

**BUREAU OF INDIAN STANDARDS**  
**ELECTROTECHNICAL DEPARTMENT (ETD)**  
**RESOLUTIONS OF SECTIONAL COMMITTEE MEETING**

<b>Sectional Committee</b>	<b>Meeting No:</b>	<b>Date</b>	<b>Mode</b>
Transformers Sectional Committee (ETD 16)	34 <sup>th</sup>	06/12/2024	Hybrid
<b>Chairperson</b> Shri S. S. Reddy		<b>Member Secretary</b> Shri Abinash Bordoloi	

**Resolution 1**

The minutes of the 33<sup>rd</sup> meeting has been confirmed by the committee.

**Resolution 2**

The Co-option/Membership Requests of PHD Chamber of Commerce and Industry, New Delhi and Eaton India Innovation Centre LLP, Pune and All India Transformers Manufacturers Association (AITMA) have been rejected by the committee.

**Resolution 3**

The Co-option/Membership Request of M/s GE Vernova T & D India Ltd, Vadodara has been accepted by the committee.

**Resolution 4**

It has been decided to circulate the draft list of the Working Panels and Working Groups proposed to be constituted under various sectors and subsectors identified under ETD 16 to the members for inputs. Timelines decided for seeking inputs is 1 week. The list to be finalised in a separate virtual meeting after a week.

**Resolution 5**

a. Members of ETD 16 Sectional Committee to review the updated draft Doc. ETD/16/23039 (Onsite Diagnostic testing of power transformers for condition health assessment). Timelines decided for review is 1 week.

b. No further internal comments to be considered as decided. Working Panel P/09 to replace the term ‘Mandatory (M) by ‘Recommended (R)’ under the category of tests & Table 1. Further the references of available IS and International Standards to be provided against the tests (if required) as specified under table 3 in the draft.

**Resolution 6**

a. It has been decided to revise IS 2026 (Part 1): 2011 for aligning with IEC 60076-1:2011. The work of preparation of the draft to be initiated by the proposed working group after finalisation of the same.

b. Working Panel P/14 to submit the draft of IS 10028 (Part 1/2/3) within 15 days. It has been decided to include Sh. Ravindra Bhanage, Tata Power Ltd, Mumbai in the working panel P/14 and the proposed working group under sector “Selection, Installation, Maintenance & Repairing of Transformers”.

c. Comment submitted by Ms. Shreya Kumari, BIS-ERO on IS 2026 (Part 1):2011 has been considered by the committee.

d. Comment submitted by MPPKVVCL on IS 18284:2023 with respect to increasing the tolerance of No Load Losses to 50 % has not been considered by the committee.

e. Comment submitted by BIS-Bhopal Branch Office on IS 18284:2023 has been considered by the committee.

f. Comment submitted by PSPCL on standardisation of losses of 40 kVA Distribution Transformers in IS 1180 (Part 1): 2014 has not been considered by the committee. 40 kVA Distribution Transformers to be considered as a non-preferred rating with the losses subject to the agreement between user and supplier.

g. The committee clarified on the query submitted by Sh. Raunak Sharma, Torrent Power Ltd, Surat regarding Repetitive Dielectric test in Transformers that if a transformer has not been put into service, all the tests are to be carried out at 100 % levels including HV tests. For Transformers put into service the requirements specified in Cl. 8 of IS 2026 (Part 3): 2018 to be referred.

h. Comment submitted by ITMA on Secondary Voltage of Distribution Transformers has not been considered by the committee. The committee clarified that the provision of providing any other tapping range and tapping step as per the agreement between the user and the supplier is already available in IS 1180 (Part 1):2014 and IS 1180 (Part 3):2021.

**Resolution 7**

The decisions taken on the present status of work of ETD 16 Sectional committee is given in the table below.

