Standardization of Specification for Distribution transformers DDUGJY Projects and availability of level II DTs for the Projects

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Standard: a Document, approved by a recognized body, that provides rules, guidelines , techniques of design, installation, commissioning.

Specification?

A document that specifies

- requirements
- Design
- Behavior/characteristics

in a complete, precise and verifiable manner.

Distribution Transformer	IS 1180 (part-1) 2014
HV bushings LV bushings	IS 2099 IS 7421
Insulating Kraft Paper Insulating Press Board	IS – 9335 IS – 1576
Oil specification Installation and maintenance of transformers	IS 335 IS – 10028

Technical Specifications

- According to climate condition

I. Max ambient air temperature (0C) : 50
II. Min ambient air temperature (0C) : -5
III. Max average daily ambient air temperature (0C) : 40
IV. Maximum altitude above mean sea level (Metres) : To be specified by the user

Transformers shall conform to the following specific parameters

Item	11kV DTR
System voltage (max.)	12 kV
Rated voltage HV	11 kV
Rated voltage LV	433 V
Frequency	50 Hz +/- 5%
No. of Phases	Three
Connection HV	Delta
Connection LV	Star
Vector group	Dyn-11
Type of cooling	ONAN

- Core material: Cold rolled grain oriented annealed steel lamination having low loss.
- Winding: up to 250kVA winding shall be wound from Super Enamel covered /Double Paper covered aluminium conductor

  250 and above windings shall be wound from Super Enamel covered / Double Paper covered copper conductor

- Tap: Tapping shall be provided for transformers above 100 kVA rating
- Tr. Oil:Use of recycled oil is not acceptable

Insulation Level

Voltage(kV)	Impulse Voltage (kVp)	Power frequency voltage (kV)
0.433	-	3
11	95	28

Distribution transformer Losses

Rating(kVA)	3 @ 50 % loading	3 star @ 100 % loading
25	210	695
63	380	1250
100	520	1800
250	1050	3150

Distribution transformer Losses as per 1180 , 1st Feb' 2016

Rating (kVA)	Energy Efficiency level -1 @ 50 % loading	Energy Efficiency level -1 @ 100 % loading	Energy Efficiency level -2 @ 50 % loading	Energy Efficiency level -2 @ 100 % loading	Energy Efficiency level -3 @ 50 % loading	Energy Efficiency level -3 @ 100 % loading
25	210W	695W	190W	635W	175W	595W
63	380W	1250W	340W	1140W	300W	1050W
100	520W	1800W	475W	1650W	435W	1500W
250	1050W	3150W	980W	2930W	920W	2700W

- **PERCENTAGE IMPEDANCE:**75 0C shall be 4.5%

- **Temperature rise:** Top oil temperature rise measured by thermometer : 35 deg Cent

