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JAIPUR VIDYUT VITRAN NIGAM LIMITED
OFFICE OF THE CHIEF ENGINEER COMMERCIAL
VIDYUT BHAWAN, JANPATH, JAIPUR

JPR5-537

No. JPD /CE (C)/C.I/F.4(261)/Pt.IX/D.541

Dt. 4.03.09

ORDER

Sub: Installation of Dry/Oil Type Transformers in Residential/Commercial buildings and their testing in Nigam's Central Testing Laboratory (CTL) prior to installation.

As per provisions of the "Indian Electricity Rules-1956" only Dry-type transformer shall be used for installation inside the Residential/Commercial buildings. The relevant provisions under Rule 64(2) (e)(iv) of Indian Electricity Rules-1956 is reproduced hereunder:-

"Notwithstanding any thing contained in Rule-64(2)(d) & 64(2)(f)(ii), only dry type transformers shall be used for installations inside the residential/commercial buildings."

To elaborate, following directions are issued:-

- i) If the distribution transformer is to be installed in a residential/commercial building in an enclosed premises at the Ground Floor, it shall be dry type transformer only.

Superintending Engineer (IT & CRP.)

P. No 6258 dt 13.3.09
JEN (IT/CRP) (S.E.-I) Acctt/Estt/PA

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S.E. (IT & CRP)

- ii) If the distribution transformer is to be installed in a residential/commercial building in the basement of the building or in a floor other than Ground floor of the building, it has to be a dry type transformer only.
- iii) If however the distribution transformer is to be installed in a residential/commercial building at the Ground Floor in the open space i.e. not in an enclosed premises, it can be Dry or Oil filled Distribution transformer.

In order to make compliance of the provisions as stated above, for the prospective applicants requesting for new electrification/ release of connections for residential and commercial buildings, the use of Dry -type transformer is mandatory except in cases where the transformer is installed in an open space in consumers premises.

For Existing connection

For the existing consumers where the Oil Immersed distribution transformer has been located in a closed premises, the consumer is required to either install a Dry Type transformer in place of the existing Oil Immersed transformer or shift the existing transformer in an open space . For tackling this issue, the matter is being examined separately.

For New connection

Based on Discoms and CBIP specification, the requirement of basic electrical parameters viz. no load losses, load losses, percentage impedance etc. to be complied by the users and checked/verified by the Central Testing Laboratory (CTL) of the Nigam for different ratings of "Oil Filled" 11/0.4 KV Distribution transformers are indicated in Annexure-A.

Similarly, the basic electrical parameters, keeping in view the parameters specified by some utilities for few ratings and generally maintainable by the National Level Leading Manufacturers of Dry-type transformers for several ratings, recommended for compliance by the users and to be checked/verified by the CTL are available in Annexure-B.

Accordingly, following procedure is hereby prescribed for checking of electrical parameters for different ratings of transformers to be installed by the applicant's/ prospective consumers:-

- i) The standard electrical parameters of distribution transformers should be informed to the prospective consumer through demand notice (while issuing Demand Notice) with an intimation that the compliance of the parameters will be checked in the CTL of the Nigam at applicant's cost.
- ii) The distribution transformer shall be transported to the CTL by the consumer on recommendations of the concerned AEn (O&M).
- iii) The testing fee shall be deposited by the consumer in the office of Accounts Officer (MM), Jaipur Discom, Old Power House, Jaipur.
- iv) The testing of the transformer will be done at the CTL and after testing the test report shall be forwarded by CTL to the concerned AEn (O&M) and the consumer.
- v) The distribution transformer would be sealed by the CTL and sealing details be mentioned in the Test Report to be sent to AEn (O&M) and the consumer in case the Distribution Transformer conforms to Nigam's specified parameters.
- mm
vi) The tested transformer is to be delivered to the concerned AEn (O&M) by CTL, Jaipur.

