



Project 13-8: SEDS Lighting Tool (SEDS Light)

Final Report/Software prepared May 2013; available @ www.dstar.org

Project Summary:

The Secondary Electrical Design Software (SEDS), developed during Program 7 and enhanced during Programs 9, 10, 11, 12 and 13, has been successfully used by the DSTAR membership to perform electrical calculations, such as voltage drop and flicker, for multi-tiered, single-phase and three-phase secondary systems. SEDS employs a drag and drop-style user interface that is very simple to use and affords users tremendous flexibility. As users have grown accustomed to SEDS, they have continued to ask for increased functionality.

Several SEDS users have developed their own “special” databases to handle lighting applications. Although SEDS can be used for this special application, it requires some “work-arounds” that are not ideal. In Program 13 the members proposed that a version of SEDS be developed that is tailored specifically for lighting applications. This version would strip away many of the unused features and add some lighting-specific features. The new SEDS Light tool will be a simplified version of the existing application with the same underlying calculation engine.

Specifically, this project does the following:

- Strips unused functionality from current SEDS Version (remove 3-phase)
- Reduces load choices
- Simplifies load selection
- Updates voltage drop calculations to facilitate lighting applications
- Allows applications of up to 4 lights/pole
- Allows user to specify conductor size and length up the pole
- Updates GUI to support “daisy chaining” of lights without the need for a node (“load-to-load” connections)
- Updates reporting to be consistent with lighting needs
- Updates messaging in status bars and documentation

Member Benefits:

DSTAR members that have been using SEDS for lighting applications have long expressed the desire for a lighting specific tool optimized for their needs. This tool will allow designers to quickly and easily layout a lighting design and perform calculations to ensure that electrical requirements are satisfied. The tool can reduce cost and increase efficiency by optimizing the design to provide service for the lowest cost.

Update History:

SEDS Light V1 was created in P13-8 and was subsequently updated to V1.0.1 and V1.0.2. Please do not hesitate to inform us of any bugs/issues, by sending an email to: dstar-support@ge.com.

SEDS Light User Interface:

The image displays two screenshots of the SEDS Lighting software interface. The top screenshot shows the 'Load Data' window with a description of a lighting load: '110,000 Lumen 1,000w Metal Halide - 1 Fixture /Pole'. It shows a peak kW of 1.08 and a power factor of 0.9. Below this is a list of various lighting fixture configurations. The main window shows a network diagram of a lighting system with a transformer at 114.5V and various lighting fixtures connected to it. The bottom screenshot shows the 'Lighting Load Data' window, which allows users to specify lighting loads and view total load data. It includes a table for 'Total Load' with columns for Summer kW, Summer PF, Winter kW, and Winter PF. The 'Balanced L.L.' row shows values of 1.08 kW, 0.9 PF for both Summer and Winter.

Who Should Use:

Planners, Lighting Designers and any utility personnel responsible for specifying and designing secondary electrical systems.

For the complete report on DSTAR Project 13-8: SEDS Enhancements, visit www.dstar.org.



LAVELLE FREEMAN
GE Energy Consulting
Technical Director
DSTAR Program Manager

GE Power
1 River Road, 40-290
Schenectady, NY 12345
(518) 385-3335

CONTACT ME
Lavelle.Freeman@ge.com

