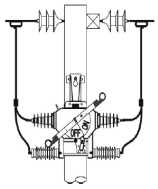
DISTRIBUTION COMMISSIONING FORM (DCF) 4.2 – Nu-Lec load break switch/sectionaliser



Purpose: This form covers the testing and commissioning of all replacements or new installations of a Nu-Lec load break switch (LBS)/sectionaliser 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 switch/sectionaliser is put into service.

Address/Pole No.			
Work Package No.		**SPIDAWeb Pick ID:**	

1. Pre-Installation Checks

Earth resistance test and LBS nameplate	Ensure that the earth resistance test (DCF 4.1) has been completed with acceptable results (<30 Ω) prior to commissioning.	
	Ensure that the switch rating matches the system voltage (RL27 for 11 & 22 kV stock code GS6016; RL38 for 33 kV stock code GS0131).	

2. Installation Check

Sectionaliser	Check for damage; tank, bushings, cracks in boots and excessive dirt.	☐
	Ensure the bushing palms and the lugs are correctly fitted and are tightened.	☐
	Check that all the HV lightning arresters are correctly fitted and are tightened.	☐
Structure	Check that the construction complies with DCSH. All components correctly attached, bolts tightened, checked by other crew members	☐
	Check that the anti-climbing guards and danger plate are fitted and correctly numbered.	☐
	Check that all the connections (including the LBS and control cabinet) are properly connected and bonded to earth.	☐
	Check that the antenna surge diverter is fitted at the base of the control box.	☐
Control cabinet	Check that control wiring cable is secure, and the supply wiring is correctly connected.	☐
Antenna	Check that the antenna is aligned to the correct bearing (applicable radio comms only) and installed correctly (with elements vertical and drain hole down). Antenna pole brackets with open slotted fixing holes are not permitted.	☐

3. Insulation Resistance and Continuity Test

Test Type	Contact Position	Test Results		Acceptable Results
Insulation resistance test Use a 5 kV insulation resistance tester. Measure resistance after 1 minute of testing.	Closed position (Check indicator position.)	I red to II white	MΩ	Not less than 100 MΩ
		I red to III blue	MΩ	
		I red to tank	MΩ	
		II white to III blue	MΩ	
		II white to tank	MΩ	
		III blue to tank	MΩ	
	Open position (Check indicator position.)	I red to X red	MΩ	Not less than 100 MΩ
		II white to XX white	MΩ	
		III blue to XXX blue	MΩ	

Continuity test Use an insulation resistance tester.	Closed position (Check indicator position.)	I red to X red	MΩ	0 MΩ
		II white to XX white	MΩ	
		III blue to XXX blue	MΩ	

4. Energisation

Energisation	Ensure that all working earths and programmed earths are removed (if applicable).					
	Conduct a **phase-out test** under Network Operations switching schedules if the conductors on both sides of the switch are energised from different feeders. Use appropriate HV phasing devices to ensure that phases on the left side of the switch are in phase with those on the right side of the switch.	Connections		**In Phase?**		
		Red	Red	Yes ☐	No ☐	
			White	Yes ☐	No ☐	
			Blue	Yes ☐	No ☐	
		White	Red	Yes ☐	No ☐	
			White	Yes ☐	No ☐	
			Blue	Yes ☐	No ☐	
		Blue	Red	Yes ☐	No ☐	
			White	Yes ☐	No ☐	
			Blue	Yes ☐	No ☐	
	Ensure the switch is in the correct position (open or closed) as per the switching program or network configuration.					☐
	Energise the switchgear as per the switching program and/or network configuration.					☐
	Remove all bypass jumpers (if applicable).					☐
	Disable or disconnect the trip and close coils, comms device (radio etc.).					☐
	Energise the control box and conduct a polarity test on the 240 V supply and the 240 V surge arrester.					☐
	Ensure that the control unit indication matches the switchgear status.					☐
	Check for any signs of abnormality.					☐

5. Handover of Responsibility for the Completion of Items 1-4

I hereby certify that items 1 to 4 have been completed with the above results and transfer control to the network operating authority.			
Commissioned by		BNA	
Signature		Date & Time	

1. Lock the control unit doors using two approved (NMK2) padlocks. NK6 padlocks must not be reused.
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 Field Services (Primary Response Group) for the commissioning of alarms and remote controls.

6. Alarm and Control Testing

Setting the controller	Secondary Distribution Network Access Request number:	_____
	Ensure that the correct controller firmware is used.	☐

	Ensure that all the indications from the controller are normal.	☐
	Ensure that all the required settings have been installed.	☐
Perform the following tests in coordination with NOCC:	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 NOCC have been successful.	☐
	Ensure that the phase fault, earth fault, and sensitive earth fault detection settings have been recorded by the network controller.	☐
	Ensure that the analogues (I, V, kW & kVAR) have been recorded by the network controller.	☐
	Enable/connect the trip and close coils and check operation.	☐

7. Handover of Responsibility

I hereby certify that item 6 has been completed with satisfactory results and transfer control to the network operating authority			
Commissioned by		BNA	
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. The completed form must be returned to the project file/work pack.