DISTRIBUTION COMMISSIONING TEST SHEET – HIGH VOLTAGE CABLES AFTER REPAIR OF OBVIOUS FAULTS
HPC-4DL-07-0006-2014

This commissioning test sheet covers the minimum testing requirements for high voltage cables prior to energisation after repair of an obvious fault.

NOTE: If the cable itself failed without obvious cause such as; an internal fault, repair involves a transition joint, the cable has a history of repeated faults, the cable cannot be remotely energised or is not protected by HV fuses, the cable is of strategically high importance such as a main feeder for the CBD area or hospital, major alteration or major repair work undertaken (e.g. Replacement of significant cable length), or the cable does not meet the minimum insulation resistance as per Table (below), additional HV testing must be carried out.

SAFETY: At all times maintain suitable clearance to all other electrical equipment and verify planned escape routes.
In preparation for the tests, wherever possible, disconnect the cable from the equipment on both sides and make the area safe. If cable cannot be disconnected ensure that the equipment connected to cable will not be affected. If the end side of the cable cannot be positively isolated, a second person should stand guard at the end of the cable during tests and a two-way radio must be used for communication.

DATE:		**Project No.:**		**Name of Officer**	
Test Site:					
Location of Cable:	**From:**			**To:**	

1. CABLE DESCRIPTION

Rated Voltage	kV	Length of cable (approx.)	m		
Cable size	mm^2	Stock code		Cable function	Transformer cable ☐ Feeder cable ☐

2. VISUAL INSPECTION AND SAFETY CHECK

1	Check that the cable is correctly installed and that there is no physical damage to the cable or equipment.	☐
2	Check the supply to the cable, that it is switched off and isolated as per switching program and permit.	☐
3	Confirm that the correct cable is de-energised (with approved testing device).	☐
4	Ensure that the earth system is complete, undamaged and bonded to earth points.	☐
5	Check that the cable is clearly marked with each phase colour and labelled (if applicable).	☐
6	Ensure the surge arrestors are disconnected from the cable terminations (if applicable).	☐

3. INSULATION RESISTANCE TEST

Use a 5 kV insulation resistance tester for 1 to 10 minutes (subject to the length of the cable) or until the reading is stable, between each phase conductor and the corresponding cable screen.

(Note: 1,000 MΩ = 1 GΩ)

Test Connection	Minimum Values	Test Results
Red phase to (white & blue) & earth/screen	See table below	Ω
White phase to (blue & red) & earth/screen		Ω
Blue phase to (red & white) & earth/screen		Ω

Typical values for cable lengths not exceeding 1 km are:

Cable Type	Typical Insulation Resistance Result @ 5 kV	Minimum Insulation Resistance Result @ 5 kV
PILC belted 6.6 kV	500 MΩ	200 MΩ
PILC screened 11 kV	2,000 MΩ	500 MΩ
PILC screened 22 kV	3,000 MΩ	1,000 MΩ
XLPE	5,000 MΩ	1,000 MΩ

The difference in insulation resistance values between phases should not exceed 30% unless insulation resistance values are very high such as 10,000 MΩ. Depending on the cable length, age and type of termination as well as weather conditions, considerably lower insulation resistance may result. In this case where possible disconnect, clean and dry cable terminations and repeat test. Lower values are acceptable provided that the cable can withstand the recommended test voltage (Contact AMS Engineer for advice if in doubt).

Confirm cables have been discharged after each test.	☐

4. CABLE TERMINATION CHECKS

Ensure all cable connections and terminations are made and tightened to the manufactures required standard.	☐
Ensure all cables are clearly and correctly labelled.	☐

5. OPERATIONAL HANDOVER

The commissioning officer must ensure that all checks are completed and the test results comply with the minimum standards.

I hereby certify that all sections have been completed with satisfactory results and transfer responsibility to the network operating authority. This equipment is ready to be **SAFELY** energised.

Commissioning Officer: _____ Pay Number: _____

Signature: Date: DD/MM/YY Time: HH:MM

1. Ensure the work area is left tidy with no hazards to the public.
2. Hand over responsibility to the operating authority
3. Return this sheet to the project/working file as a record of commissioning and as a document required for the Handover Certificate.

IMPORTANT: PLEASE ATTACH AS-BUILT DRAWINGS AND DATASHEETS TO THIS SHEET AND SEND TO RELEVANT ASSET MANAGER