:2018 consisting of the following members:  a) <i>Shri TCSM Gupta (APAR Industries Limited, Mumbai)- Convenor</i>  b) <i>Dr. Kashinath T. Sutar (Bharat Petroleum Corporation Limited, Mumbai)</i>  c) <i>Shri Naveen Jain (Cargill India Private Limited, Gurugram)</i>  d) <i>Shri Pankaj Chawla (Electrical Research and Development Association, Vadodara)</i>  e) <i>Shri Lalit Yadav (Hindustan Petroleum Corporation Limited, Mumbai)</i>  f) <i>Dr. Kavita Rai (Indian Oil Corporation Limited, New Delhi)</i>

					<p>g) <i>Shri Koushik Das (NTPC Limited, New Delhi)</i></p> <p>h) <i>Shri Gunjan Agarwal (Power Grid Corporation of India, Gurugram)</i></p> <p>i) <i>Shri Prabhakar P. Pathak (Savita Oil Technologies Limited, Mumbai)</i></p> <p>The scope of the working panel as decided by the committee is given below:</p> <p><i>1.Preparation of the working draft in respect of the revision of IS 335:2018 within 3 months.</i></p> <p><i>2.Examine and provide technical inputs on all the comments and queries received on IS 335:2018 to the committee.</i></p> <p>The committee decided to refer all the comments on IS 335:2018 as mentioned in Annex 4 of the agenda to the panel for examination and providing inputs on the same.</p>
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6	3.5-Annex 1-Sl. No. 2	IS 6103: 1971-Method of test for specific resistance Resistivity of electrical insulating liquids	The committee had decided to withdraw IS 6103: 1971 as IS 16840:2018-Insulating Liquids-Measurement of relative permittivity dielectric dissipation factor Tan and DC resistivity supersedes IS 6103:1971	Withdrawn. The committee may note	The committee noted
7	3.5-Annex 1-Sl. No. 3	IS 6104:1971-Method of test for interfacial tension of oil against water by the ring method.	The committee has decided to adopt IEC 62961 and has instructed the Member Secretary to wide circulate the document for a duration of one month. If no comments are received during this period, the document will be finalized and sent for printing with the approval of the Chairperson.	Under Printing. The committee may note	The committee noted
8	3.5-Annex 1-Sl. No. 4	IS 6262: 1971 Method of test for power factor and dielectric constant of electrical insulating liquids	The committee has decided to withdraw <i>IS 6262: 1971</i> as <i>IS 16840:2018 Insulating liquids - Measurement of relative permittivity dielectric dissipation factor Tan and DC Resistivity</i> supersedes IS 6103: 1971.	Withdrawn. The committee may note	The committee noted
9	3.5-Annex 1-Sl. No. 5	IS 9960: 1981 Specification for electrical grade castor oil for use as capacitor impregnant.	The Committee decided to withdraw as the standard is obsolete.	Withdrawn. The committee may note	The committee noted
10	3.5-Annex 1-Sl. No. 6	IS 11549: 1986 Specification for impregnating oils and compounds for paper insulated cables up to 33 KV	The Committee decided to withdraw as the standard is obsolete.	Withdrawn. The committee may note	The committee noted
11	3.5-Annex 1-Sl. No. 7	IS 11697:1986 Guide for determination of lightning impulse electric strength of insulating liquids	The committee has decided to reprint the document and wide circulate it for a duration of one month. If no comments are received during this period, the document will be finalized and sent for printing with the approval of the Chairperson.	The committee may consider circulating the draft as P-Draft for 30 days and then wide circulate.	The committee decided to circulate the draft as P-Draft for one month and then wide circulate for a duration of one month
12	3.5-Annex-1-Sl. No. 8	IS 12026: Part 1: 1986 Guide for the determination of the	The committee has decided to withdraw <i>IS 12026 Part 1</i> as the standard is obsolete.	Withdrawn. The committee may note	The committee noted.

		aromatic hydrocarbon content of new insulating oils Part 1 adsorption chromatographic Method.			
13	3.5 Annex-1-Sl. No. 9	IS 12026: Part 2: 1986 Guide for the determination of the aromatic hydrocarbon content of new insulating oils Part 2 infra -Red spectrophotometric method	The committee has decided to withdraw <i>IS 12026 Part 2</i> as <i>IS 13155: 1991 Method of test for carbon type analysis of mineral oils by infra – Red spectrophotometry</i> supersedes <i>IS 12026 Part 2</i>	Withdrawn The committee may note.	The committee noted.
14	3.5 Annex-1-Sl. No. 10	IS 12177: 1987 Methods of tests for oxidative ageing of electrical insulating petroleum oils by open beaker method	The committee has decided to reprint IS 12177: 1987 and wide circulate for a duration of one month. If no comments are received during this period, the document will be finalized and sent for printing with the approval of the Chairperson.	The committee may consider circulating the draft as P-Draft for 30 days and then wide circulate.	The committee decided to circulate the draft as P-Draft for one month and then wide circulate for a duration of one month
15	3.5 Annex-1-Sl. No. 11	IS 12475: Part 1: 1988 Specification of degassing of insulating liquid under electric stress and ionization Part 1 methods of determination of gassing rate under hydrogen atmosphere	The committee has decided to reprint IS 12475 Part 1 & 2 and wide circulate for a duration of one month. If no comments are received during this period, the document will be finalized and sent for printing with the approval of the Chairperson.	The committee may consider circulating the draft as P-Draft for 30 days and then wide circulate.	The committee decided to circulate the draft as P-Draft for one month and then wide circulate for a duration of one month.
16	3.5-Annex-1-Sl No. 12	IS 12475: Part 2: 1988 Specification of degassing of insulating liquids under electric stress and ionization Part 2 method of determination of gassing rate under nitrogen atmosphere			
17	3.5-Annex 1-Sl No. 13	IS 12958: 1990 Oxidation stability of inhibited mineral insulating oil by rotating bomb- Method of test	The committee decided to rename the title as ' <i>Oxidation stability of inhibited mineral insulating oil by Pressure Vessel - Method of test</i> ' & update scope & significance as per ASTM D2112-01a.  The committee decided to	The committee may consider circulating the draft as P-Draft for 30 days and then wide circulate.	The committee decided to circulate the draft as P-Draft for one month and then wide circulate for a duration of one month