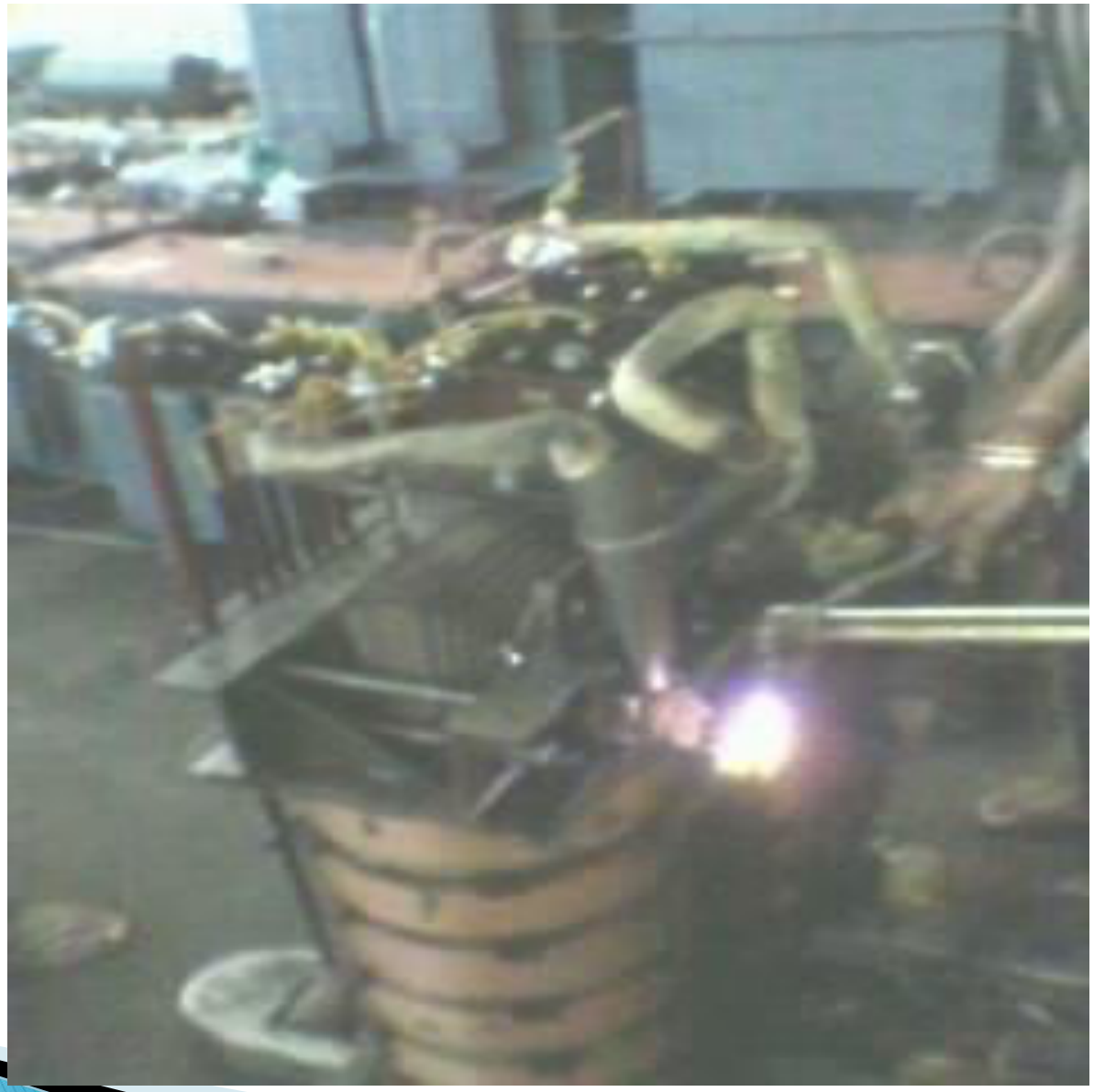
  Winding temperature rise measured by resistance method : 40 0C

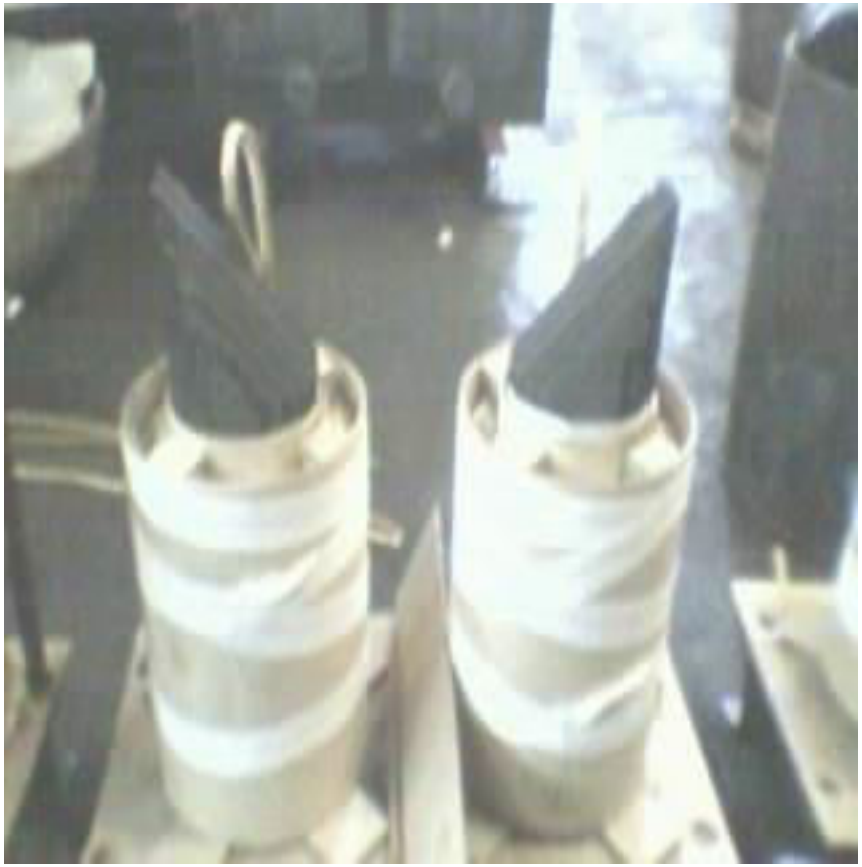
Specifications in nameplate and their significance

