



1659 Spencer Road, Denton, TX 76205

Memorandum

To: Julia Winkley, Contract Administration Supervisor
From: Laura Cheek
Date: August 11, 2017
Subject: Tesla DFR Single Source Justification

The Electric Reliability Council of Texas (ERCOT) in its Nodal Operating Guide, Section 6, mandates that certain substations be equipped with disturbance monitoring for system performance, effectiveness of protective relaying systems, and determining the causes of system disturbances. System disturbances can be unwanted trips, faults, and protective relay system actions. Digital Fault Recorders (DFR's) are a required component for disturbance monitoring and have as their purpose capturing the currents, voltages, and state changes of circuit breakers and other devices to use in determining if system protection devices operated properly. These are sophisticated, stand-alone devices that receive a large number of data inputs.

TMPA has selected the ERL Phase Power Technologies, LTD (ERL) Tesla 4000 as the DFR to be installed in TMPA stations. The City has entered a contract with TMPA to operate, to maintain, and to provide engineering and construction services for TMPA stations in the Denton area. Consequently, DME is working on a project to design, procure, install, and operate these ERCOT mandated devices for TMPA. DME is also required to install DFR's in several of its stations pursuant to the ERCOT requirements. Since these are sophisticated devices that require specific software to program and operate, and use specific input modules to capture data, DME proposes to use the same ERL Tesla 4000 for its compliance needs. Attempting to incorporate multiple DFR device types in one system would be difficult to design and operate and more costly to maintain.

ERL is the company that manufactures the Tesla 4000 and the necessary input modules. ERL sells the Tesla 4000 digital fault recorder and its other products directly and has no other representation for sales. The Tesla 4000 meets the ERCOT guideline that states all fault recording devices shall be synchronized with a GPS based clock with 2 millisecond timing accuracy. ERCOT requires DFR's at all substations and interchanges with five or more non-radial line terminals and for generating stations. Below is a list of the existing and future stations on the DME system that will be required to meet the guideline.

- Denton West Interchange (TMPA; expected to require two units)
- Denton North Substation (TMPA station but DME will own this DFR because DME owns the protection system)

- Spencer Interchange (may be required within three years; TMPA station but DME will own this DFR because DME will own the protection system)
- Jim Christal Substation (will require one for the generation and one for the substation)
- Brinker Substation

DME would like to standardize on the ERL Tesla 4000 as its digital fault recorder.