

 Title: Oil sampling from a sealed transformer excluding CTs, VTs and other instrument transformers		Procedure No: TA 00031
		Authorised by: G Noble
Issue Date: March 2013	Revision Date: May 2015	Page 1 of 3

1. Purpose

This procedure highlights the need to ensure precautions are taken when removing oil from transformers for the purpose of dissolved gas analysis.

2. Scope

- a. Identifying a sealed transformer
- b. Using an oil wad to ensure the transformer is under positive pressure

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

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

		Procedure No: TA 00031
Title: Oil sampling from a sealed transformer excluding CTs, VTs and other instrument transformers		Authorised by: G Noble
Issue Date: March 2013	Revision Date: May 2015	Page 2 of 3

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	 Eye Protection	 Welding Mask	 Appropriate Footwear	 Hearing Protection	 Protective Clothing
☐	☐	☒	☐	☒	☐	☒

This quick check does not replace Job Safety Analysis TA 0001

 Title: Oil sampling from a sealed transformer excluding CTs, VTs and other instrument transformers		Procedure No: TA 00031
		Authorised by: G Noble
Issue Date: March 2013	Revision Date: May 2015	Page 3 of 3

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. If the transformer has a breathing system, there is no further need to follow this procedure
- c. Once established that the transformer is a sealed type, check the following:
 - I. The winding / oil temperature is greater than ambient
 - II. There is oil showing in the sight glass and of a sufficient level to allow an oil sample to be taken
 - III. If the transformer has a pressure / vacuum gauge, that the gauge is showing pressure
- d. Connect the tube to the transformer, open ball valve on the tube
- e. Fill the tube with clean transformer oil and remove trapped air by tapping tube
- f. Close the ball valve
- g. Place finger over the end of the tube
- h. Open the valve on the transformer slightly
- i. Using the ball valve on the tube, slowly open and closely watch the oil in the tube for movement either toward the transformer or away from the transformer
- j. If oil moves away from the transformer, sampling can continue as per normal
- k. If oil moves toward the transformer, close valves as this transformer cannot be sampled until core temperature increases and puts the transformer into pressure