

Elsewedy Transformers  
Attn. Mr A. Zamzamy  
Plot 27, 1<sup>st</sup> District, 5<sup>th</sup> Settlement  
P.O. Box 311  
11853 New Cairo  
Egypt

Tel: +20 1158008489

**Our reference: 72131089**

DNV GL – Energy  
Reporting Office  
KEMA Laboratories, Arnhem

reporting.kemalaboratories@dnvgl.com  
Tel. +31 26 356 2476

**Date: 25 February 2016**

Dear Mr Zamzamy,,

Please find enclosed the hard copy of the signed test protocols 20 MVA transformer.

Yours sincerely,

KEMA Nederland B.V.



Yvonne Kamphuis  
KEMA Laboratories, Arnhem, the Netherlands

**KEMA** Laboratories

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**ELSEWEDY**  
**TRANSFORMERS**

**M.O.M**

In these days from 18 to 21/ 1 /2016 the following tests had been done on ONE transformers  
20 / 13 MVA, 33/13.8 KV  
S/N (024031501)

**In the presence of:-**

Mr. Richard Houtepen  
Mr. Mansour Al Kaaik  
Mr. Abdullah Alghassab  
Mr . Abdullah Mesfer Al Mutairi

**KEMA**  
**SEC**

Eng. Doaa Hegazy  
Eng. Mohamed Khalil  
Eng. Mohamed Nasser

**EL Sewedy Transformers**

**The following tests had been carried out on transformer S/N (024031501)**

**Routine test,**

1. Measurement of winding resistance
2. Measurement of voltage ratio and check of phase displacement
3. Measurement of short-circuit impedance and load loss
4. Measurement of no-load loss and current
5. Dielectric routine tests
6. Tests on on-load tap-changers
7. Leak testing with pressure for liquid-immersed transformers (tightness test)
8. Check of the ratio and polarity of built-in current transformers.
9. Check of core and frame insulation for liquid immersed transformers with core or frame
10. Determination of capacitances windings-to-earth, and between windings.
11. Measurement of dissipation factor ( $\tan \delta$ ) of the insulation system capacitances.
12. Measurement of d.c. insulation resistance each winding to earth and between windings.

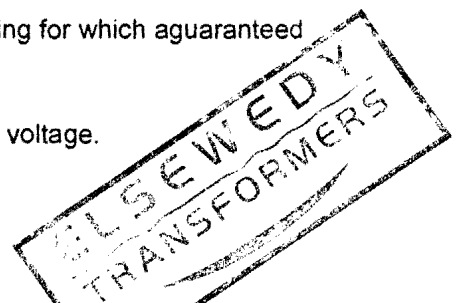


**Type tests**

1. Temperature-rise type test (IEC 60076-2).
2. Dielectric type tests (IEC 60076-3).
3. Determination of sound level (IEC 60076-10) for each method of cooling for which a guaranteed sound level is specified.
4. Measurement of the power taken by the fan and liquid pump motors.
5. Measurement of no-load loss and current at 90 % and 110 % of rated voltage.

**Special tests**

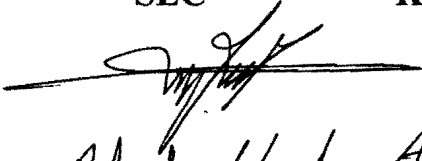
1. Dielectric special tests (IEC 60076-3).
2. Winding hot-spot temperature-rise measurements.



The Transformers Result was Satisfactory

SEC

KEMA

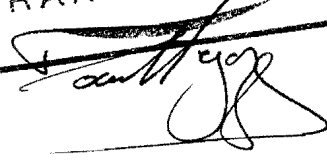
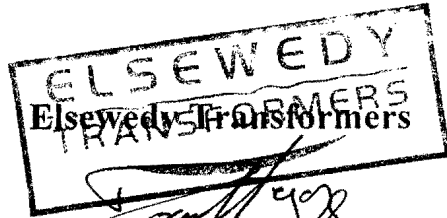


Abdulkhak Alghassab

Abdul Wahid Mesfer



Mansour M. Alkassab



Richard Houtepen

Date: 22/1/2016

KEMA

Labo. et. essai