Testing Fee for transformer for tests to be carried out at Central Testing Laboratory (CTL)

S. No.	Name of items	Particulars of test	Testing charges in Rs. (Service Tax extra) up to calendar year 2009
1	11/0.4 KV Distribution Transformer up to 250 KVA	i) No load test ii) Full load test iii) % impedance	Rs. 5,290/-
2	11/0.4 KV Distribution Transformer above 250 KVA	i) No load test ii) Full load test iii) % impedance	Rs. 7,935/-
3	33/11 KV Power Transformer 5 MVA rating 3.15 MVA rating	i) No load test ii) Full load test iii) % impedance	Rs. 19,838/-

It is also to clarify that in case the calculated rating of the transformer(s) to be used by the applicant happens to be different, the nearest of higher or lower rating available in annexure will be allowed and chosen.

This is in supersession of earlier Order No.2343 dt.23.9.08 (JPR5-498) issued on the subject.

Encl: Annexure -A&B

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By order,
mny 4.3.2009
(N.M. Sareen)
Chief Engineer (Comml.)

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Basic Electricals parameters for Oil-filled Transformers

Annexure-A

of
JPR5-537

(i) 11/0.4 kVA class

Rating in (KVA)	Maximum no load users (Watt)	Maximum full load Cu. Loss at 75 °C (Watts)	% impedance at 75 °C (tolerance + -10%)	Magnetizing current as % of full load current	
				At 100% rated voltage	At 110% rated voltage
63	180	1235			
100	260	1760	4.5	3.00	6.00
125	305	1855	4.5	2.50	5.00
160	375	2100	4.5	2.5	5.00
200	450	2450	4.5	2.0	4.0
250	530	2850	4.5	2.0	4.0
315	650	3500	4.5	2.0	4.0
400	750	4200	4.5	2.0	4.0
500	900	5000	4.5	2.0	4.0
630	1030	5800	4.5	2.0	4.0
800	1200	8000	4.5	2.0	4.0
1000	1400	10400	5.0	2.0	4.0
1250	1635	11730	5.0	2.0	4.0
1600	2000	14000	5.5	2.0	4.0
2000	2300	19000	6.25	2.0	4.0
			6.25	2.0	4.0
(ii) 33/0.4 kV class					
1000	1800	12000			
1600	2500	16000	5.0	1.5	4.0
2000	3000	21000	6.25	1.5	4.0
2500	3400	28000	6.25	1.5	4.0
3000	3800	34000	6.25	1.5	4.0
			6.25	1.5	4.0
33/11 kV class					
1600	2100	14000			
3150	3000	16000	6.25	1.0	2.5
5000	4000	23000	6.25	1.0	2.5
6300	5400	33000	7.15	1.0	2.5
8000	6100	44000	7.15	1.0	2.5
10000	7200	53000	8.35	1.0	2.5
			8.35	1.0	2.5

Note: 1 Max. Permissible temperature rise above ambient

(A) For Distribution Transformers i.e. 11/0.4 kV class

(i) Winding-50 °C

(ii) Top oil-40 °C

(B) For Power Transformers i.e. 33 kV class

(i) Winding-50 °C

(ii) Top oil-45 °C

2. Thickness of Transformers Tank (rolling tolerance as per IS)

(A) For Distribution Transformers

(i) Top & Bottom: 5.00 mm

(ii) Sides : 4.00 mm

(B) Power Transformers

(i) Top & bottom: 8.00 mm(+2mm for rating more than 5 MVA)

(ii) Sides: 6.00 mm (+2mm for rating more than 5 MVA)

3. The rating under reference or any higher one should have been type tested.

The Manufacturer and applicants/ consumers will be responsible for compliance to the above parameters and conditions.