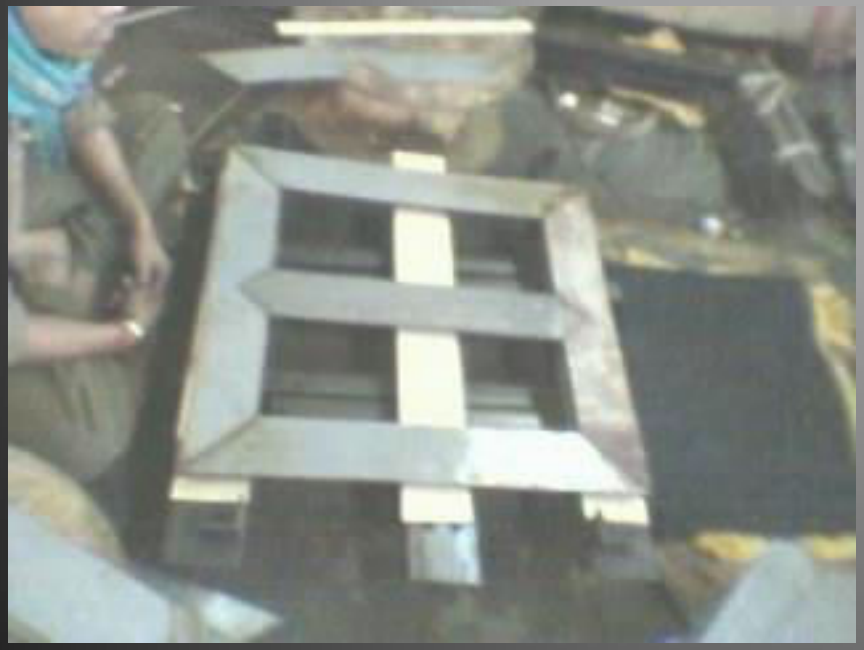
1. Make
2. Sl. No.
3. Standard:
4. Frequency: 50 Hz
5. Type of cooling: ONAN/ONAF/OFAF
6. kVA: 63100kVA

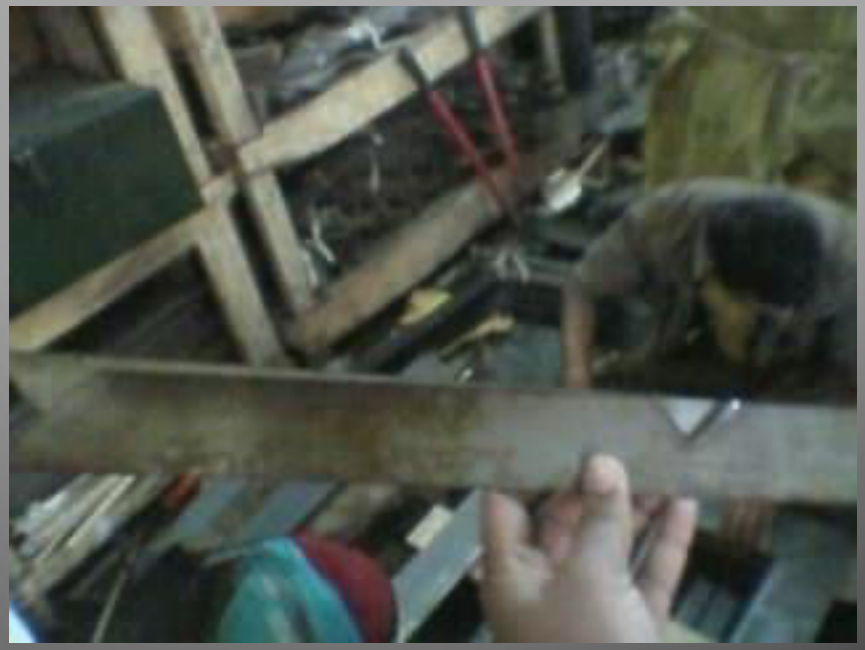
7. Volt. at No Load: HV: 11000V, LV: 430V
8. Amps: HV: 5.25A, LV: 133A
9. Vector group: Dyn11
10. Impedance Volt.: %
11. no. of Tap
12. Year of Manufacture:
13. Core & winding weight:

