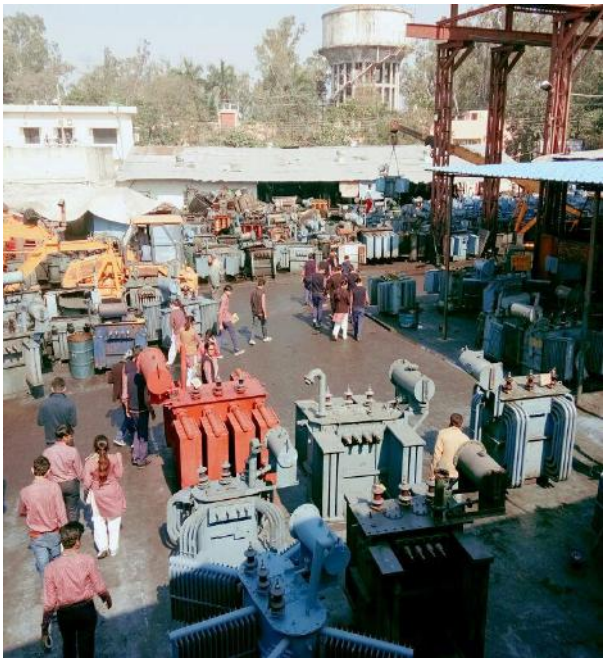
INDUSTRIAL VISIT REPORT

MADHYANCHAL VIDYUT VITRAN NIGAM LTD., LUCKNOW



By : Electrical Engeeniring (IIIRD Year) Students

Assisting Faculty :

- Mr. Pradeep Kumar Verma (Assoc. Prof)
- Mrs. Kitty Tripathi (Assoc. Prof)
- Mr. Sumit Tripathi (Lecturer)

BABU BANARASI DAS NORTHERN INDIA INSTITUTE OF TECHNOLOGY

Industrial Visit :

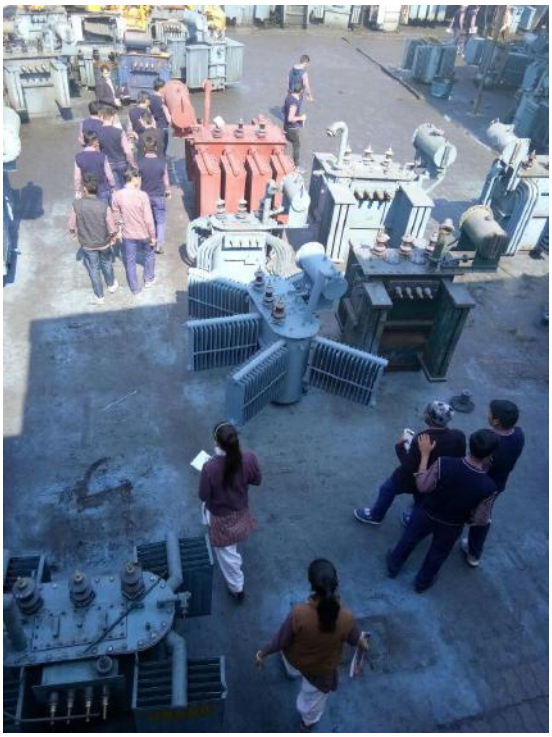
Madhyanchal Vidyut Vitaran Nigam Ltd.
A Government of U.P. Undertaking

Address : Jankipuram Extension, Lucknow, Uttar Pradesh 226021

Dated : Thursday, Feb 15, 2018

OBJECTIVES :

- Learning about different parts used in the distribution transformer.
- To gain practical knowledge of the specifications and arrangements of windings, insulation and transformer oil.
- To observe the testing of transformer and transformer oils breakdown

