

CITY OF AUSTIN ELECTRIC UTILITY DEPARTMENT

PURCHASE SPECIFICATION

FOR

KF UNDER-FREQUENCY RELAY RETROFIT ASSEMBLY

<u>DATE</u>	<u>PREPARED BY</u>	<u>ISSUANCE/REVISION</u>
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APPROVAL
SIGNATURES


<i>REASON FOR REVISION</i>	<i>AFFECTED PARAGRAPHS</i>

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1.0 SCOPE AND CLASSIFICATION

1.1 Scope

The City of Austin Electric Utility Department is hereafter referred to as Austin Energy (AE).

The Contractor shall provide a relay retrofit assembly to replace the Westinghouse/ABB KF Under-frequency protection relay PN: 671B287A09 used in AE Substations.

The KF Under-frequency relay operates to close its contacts when the applied source frequency is below a preset value.

2.0 APPLICABLE STANDARDS

The relay retrofit assembly shall be manufactured with highest quality materials and workmanship in accordance with the latest applicable standards of the ANSI, IEEE and NEMA.

3.0 FUNCTIONAL REQUIREMENTS

- 3.1 The relay must be a multi-function microprocessor based relay mounted in an ABB/Westinghouse cradle similar to a SUSI adapter that allows retrofit of the KF relay pin out.
- 3.2 At a minimum, the 59, 27, 81, and 81H/81L functions shall be included in the relay.
- 3.3 The relay retrofit assembly shall be a plug and play solution that allows for the replacement of the old KF 671B287A09 relay by sliding the old relay out and sliding the new relay retrofit assembly in the old type FT (Flexitest) case for this type of relay.
- 3.4 The relay retrofit assembly must not require disconnection or reconnection behind the panel to operate.
- 3.5 The relay retrofit assembly must not require any additional wiring to operate.
- 3.6 The relay retrofit assembly shall come with a new cover that fits over the FT case. This cover shall provide protection to the connections and wiring inside the case and around the relay assembly. The cover shall not protrude more than ½ inch from the edge of the FT case.
- 3.7 Relay retrofit assembly software requirements:
 - A. Must run on Windows 7 personal computer.
 - B. Must allow for configuration of relay and setting of parameters.
 - C. Must allow the settings to be masked to prevent access to critical settings by unauthorized personnel.
- 3.8 The retrofit relay assembly shall have event log capability and shall allow for downloading of data log from the front panel via a USB connector. The unit must be capable of logging up to 6 events with date stamp.
- 3.9 Relay retrofit assembly communication requirements:
 - A. ModBus, DNP3 and IEC 61850 protocols.
 - B. RS485, RS232 and Ethernet ports.
- 3.10 The relay retrofit unit must include an easily configurable HMI interface that includes the following:
 - A. LCD display that can be easily read by a person standing 12 inches in front of it.

B. Navigation buttons and programmable functions.

4.0 CONSTRUCTION AND MATERIAL REQUIREMENTS

- 4.1 The manufacturer shall subject all materials used in the construction of the relay retrofit assembly to rigid quality assurance and control standards.
- 4.2 The relay retrofit assembly shall be constructed with hardened electronics required for equipment used in a substation.

5.0 TEST REQUIREMENTS

- 5.1 The retrofit assembly shall comply with applicable industry standards for this type of equipment.
- 5.2 The manufacturer shall completely assemble the retrofit relay assembly before shipment and test the unit to ensure operation in the desired manner. The manufacturer shall functionally test each component separately.
- 5.3 Manufacturer shall check all wiring for loose wires, improper crimps and other workmanship defects.

6.0 DOCUMENTATION REQUIREMENTS

The manufacturer shall provide with each relay retrofit assembly a copy of the functional tests performed demonstrating its compliance with all AE requirements. Quality control records of the retrofit relay assembly fabrication process shall be available for AE review upon request. All reports shall be in English and in standard non-metric units of measure.