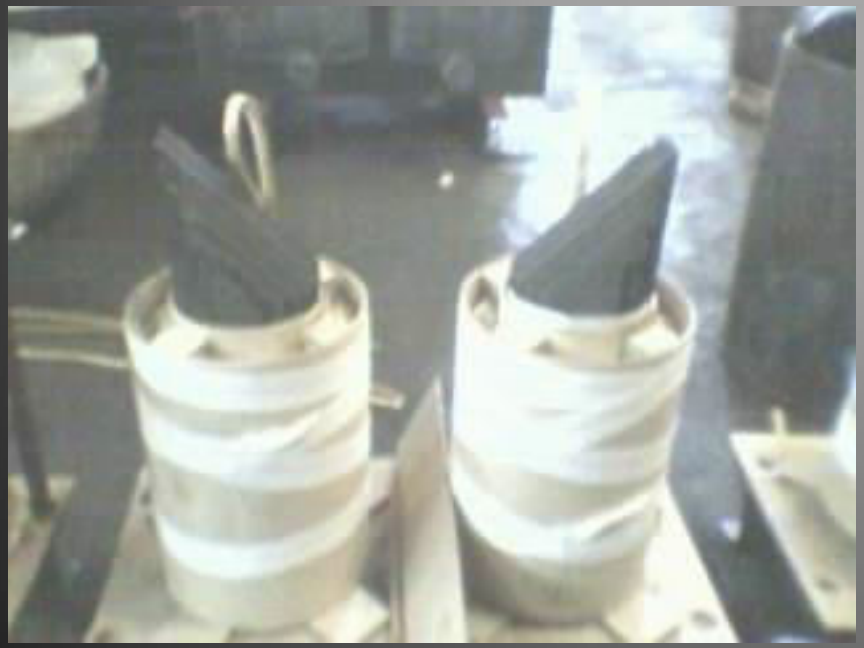
14. Volume of Oil:
15. Total weight:
16. Drawing No.
17. Guaranteed max. Temp. Rise in Oil.:45°C
18. Connection Diag.
19. Connection Symbol.
20. Customer reference.

