Maintenance Report: Electrical Cable Inspection between Station A and Station C

Date: May 22, 2025

Reported by: Technician Sarah Malone

On May 15, 2025, our team received alerts about irregular performance on the electrical cable connecting Station A to Station C. The cable exhibited voltage fluctuations during routine monitoring, raising concerns about a potential fault. Initially, we planned for a possible replacement with a new type 11Z1 cable (2700 meters), but diagnostic tests confirmed that the existing cable was not broken, making replacement unnecessary.

The investigation started on May 18, 2025, at Station A, where the team performed a comprehensive assessment. We rented a cable fault locator for $600. The diagnostics revealed that the issue stemmed from a loose connection at a junction point approximately 1000 meters from Station A, likely caused by thermal expansion or minor mechanical stress, rather than a cable break.

The diagnostic and repair work involved three technicians working for 8 hours, with labor costs amounting to $800 based on standard rates. To maintain power continuity during the investigation, we installed two temporary connectors at the junction point, costing $250. These connectors ensured stable service while we addressed the issue.

To fix the problem, we secured the loose connection using high-quality insulating tape and a protective clamp to prevent future movement. The repair materials, including the tape and clamp, were procured for $150 from our approved supplier. These materials ensured the connection was robust and protected against environmental wear.

After completing the repairs, we conducted extensive testing to verify the cable's performance. We rented a digital multimeter and insulation resistance tester for $300 to check voltage stability, continuity, and insulation integrity. All tests confirmed that the cable was operating within expected parameters, eliminating the need for replacement. The work was finalized by 16:00 on May 18, 2025, and the temporary connectors were removed.

The cable between Station A and Station C is now fully operational, with no replacement required. A follow-up inspection is scheduled for June 10, 2025, to monitor ongoing performance. All diagnostic results and cost details have been documented and filed for reference.

Signed,

Sarah Malone

Maintenance Technician