			send revised draft for Wide Circulation for a period of 1 Month. If no comments are received during this period, the document will be finalized and sent for printing with the approval of the Chairperson.		
18	3.5-Annex-1-Sl. No. 14	IS 13067: 1991 Impregnates for power capacitors - Specification	The committee has decided to reprint IS 13067: 1991 and circulate it widely for a duration of one month. If no comments are received during this period, the document will be finalized and sent for printing with the approval of the Chairperson.	The committee may consider circulating the draft as P-Draft for 30 days and then wide circulate.	The committee decided to circulate the draft as P-Draft for one month and then wide circulate for a duration of one month
19	3.5-Annex-1-Sl. No. 15	IS 13155 : 1991 Method of test for carbon type analysis of mineral oils by infra – Red spectrophotometry	The committee has decided to reprint IS 13155: 1991 and circulate it widely for a duration of one month. If no comments are received during this period, the document will be finalized and sent for printing with the approval of the Chairperson.	The committee may consider circulating the draft as P-Draft for 30 days and then wide circulate.	The committee decided to circulate the draft as P-Draft for one month and then wide circulate for a duration of one month

## Item 6 PRESENT POSITION OF WORK

The committee noted the Programme of Work of ETD 03 Sectional Committee.

## Item 7 REVIEW OF INDIAN STANDARDS FOR REVISION/REAFFIRMATION

### 7.1 Standards due for Review:

The committee reviewed and noted the list of standards due for review as mentioned at Annex 6.

### 7.2 Indian Standards adopted from IEC which are due for review:

a) The committee decided to Reaffirm all the Indian Standards mentioned at Annex 7 except IS 9434:2019/IEC 60567:2011; since the Indian Standards mentioned at Annex 7 are identical adoption of the corresponding IEC Standards and there are no changes in the corresponding IEC Standards.

b) The committee decided to review and revise IS 9434:2019/IEC 60567:2011 since IEC 60567: 2011 has been revised to IEC 60567:2023 and IS 9434:2019 is an identical adoption of IEC 60567.

## Item 8 DOCUMENTS UNDER PRINTING

The committee noted the information given in the agenda.

## Item 9 NEW WORK ITEM PROPOSAL

The committee noted the information given in the agenda and considered the NWIP ‘DGA data for ester-based transformer fluids and conclude method for interpretation of DGA for fault identifications of Ester Fluid Filled Transformer’ for formulation of Indian Standards.

## **Item 10 INTERNATIONAL ACTIVITIES**

**10.1** The committee noted the information given in the agenda.

**10.2** The committee noted the information given in the agenda.

### **10.3 Identification of IEC publications for harmonization**

a) The committee decided to review all Indian standards which have been formulated based on the IEC Standards; and when the corresponding IEC standards get revised.

b) The committee noted the list of published IEC Standards as mentioned in Annex 10 in the agenda.

### **10.4 Participation of Indian Delegation in the IEC TC 10 Plenary Meeting scheduled in Rome, Italy on 18/04/2024**

The delegates who had participated in the IEC 10 Plenary Meeting in Rome, Italy on 18/04/2024 and present during the meeting briefed the committee regarding the discussions held during the meeting. The Indian Delegation was requested to submit a consolidated report on the discussions held during the meeting at the earliest.

### **10.5 Review of Nominated Experts in IEC TC 10**

a) The committee reviewed the nominated experts in the various working groups of IEC TC 10 as given in Annex 12 of the agenda and decided to remove the experts that are no longer associated with ETD 03 Sectional Committee and further decided to nominate new experts in place of these experts.

b) The committee decided to nominate experts in the working groups of IEC TC 10 where no experts are nominated, on the basis of their expertise on the domain of work of the respective working groups.

## **Item 11 DATE AND PLACE FOR THE NEXT MEETING**

The next meeting will be scheduled in the next quarter as per the Annual Action Plan for Standardization (2024-2025) in consultation with the Chairman. However, meetings in addition to that proposed in the meeting calendar of APS (2024-2025) may also be organized in consultation with the chair as per the exigency of work.

## **Item 12 TERMS OF REFERENCE (TORS) FOR RESEARCH AND DEVELOPMENT**

The committee noted the information given in the agenda.

## **Item 13 ANY OTHER BUSINESS**

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

