

## GENERAL PROCEDURE



**PACIFIC CREST**  
TRANSFORMERS

To: **Pacific Crest Customer**

Date: **15 July 2011**

Subject: **DGA Oil Syringe sampling procedure**

### **Follow local site safety regulations and de-energize the transformer as applicable.**

Locate the Pressure vacuum gauge on the transformer tank and confirm the transformer pressure has a positive pressure before beginning the oil sampling procedure below.

- It is not possible to take an oil sample if the gauge reads negative pressure.
- It may be necessary to add dry nitrogen to increase the pressure to about 1.0 lb positive pressure.
- Oil sampling should be done in good weather conditions to avoid moisture contamination.

### **Using the following instructions to take an oil sample using a syringe (photos showing the process in appendix):**

1. Locate the lower drain valve with sampler as provided with your transformer.
2. Put an absorbent towel or rag underneath the valve before beginning.
3. Check the main valve handle is closed tightly to the right (clockwise).
4. Remove the sampler valve protective cap.
5. Install Tygon hose onto the sampler fitting.
6. Loosen the sampler nut fitting.
7. Connect the hose to the syringe with valve nipple pointing down.
8. Train the hose with syringe into waste oil bucket and turn main valve handle counter clockwise until oil begins to flow into bucket.
9. Flush up to one quart of oil into bucket.
10. Turn the syringe three-way valve and depress the handle towards the hose end removing the dry air from inside the syringe.
11. Turn the valve to allow the oil to start flowing into the syringe. Hold backpressure against the handle until the oil reaches 1/16" past the last gradient mark on the syringe body.
12. Flush the syringe three (3) times completely and then push the oil back into the waste oil container.
13. Turn the valve and flush the fluid from the syringe.
14. Continue to push the fluid from the syringe into the oil waste container and purge any air bubbles. Sometimes it is necessary to hold the syringe (hose end) upwards.
15. Turn valve for the final filling of the syringe.
16. Shut off lower drain valve handle when the oil sample process is completed.
17. Tighten the sampler-fitting nut.
18. Replace and tighten the protective cap.
19. Be sure the valve handle is closed and tight completely to the right (clockwise).
20. Clean up as necessary.
21. Re-energize the transformer, if applicable.
22. Send sample to lab for processing.

## GENERAL PROCEDURE

### Materials required:

- Absorbent towels or rags
- Tygon hose
- Waste oil bucket
- Oil sample Syringe (clean and sealed)
- Lab sampling document for recording transformer information
- Crescent wrench or equivalent open end wrench

## APPENDIX



Locate lower drain valve with sampler fitting. Check valve handle and be sure it is closed



Put absorbent cloth or rag underneath work area. Layout tools and materials needed before beginning.



Remove protective cap on sampler cap to expose the fitting.

## GENERAL PROCEDURE



Loosen sampler fitting about two turns prior to installing the hose.



Connect hose to syringe three way valve and aim into waste bucket.



Open valve handle (counterclockwise).



Turn three way shut off valve to allow the fluid to drain into bucket.



The oil is draining into waste bucket to flush contamination.

## GENERAL PROCEDURE



Flush up to one quart of oil into bucket.



Turn valve and purge dry air from inside the syringe toward the hose end.



Turn valve to allow the transformer oil to begin filling the syringe. Complete this process three times(3).



Flush the syringe three (3) times completely as shown



Turn the valve and flush the fluid from the syringe as shown.



Hold backpressure against the syringe plunger as it fills to 1/16" past the last gradient mark.

## GENERAL PROCEDURE



Continue to push the fluid from the syringe into the oil waste container and purge any air bubbles. Sometimes it is necessary to hold the syringe (hose end) upwards.



Clean off oil and install protective cap.



Turn valve for the final filling of the syringe



Close drain valve handle (clockwise). Close sampler fitting into the closed position tighten with wrench and remove hose.



Removing the hose after the valve is closed.



Hold hose vertically over the waste oil bucket and drain remaining oil from the hose.

## GENERAL PROCEDURE



Confirm the valve handle closed (clockwise) and the sampler protective cap is tight



Visually inspect the oil inside the syringe sample confirming that no air bubbles exist



If necessary, turn valve and carefully remove any air bubbles.



Valve shown in closed and locked position (ready to package).



Final inspection of the valve to confirm the valve handle is tight and the area is dry.