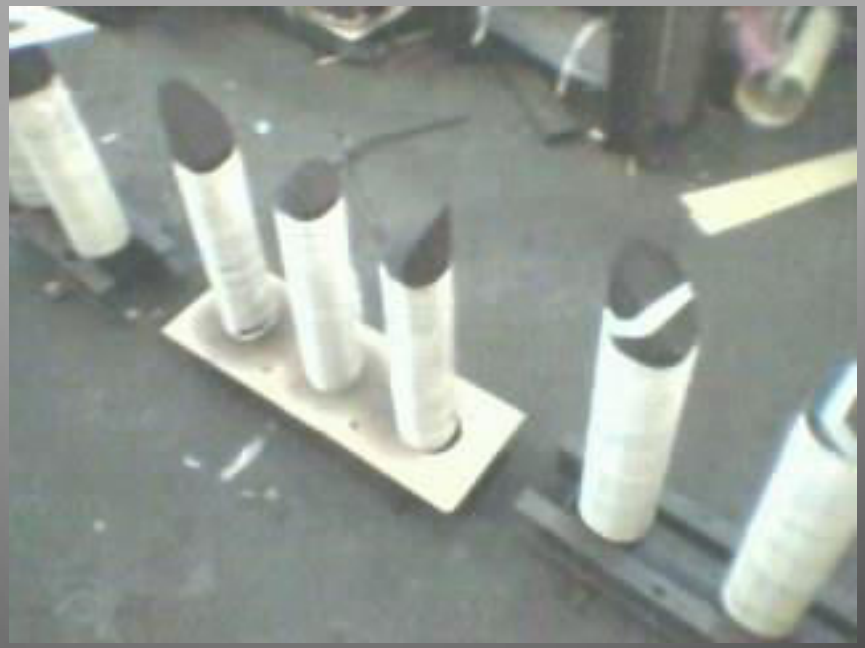


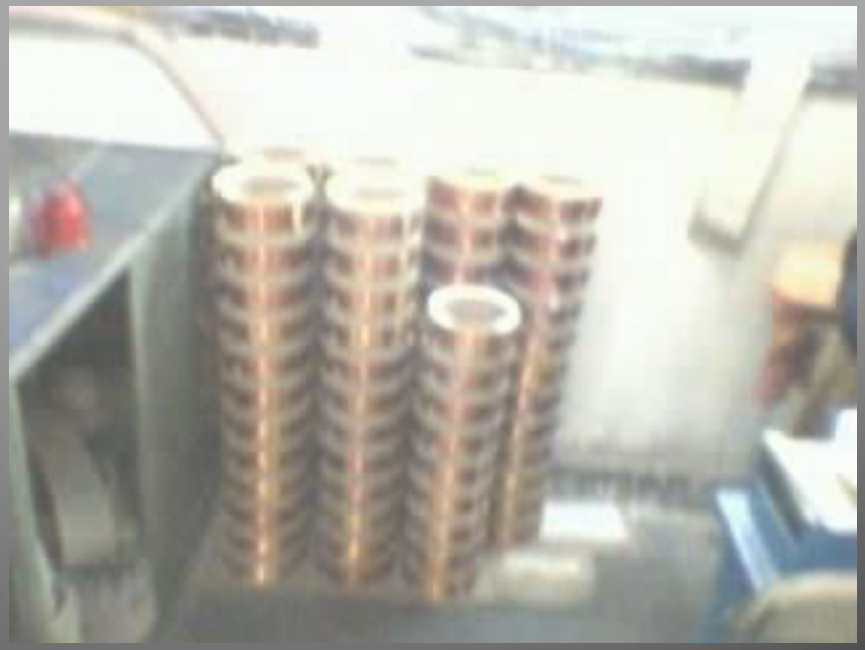


