AUTODESK UNIVERSITY

UT21257

Southern Company - Modular Standards and Substation Model Structure

Jeffrey Cowgill
Southern Company

Learning Objectives

- Historical Overview of Southern Company
- Brief History of Standards development at SoCo.
- Understand use of modular Standards.
- Gain insight into the structure of your models.
- Recognize importance of customer needs.

Description

This session will be an overview of Standards at Southern Company as well as an introduction to our modular substation design concepts, development of substation models and our take on high levels of customer service.

Speaker Bio

Jeffrey Cowgill
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23 years Substation Design experience with Southern Company
38 years total design experience in the Power industry

Father of two, recently re-married on the island Vieques, Puerto Rico at age 58. Carol and I live each day to the fullest. We love to travel or “go and do” as she says. We are lake people and stay near the water whenever we can. Annual beach trips are as much a necessity as a weekend sunset cruise. We also enjoy entertaining and preparing dinner for others. We are engaged in multiple projects as well participating in annual charity events. Last year we travelled to the Caribbean, Mexico and the Mediterranean. We were amazed by all the friendly people, food and culture. We are currently downsizing a bit and working diligently on life solutions for our remaining years.

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History of Southern Company

We've been around a long time in 1902 GPC was formed, in 1906 Alabama Traction Power and Light. The roots of Southern Company itself can be traced back to 1924, when Southeastern Power & Light was formed as a holding company for Alabama Traction, Light and Power Later that year, it formed Mississippi Power as a subsidiary, with Gulf Power following in 1925. In 1926, SP&L merged with Georgia Power. In 1930, Southeastern Power & Light merged into the Commonwealth & Southern Corporation.

The new C&S system included five Northern companies in Tennessee, Michigan, Pennsylvania, Illinois, Indiana, and Ohio and six Southern companies. However, in the late 1940s Commonwealth & Southern was dissolved to meet the Public Utility Holding Company Act of 1935. From this only APC GPC Gulf and MPC were deemed to be an integrated system and thus were allowed to remain under common ownership. Southern Company was formally organized Nov. 9 1945. In 2016 Southern and AGL (Southern Company Gas) merged. Other Subsidiaries include Power Secure – Distributive Generation, Energy Efficiency, Utility Infrastructure and Southern Power – Solar, Wind, Biomass, Natural Gas

History of Standards

Southern Company can be traced back to 1924. Known then as Southeastern Power and Light. A long history of supported standards dates back to late1920's. Current standards developed in the 1990's are still being utilized. In 2007 a renewed effort to update and improve standards was implemented. It continues today backed by our Core Decision Beliefs.

Modular Standards

Southern Company Standards are categorized then divided by Kv. Parts and Assemblies are a piece of a modular approach to substation design. Large "super assemblies" are placed to create whole station models. Catalog cut sheets for station models are not only for designers and engineers but estimators and customer service reps as well.

Structure of Models

Standards consist of Parts and Assemblies. These parts and assemblies must be grouped properly in order for the model to behave correctly. The "next" level of models is a concept where at the lowest level are parts. Parts are built into assemblies, assemblies are built into super assemblies and super assemblies are built into station models. SMP Modules consist of groupings of small base assemblies and or parts. Typically 20-40 parts and or base assemblies. Super Assemblies such as low side assemblies and high side assemblies are groupings of large assemblies. Consisting of typically no more than 10-15 assemblies and no individual parts. Station Models are of the entire substation model, consisting of all required models. Groupings of super assemblies and assemblies consist typically of no more than 10-15 super assemblies and/or assemblies and no individual parts, Complete with Bill of Materials and formal fully annotated drawings.

Recognize importance of customer needs

Get to know your Customers, Listen, know and anticipate. SDS team considerations should find the best methods to integrate into existing design process. Meet the needs of production and also quickly develop SDS. Find synergy between design and standards to produce best results.