Basic Electricals parameters for Dry-type Transformers

Annexure-B

of
JPR-5-537

(i) 11/0.4 kVA class

Rating in (KVA)	Maximum no load users (Watt)	Maximum full load Cu. Loss at 75 °C (Watts)	% impedance at 75 °C (tolerance + -10%)	Magnetizing current as % of full load current	
				At 100% rated voltage	At 110% rated voltage
100	400	1800			
160	630	2650	5.00	2.5	4.5
200	680	3000	5.00	2.5	4.5
250	825	3400	5.00	2.5	4.5
315	920	4725	5.00	2.5	4.5
400	1065	5600	5.00	2.5	4.5
500	1160	6600	5.00	2.0	4.00
630	1355	8500	5.00	2.0	4.00
800	1500	10900	5.00	2.0	4.00
1000	1740	11800	5.00	2.0	4.00
1250	1930	13750	6.25	1.5	3.0
1600	2420	15600	6.25	1.5	3.0
2000	2900	16400	6.25	1.5	3.0
(ii) 33/0.4 kV class					
1000	3625	10900	7.00	1.5	3.0
1250	3850	11800	7.00	1.5	3.0
1600	4170	13100	7.00	1.5	3.0
2000	4850	15000	7.00	1.5	3.0
2500	5400	16400	7.00	1.25	2.5
3000	6375	18800	7.00	1.25	2.5
33/11 kV class					
1000	3880	9400	7.5	1.5	3.0
1250	4150	10300	7.5	1.5	3.0
1600	4925	11600	7.5	1.5	3.0
2000	5520	13000	7.5	1.5	3.0
2500	6600	14900	7.5	1.25	2.5
3000	7750	17500	7.5	1.25	2.5

Note: 1. Max. Permissible temperature rise of winding 115 °C
2. Class of Insulation

- (i) Winding conductor: class "C"
- (ii) Other Insulating material: class "H"


3. Only V.P.I. or cost Resin type technology is permissible.

4. The rating under reference or any higher one should have been type tested.

The Manufacturer and applicants/ consumers will be responsible for compliance to the above parameters and conditions.

Copy submitted/ forwarded to the following for information and necessary action:-

1. The Director (Finance), JVVNL, Jaipur (with 45 spare copies).
2. The Director (Technical), JVVNL, Jaipur.
3. The Zonal/Dy. Chief Engineer (Zone/RP), JVVNL, Jaipur/Kota.
4. The Dy. Chief Engineer (MM), JVVNL, Jaipur.
5. The Addl. Supdt. of Police (Vigl.), JVVNL, Jaipur. (with 30 spare copies)
6. The Chief Personnel Officer, JVVNL, Jaipur.
7. The Chief Accounts Officer, JVVNL, Jaipur.
8. The Dy. Chief Engineer / Supdtg. Engineer (Power), RIICO, Jaipur.
9. The Supdtg. Engineer (), JVVNL, _____
10. The Secretary, JVVNL, Jaipur.
11. The Sr. AO/AO/AAO (), JVVNL, Jaipur.
12. The Executive Engineer (), JVVNL, _____
13. The Executive Engineer () alongwith 10 spare copies for sending the same upto AENs/JENs/AROs/Accountants level under his jurisdiction.
14. The Executive Engineer (Elect.), J.D.A./R.H.B., Jaipur.
15. Executive Engineer (Griev.), JVVNL, Jaipur.
16. The Company Secretary, JVVNL/RRVNL, Jaipur.
17. The TA/PA to CMD, RVPN / JVVNL, Jaipur
18. PA to MD, Jodhpur/Ajmer Discom, Jodhpur/Ajmer.
19. P.S. to Hon'ble Energy Minister, Rajasthan, Jaipur.
20. P.S. to Secretary (Energy), Govt. of Rajasthan, Jaipur.
21. The Public Relations Officer, JVVNL, Jaipur.
22. The Media Advisor, JVVNL, Jaipur.
23. Sr. Accounts Officer (FP-5), A.G. Audit, Shed No.14/1 Jaipur.
24. Sr. Accounts Officer (CAW-III), A.G. Audit, Shed No.4/1, Jaipur.
25. The Asstt. Engineer (), JVVNL, _____
26. The Zonal Commissioner, Ombudsman, Mini Secretariat, Near Collectorate, Jaipur.
27. The Supdtg. Engineer (IT & CRP), Jaipur Discom, Jaipur for putting up the order on the website of Discom.
28. _____


Chief Engineer (Comml)