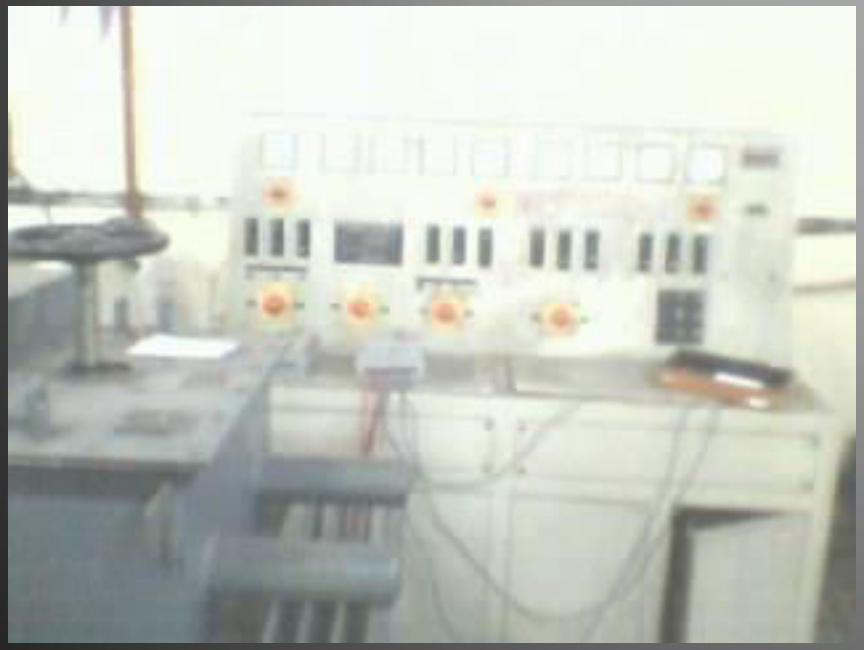


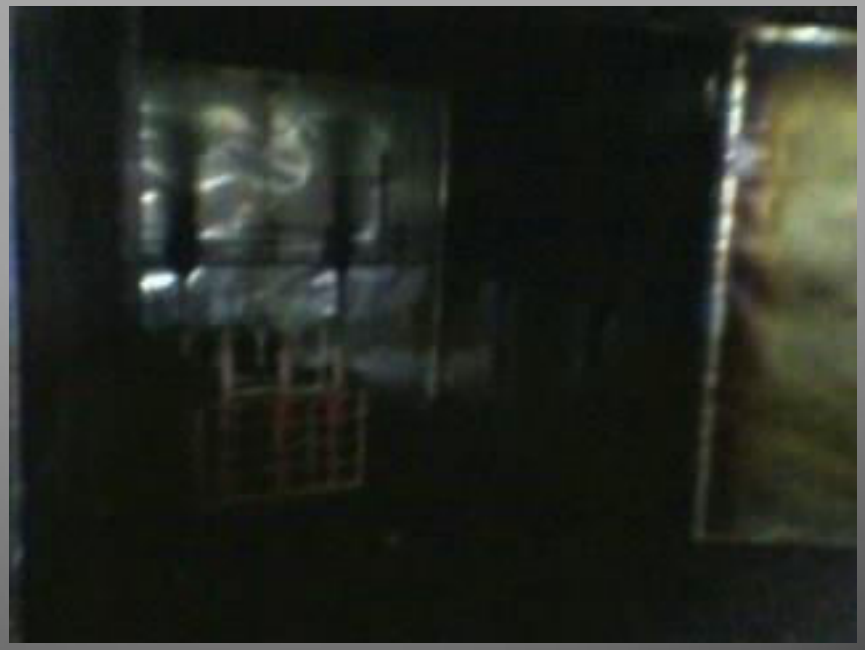


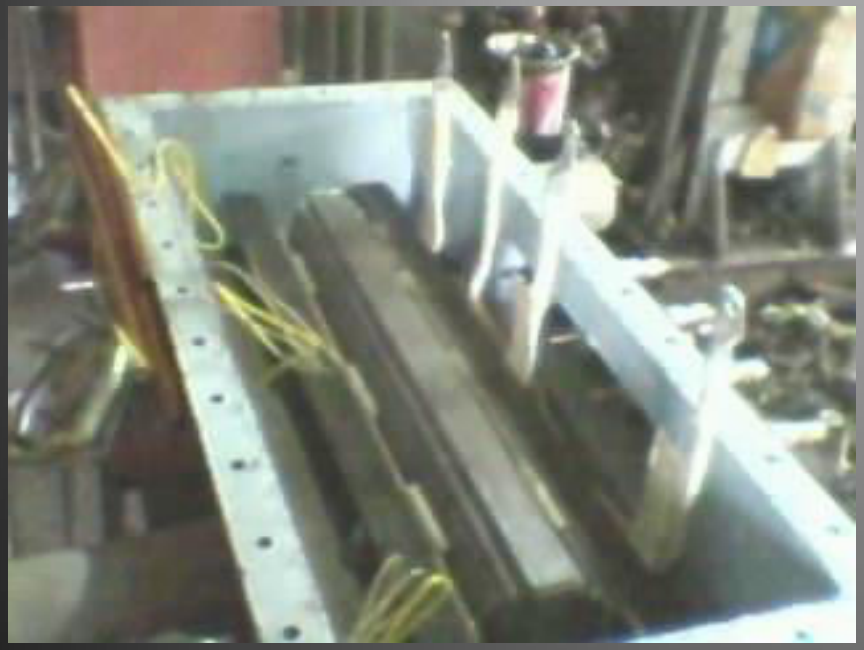