Sl. No.	IS No./Title/Doc. No	Decision Taken
1	IS 2026 (Part 21): 2018 Power transformers Part 21 standard requirements terminology and test code for step - Voltage regulators	It has been decided to revise IS 2026 (Part 21):2018 to align with IEC 60076-21:2018 considering Indian conditions.
2	IS 9147 : 1979 Specification for cable sealing boxes for oil - Immersed transformers suitable for paper - Insulated lead sheathed cables for highest system voltages from 12 kV up to and including 36 kV	Working Panel to submit the draft by 06/01/2025.
3	IS 12977 : 1990 Arc furnace transformers specification	Draft to be submitted within 1 month after finalisation of the proposed working group.
4	IS 13956 : 1994 Testing transformers - Specification	Draft to be circulated as P-Draft upon completion.
5	Progress of work in Panel 4 Revision of IS 3639:1966 (Specification for fittings and accessories for power transformers)	It has been decided to align with IEC 60076-22 series. Proposed working Group to review IEC 60076-22 series after finalisation and submit a report within 1 month.
6	Progress of work in Panel 7 Inverter Duty transformers	Working Panel P/07 to submit the draft by 13.12.2024. The same to be circulated as P-Draft on receipt.
7	Progress of work in Panel 9 On site diagnostic testing of power transformers. Doc No.-ETD/16/23039	a. Members of ETD 16 Sectional Committee to review the updated draft Doc. ETD/16/23039 (Onsite Diagnostic testing of power transformers for condition health assessment). Timelines decided for review is 1 week.  b. No further internal comments to be considered as decided. Working Panel P/09 to replace the term 'Mandatory (M)' by 'Recommended (R)' under the category of tests & Table 1. Further the references of available IS and International Standards to be provided against the tests (if required) as specified under table 3 in the draft.
8	Progress of work in Panel 10 Dry type distribution transformers	Draft to be circulated as P-Draft for 1 month.
9	Progress of Work in Panel 14 Revision of IS 10028 series – Code of practice for selection, installation and maintenance of transformers.	Working Panel P/14 to submit the draft of IS 10028 (Part 1/2/3) within 15 days. It has been decided to include Sh. Ravindra Bhanage, Tata Power Ltd, Mumbai in the working panel P/14 and the proposed working group under sector "Selection, Installation, Maintenance & Repairing of Transformers
10	Revision of IS 8448 : 1989 'Automatic line voltage correctors step type for domestic use'	It has been decided to reaffirm and revise IS 8448: 1989. Draft to be submitted by the proposed working group by 28.02.2025 after finalisation.
11	Revision of IS 2026 (Part 2)	Draft to be submitted by the proposed working group within 1 month after finalisation.
12	IS 2026 (Part 7) Power transformers - Part 7: Loading guide for mineral-oil-immersed power transformers	Draft to be submitted by the proposed working group within 1 month after finalisation. Sh. Maheswar Rao, CPRI Bengaluru to be co-opted in the working group.
13	IS 2026 (Part 4) Terminal and tapping markings for power transformers	IS 2026 (Part 4): 1977 to be aligned with IEC 60076-9 after its publication. IEC TR 60616:1978 is under revision at IEC and will be published as an International Standard as IEC 60076-9.
14	Progress of work in Panel 13 for revision of IS 1180 (Part 1)	It has been decided to Reaffirm IS 1180 (Part 1):2014. The work on the revision to continue. Draft to be submitted by the working panel/group within 1 month. The proposed new loss levels of BEE to be taken into consideration in the draft.

15	Progress of Work in Panel-15: New Standard on Voltage Regulating Distribution Transformers	Draft to be submitted by the proposed working group within 1 month after finalisation
16	New Standard on Essential requirements for Transformer Cores	MHI to include the experts in the proposed working group to be convened by MHI.
17	IEC/IEEE 60214-2: 2019 Tap-changers - Part 2: Application guidelines	Draft to be submitted by the proposed working group within 1 month after finalisation
18	IEC 61378-1:2011 Converter transformers - Part 1: Transformers for industrial applications  IEC 61378-3: 2015 Converter transformers - Part 3: Application guide	Draft to be submitted by the proposed working group by 28.02.2025 after finalisation. Experts from GE Vernova, Siemens, Hitachi Energy, NTPC, BHEL to be included in the working group.
19	Progress of Work in Panel 6- New standard on Submersible Duty Transformers and Accessories	Draft to be circulated as P-Draft for 1 month.
20	Revision of IS 2026 (Part 5): 2006- Power Transformers Part 5-Ability to Withstand Short Circuit	The committee approved the draft amendment of IS 2026 (Part 5):2006. Draft Amendment to be circulated as P-draft for 15 days.
21	Standardization of online accessories fitted on Transformer and reactors.	The Co-option requests of proposed experts i.e. Mr. Vinay Gupta (MTE Meter Test Equipment AG), Mr. Nitin Sopanrao Dhamale (Cee Dee Vacuum Equipment Pvt. Ltd) has been approved by the committee. The co-option request of proposed expert Mr. Jean-Noel Berube has been rejected by the committee.  It has been decided to include experts from PGCIL, BSES and Tata Power Ltd in the working group.

#### **Resolution 11**

It has been decided to approach IIT Roorkee, IISC Bangalore for inclusion of experts in the working group. Mr. Rajaram Mohan Rao Chennu (CPRI Bengaluru) also to be included in the proposed working group. The Working group to submit a report by 28.02.2024 after finalisation.

#### **Resolution 12**

Sh. C Jayasenan to convene the working panel on Development of Code of Practice Standard on Sustainable Practices for Transformers Industry and Organisations. Experts working on the sustainability sector to be co-opted in the working panel.

#### **Resolution 13**

a. The TOR on “Evaluation of Field Efficiency of Dry type transformers and mapping end of life recycling in India” has been approved by the committee.

b. The TOR on “Study of Agriculture Connection by Utilities for DT Rating Rationalisation” has been deferred by the committee.

c. The TOR on “ Inverter Duty Transformer Requirements for the Grid Connected Solar Photovoltaic Plants for Reliable and Efficient Operation” has been rejected by the committee.

#### **Resolution 14**

The committee decided not to take up the Research Project Proposal on “Higher level of Electrical Transformers - Higher Carbon Emissions” submitted by All India Transformers Manufacturers Association (AITMA).

*\* Detailed Minutes will follow.*