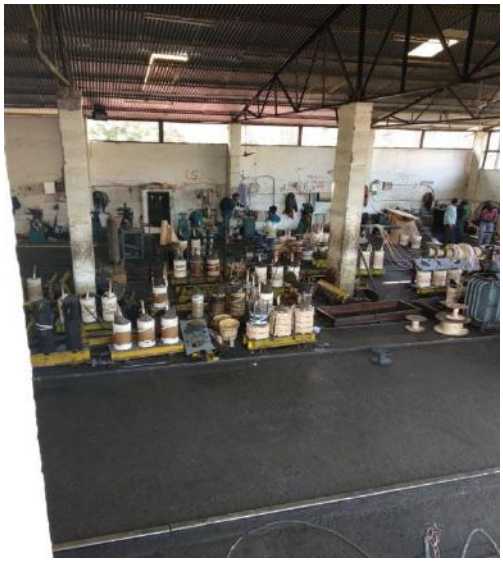


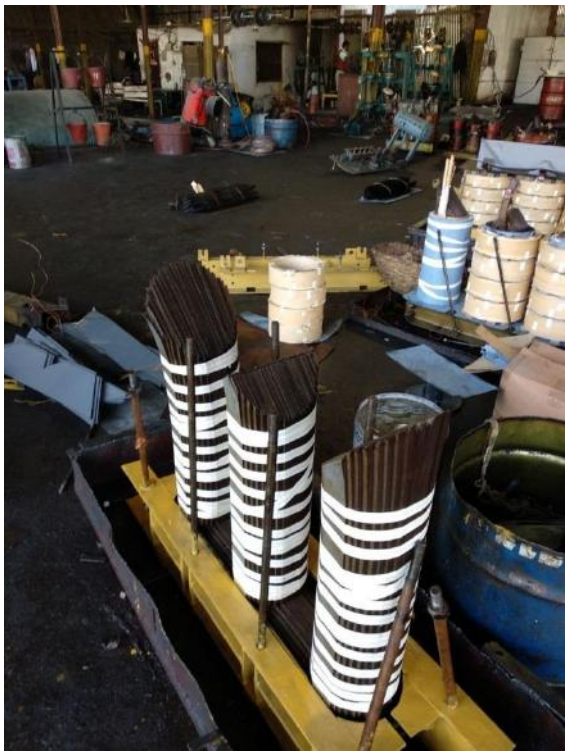

Specifications and Observations :

- Transformer overview: **Bushings**(LV side(Star connected) & HV side(Delta connected)), **Cooling Tubes** ,**Oil Conservator**(3/4th oil filled,1/4th air (can be checked by the scale present in front of conservator) for allowing free expansion of transformer oil during variation of temperature during different loading conditions) ,**Breather** (air filter used for removing moisture from the incoming air by the application of property of silica gel to absorb moisture present in it (requires the moisture to be removed when it changes it color from blue to pink)), **Explosion vent** , Oil replacement tap.

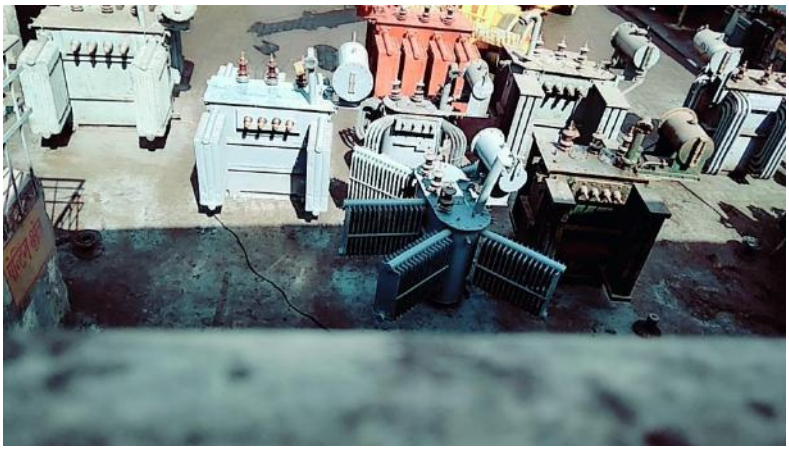

- Job Detached : Consisted of three cores representing each phase of line consisting of HV and LV windings ,HV winding(in form of wires),**LV winding**(***0.5 mm strip***(to increase the cross-section for heavy current loading and hence decreasing resistance and finally heat loss)), **Core**

(made of silicon steel to reduce Hysteresis loss & laminated to reduce eddy current loss), **Megger insulation tester**(high-range resistance meter (ohmmeter) with a built-in direct-current generator(as observed 500 MO)),**Core wash** site.





- Transformer Oil Testing: Transformer oil (***paraffin***) testing through **Motorized Oil Test Set** by auto incrementing voltage between electrodes for the breakdown voltage measurement. Breakdown voltage for **Normal oil** (***93.63***) and **Dirty oil** (***58.83***). Alongside was **refinery** (with ***3000 LPH*** capacity – used for refining the dirty oil for reuse).
- Different Tests On Transformer :



1. High Voltage Testing : Voltage given to **LV side** (***3 KV*** in place of 440V) & for **HV side** (***28 KV*** in place of 11KV) for time **1 min** for the approval for overload bearing in case of faults and instantaneous overloads.
2. DVDF Test : (Double Voltage Double Frequency Test) Frequency supplied 100 Hz .
3. OC & SC Test: (No-load & Full-load test)

SC Test :

630V - 33 A (Ref.) (Ideally)

Observed Values :

V=226 V, I=25.25 A , pf=0.2922, Q=17233, P=52459, S=17975, f=50

OC Test :

250V (Ref.) - 15 A (Ideally)

Observed Values :

V=250 V, I=14.45 A , pf=0.1621, Q=9857, P=1618.2, S=9981, f=50






SPECIAL THANKS :

Special thanks to the **Honorable (Director of BBDNIIT**) **Dr. V.K. Singh**, (**HOD of The EE/EN branch**) **Mr. Rituraj Jalan** , and all the respected faculty of EE branch. Heartfelt thanks to the staff of MVVNL , Lucknow, for their incredible support and the excellent information that they shared with the students.

A truly successful trip for aspiring engineering students like us, that has positively boosted them.

THANK YOU .....