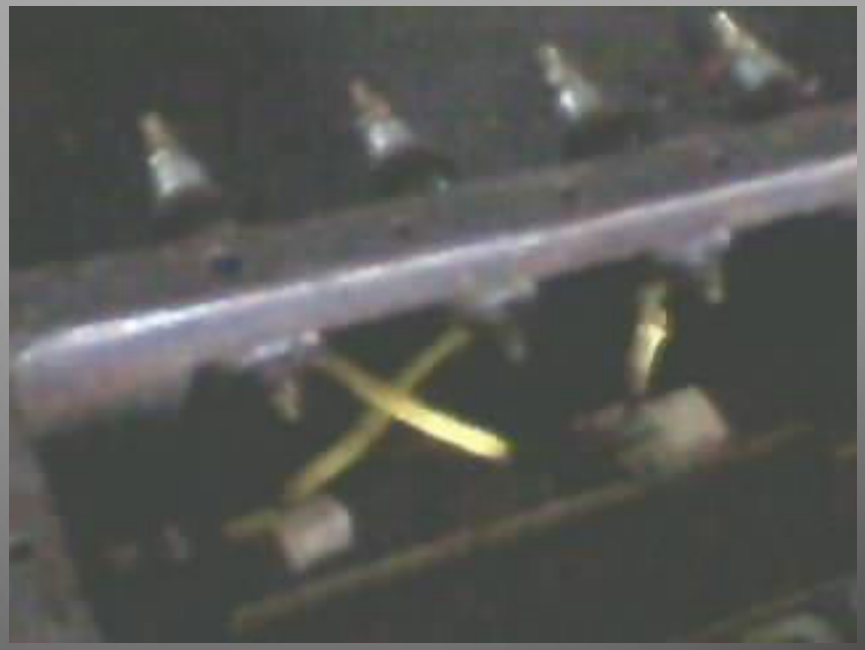


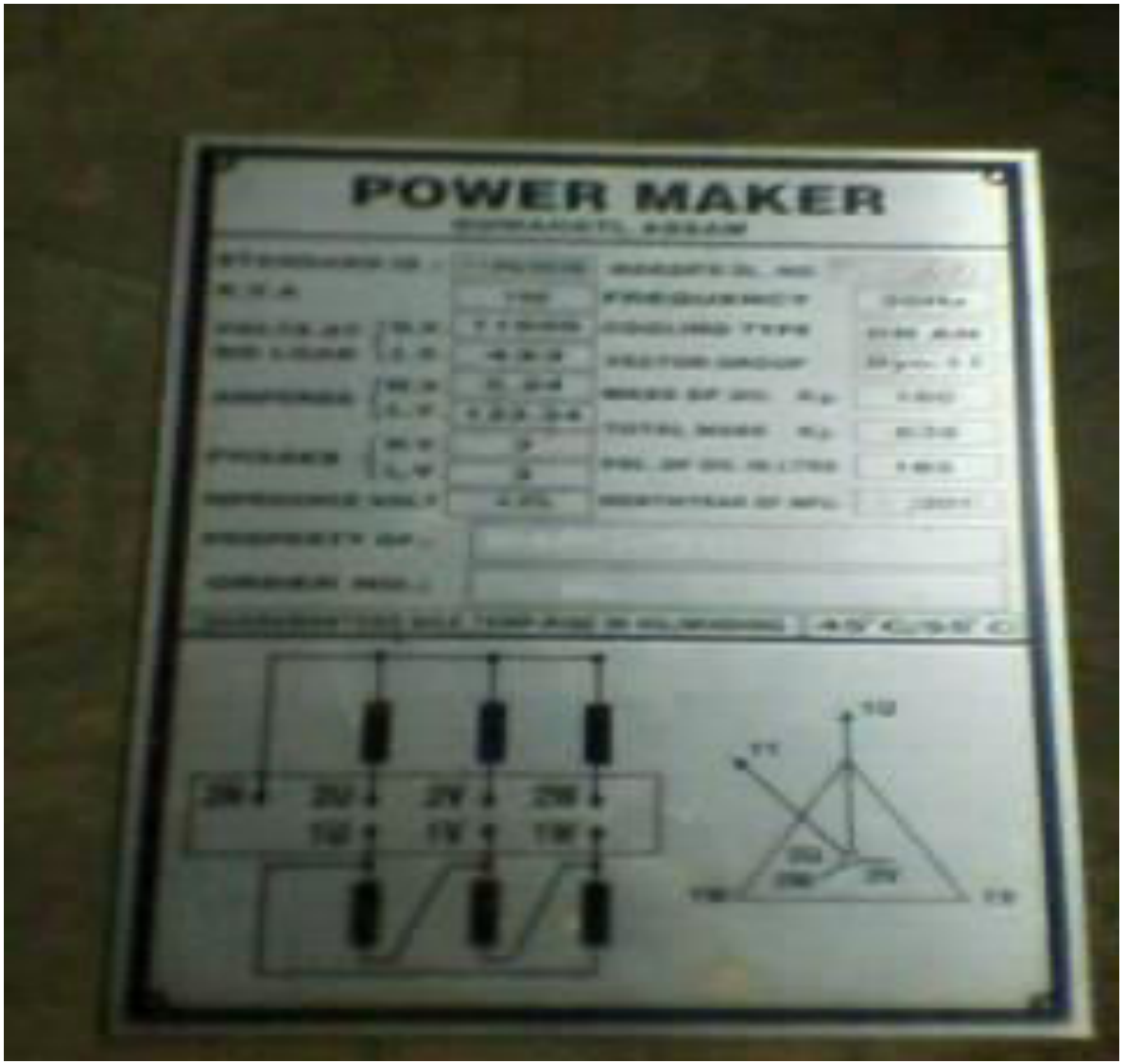


