TITLE: Lessons Learned in Centralizing Transmission Network Model Maintenance at Oncor

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Today, there are transmission and distribution network data models supporting wide range of software systems from Energy Management Systems, Distribution Management Systems, and Operator Training Simulators to the planning, reliability and operation applications. The CIM standards has help to standardize the exchange of these models however different organizations and applications have different requirements that must be allowed for during the exchange of models. This paper describes the difficulties achieving centralized maintenance of operational network models at Oncor Electric Delivery.

Intro

Oncor supports multiple applications that require modeling of the transmission network in various levels of detail. These models of the transmission network system are required to support various internal and external entities. In this presentation we are focusing on the network models used in Oncor's and ERCOT's real-time Operations. EROCT's and Oncor's transmission network models have historically been maintained to support area of responsibility and their respective vendor's modeling requirements. This meant the operations model representing the transmission system, for Oncor, included the details to operate down to the distribution feeders till they escape from the station, while the ERCOT model stops at the high voltage transformation point.

The System Modeling group at Oncor is responsible for maintaining the operations model used for the real-time Transmission Network Applications at Oncor, and also submits the modeling information used at ERCOT for all ERCOT systems, for both market and reliability functions. Oncor was in need of finding a better way to support network modeling with minimal increase in staffing levels.

Oncor and ERCOT Network Models

The ERCOT Protocols required that the management of the modeling activity to be based in the CIM Standards and that Member companies would submit changes to the ERCOT model using the CIM standards. In addition to changing ERCOT transmission model processes to being based on the CIM, ERCOT was also required to publish each incremental change to the ERCOT network model using the CIM/XML format and to also publish the network model using CIM/XML.

Oncor evaluated the effort required to support the ERCOT and Oncor systems and possible future requirements, and decided it was to our benefit to centralize the network modeling support activity. The benefit of a centralized model management was reduction in data errors and allows for consistent modeling between systems that uses the network. This decision also allowed for Oncor to make use of the data ERCOT publishes about the modeling changes that other entities submit to ERCOT allowing Oncor to timely maintain the external transmission network model.
The challenge now becomes how to combine the EROCT transmission network model with the Oncor Operations model. The issues Oncor encountered in centralizing the support of the transmission network model is the basis of this presentation.