

Pre-Commissioning High Voltage Inspection Certificate – Minor Works

Project Title:

The following actions are as prescribed in the relevant High Voltage sections of 220S007B *Network Equipment Commissioning Standard – Part B*

1. Check off (✓) each of the following tests as indicated when they have been completed.
2. Note any outstanding defects on the defect form as appropriate and attach to the inspection certificate.
3. Sign and date this certificate and present the completed document to the *Field Switcher* at site to demonstrate that the equipment is ready to be commissioned.
4. **Retain a copy of this form** on your files but also **send the original to Powerco** as prescribed in 360S014 *Electricity As-Built Reporting Standard*.
5. **Note: Low Voltage (LV) commissioning works shall be recorded on the applicable LV Commissioning / Testing Certificate 220F028B, 220F028C, 220F028D, 220F028E, 220F028F or 220F028G**

| Note: Refer to Standard 220S007B and the summary of pre-commissioning tests and checks for further explanation of the test types required refer to Pages 3 and 4. | | High Voltage | | | | | | | | | | | | |
|--|---|------------------|----------------|-----------------------|-----------------------|---------------|--------------------|------------------------------|---------------|---------------|------------------|--------------------------|------------------------|-----------------|
| | | Air Break Switch | Surge Arrestor | O/H Distribution Line | O/H Sub-Tran' s. Line | Line Recloser | Voltage Regulators | Ground Mounted HV Switchgear | HV U/G Cables | LV U/G Cables | HV Metering Unit | Distribution Transformer | Pole Mounted Capacitor | Radio Equipment |
| Visual Checks | Equipment "Fit For Service" Certificate | | | | | | | | | | | | | |
| | Contact Alignment | | | | | | | | | | | | | |
| | Jumpers and Connections - Integrity | | | | | | | | | | | | | |
| | Busbars, Connections, Etc. Covered | | | | | | | | | | | | | |
| | Insulators / Bushings Correct | | | | | | | | | | | | | |
| | Conductor Terminations & Binders | | | | | | | | | | | | | |
| | Animal Access Barriers | | | | | | | | | | | | | |
| | RI Mitigation | | | | | | | | | | | | | |
| | Correct Fusing | | | | | | | | | | | | | |
| | Earthing and Bonding | | | | | | | | | | | | | |
| | Conductor Clearances | | | | | | | | | | | | | |
| | Labelling and Notices | | | | | | | | | | | | | |
| | Security and Access | | | | | | | | | | | | | |
| | Radio Equipment Visual Checks | | | | | | | | | | | | | |
| | Equipment Correctly Installed and Constructed | | | | | | | | | | | | | |

Note: *This 220F028A Certificate is incomplete without completing the remaining checks/tests for Operation, Performance and other on the following Page /2*

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Version 4 – 220F028A
Date Issued 10 July 2025

Note this HV Certificate is incomplete without the preceding list of Visual checks listed on Page 1

| Note: | | High Voltage | | | | | | | | | | | | |
|-------------------|-----------------------------------|------------------|----------------|-----------------------|---------------------|---------------|--------------------|------------------------------|---------------|---------------|------------------|--------------------------|------------------------|-----------------|
| | | Air Break Switch | Surge Arrestor | O/H Distribution Line | O/H Sub-Trans. Line | Line Recloser | Voltage Regulators | Ground Mounted HV Switchgear | HV U/G Cables | LV U/G Cables | HV Metering Unit | Distribution Transformer | Pole Mounted Capacitor | Radio Equipment |
| Operation | Manual Operation | | | | | | | | | | | | | |
| | Automatic Operation | | | | | | | | | | | | | |
| | Protection Systems | | | | | | | | | | | | | |
| | Indications & Control | | | | | | | | | | | | | |
| Performance Tests | Contacts Timing | | | | | | | | | | | | | |
| | Auxiliary Supplies | | | | | | | | | | | | | |
| | Earth & Bond Resistance | | | | | | | | | | | | | |
| | Phasing | | | | | | | | | | | | | |
| | Phase Rotation | | | | | | | | | | | | | |
| | Polarity | | | | | | | | | | | | | |
| | Conductor Continuity | | | | | | | | | | | | | |
| | Screen/Sheath Continuity | | | | | | | | | | | | | |
| | Insulation Resistance | | | | | | | | | | | | | |
| | Hi-Pot | | | | | | | | | | | | | |
| | Liven Under Test | | | | | | | | | | | | | |
| | Voltage Level Test | | | | | | | | | | | | | |
| | Radio Equipment Performance Tests | | | | | | | | | | | | | |
| QA | Construction Standards | | | | | | | | | | | | | |
| | Safety Standards | | | | | | | | | | | | | |
| Doc. | As Build Info Recorded | | | | | | | | | | | | | |
| | Defects Recorded | | | | | | | | | | | | | |
| Other | (Specify) | | | | | | | | | | | | | |
| | (Specify) | | | | | | | | | | | | | |
| | (Specify) | | | | | | | | | | | | | |

Pre-Commissioning High Voltage Inspection Certificate – Minor Works

Work Team Leader Name: _____

Signed: _____

Competency Cert No: _____

Date: _____

I as the *Work Term Leader* confirm that the equipment at the above site has passed all its pre-commissioning checks and tests and is fully functional and is now ready to be livened and operated as part of the network.