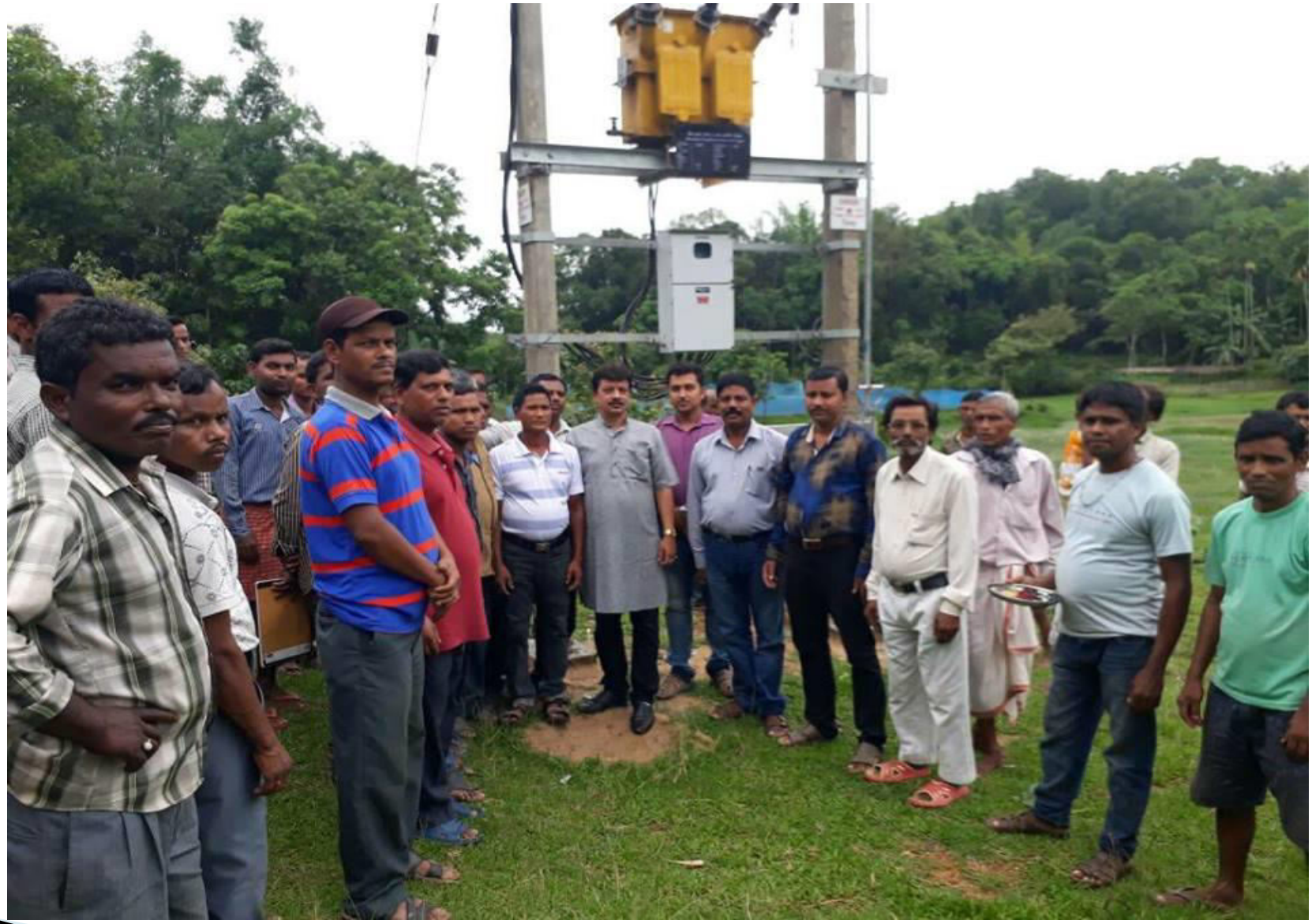









POWER MAKER



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