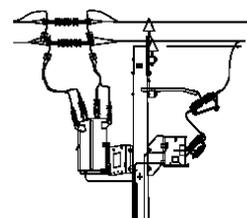


DISTRIBUTION COMMISSIONING FORM 4.11 – Noja Pole Mounted Automatic Control Recloser



Purpose: This form covers the testing and commissioning of all replacements or new installations of NOJA pole mounted automatic control reclosers before energisation.

For more information refer to the Distribution Commissioning Forms Guideline (EDM 34137510)

Notes: The following tests must be carried out after installation and before the recloser is put into service.

Address/Pole No.			
Work Package No.		Test Site/Location:	

1. Pre-Installation Check

Earth resistance test	Ensure that the earth resistance test (DCF 4.1) has been completed with acceptable results (<30 Ω) prior to commissioning.		
Voltage rating kV	Recloser rating	kV	Supply transformer
			kV

2. Insulation Resistance Test (for a Single Phase Recloser)

Use a 5kV insulation resistance tester. Measure the resistance after one minute of testing. Put the test recloser in the OFF (open contact) position. Operate the manual trip level if required.	Bushings	Test Results	Acceptable Results
	Between contacts 1 & 2	MΩ	Not less than 100 MΩ
	Short-circuit all bushings and test simultaneously to tank.	MΩ	

3. Insulation Resistance Test (for a Three Phase Recloser)

Put the test recloser in the OFF (open contact) position. Operate the manual trip lever if required. Use a 5kV insulation resistance tester. Measure resistance after one minute of testing.	Bushings	Test Results		Acceptable Results
	Supply side	A red to B white	MΩ	Not less than 100 MΩ
		B white to C blue	MΩ	
		C blue to A red	MΩ	
	Load side	R red to S white	MΩ	
		S white to T blue	MΩ	
		T blue to R red	MΩ	
	Between contacts	A red to R red	MΩ	
		B white to S white	MΩ	
		C blue to T blue	MΩ	
Short-circuit all bushings and test simultaneously to tank.	Bushings to tank	MΩ		
Contact continuity test to be done with the recloser in the CLOSED position.	A to R	Ω	0Ω (hard down)	
	B to S	Ω		
	C to T	Ω		

4. Installation Check

Recloser	Check the recloser for damage, tank, bushings, cracks in boots and excessive dirt.	
	Ensure the bushing palms and the lugs have the correct torque: All connections x 40Nm	
	Check that all the HV lightning arresters have bird caps fitted and are tightened correctly.	
	The construction complies with the distribution construction standards and applicable design drawings.	
Structure	The anti-climbing guards and danger plate are fitted and correctly numbered.	
	Check that all the connections (including the recloser and control cabinet) are properly connected and bonded to earth.	
	The maximum separation between the down earth and the recloser umbilical cable.	
Control cabinet	The 240V white thermal plastic sheath is continuous up to the circuit breaker and stripped minimally to terminate the active and neutral conductors. The earth in the thermal plastic sheath cable can be cut as it need not be connected.	
	The antenna surge diverter is fitted at the base of the control box.	
Antenna	The antenna is aligned to the correct bearing (applicable to radio communications only) and installed correctly, with elements vertical and drain hole down. Antenna pole brackets with open slotted fixing holes are not permitted.	

5. Energisation

Energisation	Remove all bypass jumpers, if applicable.	
	Ensure that the switch is in the correct position (open or closed) as outlined in the switching program or network configuration.	
	Energise the switchgear as outlined in the switching program and network configuration.	
	Phase out under Network Operations switching schedule at a normally open point such as a pole-top switch.	
	Disable/disconnect the communication device (radio, etc.).	
	For testing purposes, use an effective earthed reference point spaced more than two metres from any electrically conductive object embedded in the ground.	
	Energise the control box and conduct a polarity test on the 240V supply.	
	Check and ensure that the control unit indication matches the switchgear status.	

6. Handover of Responsibility for the Completion of Items 1-5

I hereby certify that items 1 to 5 have been completed with the above results and transfer control to the network operating authority.			
Tested by		NAC	
Signature		Date & Time	

1. Lock the control unit doors using (NMK2) padlocks. NK6 padlocks must not be used.
2. Attach an 'Out of Service' warning tag to the padlock on the front of the control cabinet.
3. Inform Network Operations of the status of the switchgear.
4. Ensure the work area is left tidy with no hazards to the public.
5. Hand over responsibility to the Asset Operations/Operation Maintenance (Primary Response) for the commissioning of alarms and remote controls.

7. Alarm and Control Testing

Setting the controller	Electronic Network Access Request (eNAR) number:	
	Ensure the correct controller firmware is used.	
	Ensure that all the indications from the controller are normal.	
	Ensure all the required settings have been installed.	
Perform the following tests in coordination with Network Operations	Name of the network operations controller assisting the commissioning:	
	Enable/connect the communication device (radio, etc.).	
	Check that all the alarms and controls tested to Network Operations indicate a successful communication.	
	Phase fault, earth fault and sensitive earth fault detection settings have been recorded by the network controller.	
	Ensure the analogues (I, V, kW & kVAR) have been recorded by the network controller.	
	Check operation.	
	Remove the 'Out of Service' warning tag from the padlock on the front of the control cabinet.	

8. Handover of Responsibility

I hereby certify that all items have been completed with satisfactory results and transfer control to the network operating authority.			
Commissioned by		NAC	
Signature		Date & Time	

1. Ensure the work area is left tidy with no hazards to the public.
2. Hand over responsibility to Network Operations.
3. Return this form to the project file folder and file as a record of commissioning.
4. After the on-site project officer signs off on the DCF, a scanned copy of the DCF must be attached to the relevant project documentation.