Field Switcher Name: _____

Signed: _____

I as the *Field Switcher* confirm that I have sighted the completed pre-commissioning check sheet and I am satisfied that the equipment is now ready to be livened and operated as part of the network.

SIN (NAPA ID) _____

A brief summary of the tests and checks that are required to be completed to this Certificate (i.e., on Pages 1 and 2 inclusive) is provided in the following tables.

| Tests / Checks | | Reference | Requirements / Description |
|----------------|---|--------------------|---|
| Visual Checks | Equipment "Fit For Service" Certificate | 393S013B | All equipment: poles, crossarm's, insulators, switchgear, transformers, etc., have been tested and are approved for use on Powerco's networks. This applies to new, used and refurbished equipment. |
| | Contact Alignments | 393S053 | Check that all contacts and arc horns are correctly adjusted as per Appendix 1 of 393S053 |
| | Jumpers & Connection Integrity's | 393S070 | All jumpers and connectors have been selected, installed and tightened correctly. |
| | Animal Access Barriers | | Equipment suitably protected from ingress and damage from rodents, birds, opossums, etc. |
| | RI Mitigation | | Appropriate measures taken to avoid radio interference issues |
| | Correct Fusing | 393S024 | Fuse protects device and coordinates with upstream fuses |
| | Earthing and Bonding | 393S017 | Equipment effectively bonded to earth. Equipotential bonding point built into poles. |
| | Conductor Terminations / Binders | 393S013B | Overhead conductor terminal fittings and binders are compliant with materials and equipment prescribed in 393S013B and its associated standards |
| | Conductor Clearances | NZEC34 393S008 | All conductor clearances meet minimum requirements |
| | Labelling and Notices | 393S004 | All equipment and operating mechanisms are labeled appropriately, and danger/warning notices attached. |
| | Security and Access | 393S070 393S011 | All doors and cubicles are closed and locked and secured against accidental or unauthorized access. No unauthorised access to overhead line structures. HV and LV cable terminations covered |
| | Radio Equipment Visual Checks | | RFS certification, correct installation of DC supply system, serial / Ethernet cabling, coaxial antenna cabling, surge arresters fitted, antenna fixing and bonding. |
| | Equipment Correctly Installed / Constructed | | Equipment construction / installation complies with site construction drawings. |
| Operation | Manual Operation | | All manual operations can be carried out reliably and in accordance with Manufacturer's operating instructions. |
| | Automatic Operation | | All automatic operations are initiated and operate correctly |
| | Protection Systems | | Protection systems are triggered and operate correctly |
| | Indications & Control | | All local and remote controls and indications operate correctly and accurately. |

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Version 4 – 220F028A
Date Issued 10 July 2025

A brief summary of the tests and checks that are required to be completed to this Certificate (i.e., on Pages 1 and 2 inclusive) is provided in the following tables

| | | | |
|-------------------|-----------------------------------|---------------------|---|
| Performance Tests | Auxiliary Supplies | | Check all auxiliary supplies supply correct voltage / current. |
| | Earth and Bond Resistance | 393S017 | Perform earth test to check that the local earth resistance is less than the minimum requirement (10 ohms unless specified otherwise) for equipment and overhead line structures. |
| | Phasing | 393S010 393S011 | Check that each conductor is in phase before connecting |
| | Phase Rotation | AS/NZS 3017 | |
| | Polarity | 393S011 | Positive identification of all phase conductors |
| | Conductor Continuity | | Acceptable test results |
| | Screen/Sheath Continuity | 393S011 | Bonding correct, acceptable continuity |
| | Insulation Resistance | | Insulation resistance (Megger) test to 5 kV dc for one minute |
| | Hi-Pot | 220S007B | Hi-Pot test results to be within acceptable limits. |
| | Radio Equipment Performance Tests | | Modulation test, RF power emitted test, current draws tests, SWR test. |
| QA | Construction Standards | 393S009 and 393S010 | Equipment constructed and installed in accordance with appropriate Powerco construction standards and Electricity Regulations. |
| | Safety Standards | | Equipment constructed and installed in accordance with appropriate Powerco safety standards. |
| Doc. | As Build Info Recorded | 360S014 | All required as-build information (including asset and device details) collected and recorded |
| | Defects Recorded | 220F030 | Defects items recorded on defect form and attached to inspection certificate. |
| Other | (Specify) | | |
| | (Specify) | | |
| | (Specify) | | |

For more detailed information regarding the tests and checks, refer to the appropriate equipment category in Powerco's 220S007B Network Equipment Commissioning Standard – Part B