

Ministry of Railways
Research, Designs & Standards Organisation
Manak Nagar, Lucknow - 226 011

No.EL/3.2.1/3/J6

23.11.1984.

SPECIAL MAINTENANCE INSTRUCTIONS NO RDSO/ELRS/SMI/120
MAINTENANCE OF MAIN TRANSFORMER OIL IN SERVICE

1. OBJECT

Railways have reported rapid deterioration of transformer oil conforming to IS 335-1983 in service due to sharp increase in acidity of indigenous transformer oil on account of oxidation. It is also noticed that there is a sharp increase in the acidity level of the oil in service after it attains an acidity level of 0.3 mg KOH/gm. In order to maintain the transformer oil in good working condition, the following instructions are required to be followed.

2. INSTRUCTIONS

- 2.1** The transformer oil in service should be checked for its acidity and dielectric strength during every AOH and the value recorded. If the acidity observed is less than the permissible value of 0.5 mg KOH/gm (maximum), the oil may be kept in service provided the dielectric strength also is not less than 50 KV. In case the dielectric strength is less than 50KV, the oil may be filtered/recycled. If the acidity is observed to be more than 0.5 mg KOH/gm but less than 1.0 mg/KOH/gm, the same is to be kept under observation. In case of acidity exceeding 1.0 mg KOH/gm the oil is to be discarded.
- 2.2** While transferring the new oil from the stock to the transformer tank, it should be ensured that the dielectric strength of the oil transferred is raised to an average value of 68 KV (Max 80 KV) In no case, the dielectric strength of the oil being filled in the transformer tank should be less than 60KV.
- 2.3** Old and new transformer oils should not be mixed.
- 2.4** Reclaimed oil should not be used in locomotive/EMU transformers.
- 2.5** During POH the old transformer oil should be replaced with new oil pressured as per IS 335-1983.
- 2.6** The transformer oil is to be procured only from one of the following RDSO approved suppliers ;

- i) M/s Savita Chemicals Private Limited
6th floor, 766-767, Nariman Bhavan
Bombay 400021.
- ii) M/s Madras petro chemicals Limited,
Manali, Madras 600063.
- iii) M/s Apar private Limited,
(special oil refinery)
Mohal, Trombay. Bombay 400074

3. Reference

- i) Minutes of meeting held on 4.8.84 at kanpur loco shed with BHEL.
- ii) Transformer Maintenance Manual NO. Mi/E-3/01 issued in June.1972.

4. PERIODICITY

- i) Replacement of oil old-POH.
- ii) Checking of dielectric strength/acidity-AOH

5. Instruction Drawing.

NIL.

6. Application of class of loco & EMU:

All the AC locomotives and AC EMUs.

7. Agency of implementation

All AC electric loco sheds, EMU sheds and workshops holding AC locos/AC EMUs.

8. Distribution

As per enclosed list.

(M. M. PRAKASAM)
for Director General (Elect)