

1. Purpose

The purpose of this commissioning standard is to confirm that the Manual Gas Switch goes into service reliably and safely.

2. Description of applicable equipment

Overhead line, manual (pole mount) SF6 gas switch.

3. Tests required

- Continuity test
- Megger Insulation Test
- Earth test (if applicable)

4. Tools and Equipment

- Continuity tester
- 5kV Megger
- Earth resistance tester
- DC Test Unit

5. Test Procedures

Ensure correct Operational authorities are issued by an authorised operator prior to starting any tests

5.1. Continuity test

- When the switch is in the CLOSED position confirm that the contacts are closed by checking continuity on all three phases.
- When the switch is in the OPEN position confirm that the contacts are open by checking continuity on all three phases.

5.2. Megger test

- Check each contact to every other contact with the switch in the open position.
- Close switch, check each phase to earth.

5.3. Earthing test

Conduct earth resistance test as per current earthing test procedures.

6. Test Result Pass Criteria

When recording these values, an accurate measurement must be recorded. Values with ranges (e.g. 55+MΩ) will not be acceptable. The test results will form the baseline for future maintenance purposes.

| Test type | Test Result |
|------------------------------------|---------------------|
| Continuity Test | Short Circuit (0 Ω) |
| Across open contacts | > 5000 MΩ (5GΩ) |
| Phase to Earth | > 5000 MΩ (5GΩ) |
| Maximum Earth Resistance to Ground | 10 Ω |

7. Supporting documents

7.1. Test Report Forms

The commissioning test report is available from the appendix:

- Manual Gas Switch Test Report

For CitiPower/Powercor employees the commissioning test reports are to be completed via the ClickMobile application, for further details refer to guideline “Testing Form” (Document No. JEQA4UJ443MT-1864305901-228).

The commissioning standards and test reports can also be found on CitiPower/Powercor’s external website from:

- Home/Industry/Supplier Resources/Forms, Reports and Bulletins/Commissioning Standards and Test Reports.

Appendix A. Manual Gas Switch Test Report

Job Title:

| | |
|---------------------|--|
| Manufacturer | |
| Serial No | |
| Rating | |

| | | | |
|------------------------------|--|----------------------|--|
| Test Instrument Model | | Instrument No | |
| Test Instrument Model | | Instrument No | |
| Test Instrument Model | | Instrument No | |
| Tested by | | Date | |

NOTE: When recording these values, an accurate measurement must be recorded. Values with ranges (e.g. 55+MΩ) will not be acceptable. The test results will form the baseline for future maintenance purposes.

| INSULATION RESISTANCE TEST 5kV | | | |
|---------------------------------------|----|---------------------------|----|
| Phase to Earth | | Contact to Contact | |
| Red to Earth | MΩ | Red to Red | MΩ |
| White to Earth | MΩ | White to White | MΩ |
| Blue to Earth | MΩ | Blue to Blue | MΩ |
| | | Red to White | MΩ |
| | | white to Blue | MΩ |
| | | Blue to Red | MΩ |

| CONTINUITY TEST | | | |
|------------------------|--------------------------|----------------------|--------------------------|
| Switch Open | | Switch Closed | |
| Red to Red | <input type="checkbox"/> | Red to Red | <input type="checkbox"/> |
| White to White | <input type="checkbox"/> | White to White | <input type="checkbox"/> |
| Blue to blue | <input type="checkbox"/> | Blue to blue | <input type="checkbox"/> |

| EARTHING TEST | |
|------------------------------------|---|
| Maximum Earth Resistance to Ground | Ω |

Appendix A. Manual Gas Switch Test Report (Continues)

| CHECKLIST | | |
|--|----------------|-------------------------|
| Items | Checked | Comment (if any) |
| All required tests satisfactorily completed as per CB031 | | |
| Switch and complete installation complies with the work instruction and standards requirements | | |
| No visible damage | | |
| Switch operates correctly | | |
| Switch is earthed or not earthed as per work instruction | | |
| Rating plate correct and matches switches | | |
| Switch signs | | |
| Phase plates fitted to crossarm correctly | | |
| Labels identifying the switch by unique number and name fitted correctly | | |
| Switches with unearthed bases | | |
| Caution sign attached as per DS301 | | |

Commissioning Test Passed Yes - No -

Comments _____

Signed: _____ **Date:** _____