

Electricity Policy Document 425

Issue 2 June 2022

Policy for the Decommissioning of Fluid Filled Cables



Amendment Summary

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Issue 2 June 2022	EPD updated to new template Policy rewritten to reflect latest procedure of using Hydrogel Purging Compound Prepared by: P Howell Approved by: Policy Approval Panel and signed on its behalf by Steve Cox, DSO Director

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1 Introduction

When a fluid filled cable is no longer required, it needs to be decommissioned in an environmentally sound and economically viable manner. This may involve complete removal of the cable, but it is more likely that the cable will be left in situ and rendered environmentally and physically safe by removal of the insulating oils to prevent any leakage into surrounding land and water courses.

2 Scope

This EPD sets out policy for decommissioning works on all Electricity North West redundant fluid filled cables. The policy applies when a cable has reached the end of its life or otherwise becomes redundant on the network.

3 Policy

The redundant fluid filled cable shall be decommissioned as described below.

Consideration shall be given if it is both economically and environmentally feasible to completely remove the cable and associated assets.

However, in practice this is not always the best overall environmental option and it is not always practical to achieve unless the cable is being directly overlaid in open trench with new cables.

If the cable is to be left in situ, then a procedure shall be employed using Hydrogel Pusher compound.

Hydrogel is a cross-linked PVA molecular compound that can be used to “push” all grades of oil-based products from confined areas such as cables, and then later be easily split into separate phases for oil and pusher compound. The recovered oil is uncontaminated by the process and can be safely re-cycled at a suitable oil processing site.

Due to the specialist nature of the materials and techniques used, it can only be carried out by an approved contractor who possesses the necessary skills and experience.

The procedure is as follows;

- (a) The cable joints and ancillary equipment are removed by multiple excavations to allow access to cable ends as required.
- (b) The oil is then removed from the cable by purging using a Hydrogel pusher compound introduced at a suitable joint bay or sealing end position.
- (c) The purged waste oil and Hydrogel pusher compound is collected at the opposite end of the cable into a suitable holding tank, then separated and disposed of by a licensed operator to a licensed disposal site.
- (d) The operation of purging shall be carried out several times. The time taken for this phase of the fluid-removal process is dependent on cable length, type of cable, etc.

- (e) Samples should be taken after each purging operation to check for oil content. The system shall be left overnight unpressurised to allow insulation oil to migrate from the papers into the oil line and conductors, and then the purging process re-started.
- (f) When no visible oil is found in samples being recovered, the Hydrogel flushing process can be stopped.
- (g) Following the satisfactory removal of oil, a suitable Hydrocarbon degrading bacteria solution shall be pumped into the cables using the same process as the oil purging operation. Once the solution has been thoroughly circulated through the cables, it shall be left overnight to soak into the papers.
- (h) The cables are then blown through with low pressure compressed air to remove any Hydrocarbon degrading bacteria solution, then allowed to naturally drain for several hours.
- (i) The cable shall be capped off in the approved manner at both ends and left in situ. No further monitoring is required after this point. (Note that the position of the redundant cable will have been logged on asset records as appropriate.)

4 Approved Contractors

The following company is approved for carrying out the purging and cleaning operation on fluid filled cables;

AES Cables

Registered Address;
Unit 20,
Hopewell Business Centre,
105 Hopewell Drive,
Chatham,
Kent,
ME5 7DX

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5 Keywords

Fluid Cable; decommissioning; disposal; oil