

		Procedure No: TA 00034
		Authorised by: G Noble
TITLE: Oil Sampling from COMEM-RIS sealed transformer		
Issue Date: AUG 2015	Revision Date: SEP 2017	Page 1 of 4

1. Purpose

This procedure highlights the method taken when removing oil from transformers that are sealed but have a COMEM-RIS device installed for the purpose of dissolved gas analysis.

2. Scope

- a. Identifying a sealed transformer
- b. Sampling using a the vPump method

3. References

- a. IEC 60567 - Oil-filled electrical equipment – Sampling of gases and of oil for analysis of free and dissolved gases – Guidance
- b. IEC 60599 - Mineral oil-impregnated electrical equipment in service – Guide to the interpretation of dissolved and free gases analysis
- c. IEC 60422 - Mineral insulating oils in electrical equipment – Supervision and maintenance guidance
- d. IEC 60044-1 – Instrument Transformers
- e. AS 1767.1-1999 Insulating liquids - Specification for unused mineral insulating oils for transformers and switchgear
- f. TA 00001 – Job Safety Analysis
- g. accessori-elettromeccanici ris Manual

4. Definitions /Abbreviations

JSA – Job Safety Analysis

Oil – Transformer insulating fluid – usually hydrocarbon based

PPE – Personal Protective Equipment

Tube – Tube designed for sampling oil from transformers complete with fittings

TX – Transformer

vPump – Vacuum pump designed for oil sampling

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5. Health & Safety

General caution, health, safety and environmental protection.

This procedure does not purport to address all the safety problems associated with its use. It is the responsibility of the user of the standard to use appropriate health and safety practices and determine the applicability of regulatory limitations prior to use.

The mineral insulating oils which are the subject of this procedure should be handled with due regard to personal hygiene. Direct contact with the eyes may cause irritation. In the case of eye contact, irrigation with copious quantities of clean running water should be carried out and medical advice sought.

No work shall be carried out without first conducting an OHS study of the task in hand and the appropriate check sheets (TA 0001) filled out.

Transaudit Quick Check

Personal Protective Equipment (PPE) Required						
 Gloves	 Face Masks	 <i>Eye Protection</i>	 Welding Mask	 Appropriate Footwear	 Hearing Protection	 Protective Clothing
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This quick check does not replace Job Safety Analysis TA 0001

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6. Environmental

Our commitment is to ensure that the environment is not damaged through any action that we may take now or in the future. Transaudit will provide the means to limit environmental damage through engineering, substitution or removal of and items or procedures that have the potential to impact the environment. Disposal of waste material, hazardous goods or items which have become contaminated will be done through the appropriate means or through a registered waste disposal company.

7. Procedure

Identifying sealed transformers under vacuum

- a. Identify if the transformer has a breather, silica gel or other device that allows the transformer to breathe to atmosphere. For the sake of this procedure, transformers with separator bags in conservators are deemed to be free breathing
- b. Identify if the transformer has a standard valve system or Trans-Sample coupling. If yes, consult Transaudit Procedure TA00031
- c. If the transformer has a breathing system or a standard valve system, or a Trans-Sample sampling coupling, there is no further need to follow this procedure
- d. Once established that the transformer is a sealed type, check the following:
 - I. Does the transformer have installed a Comem-RIS device. If no or another protection device is installed, no procedure is currently available.
 - II. The winding / oil temperature is greater than ambient
 - III. There is oil showing in the sight glass and of a sufficient level to allow an oil sample to be taken
 - IV. If the transformer has a pressure / vacuum gauge, that the gauge is showing pressure
 - V. Check the RIS wiring. If contacts 41 & 42 are in operation, additional permissions will be required from the owner as there is a risk of trip.
- e. Connect the tube to the transformer at point Cp (refer drawing below). Keep ball valve on the RIS closed.
- f. Connect sample bottle to vPump, ensure tube seal (Ts) is tight and leak free. Replace O-Ring every 10 samples
- g. Cycle the vacuum pump 5-6 times removing all air from sample bottle, tube and connections
- h. Slowly open ball valve on Comem device. Watch float closely for movement. If float starts to drop, close valve and repeat step g. Also check o-rings and check for leaks
- i. Cycle vacuum pump until sample bottle is filled. Close ball valve on RIS
- j. Close RIS ball valve, disconnect and return to normal service

Connection diagram.

