Viewing a TCC in Star

This tutorial provides a brief overview of the basic operation of the Star Protective Device Coordination module. It will cover how to create a new Star View and how to add a new device to an existing Star View. You will need to contact OTI with your Return Key Code so that you can activate this module.
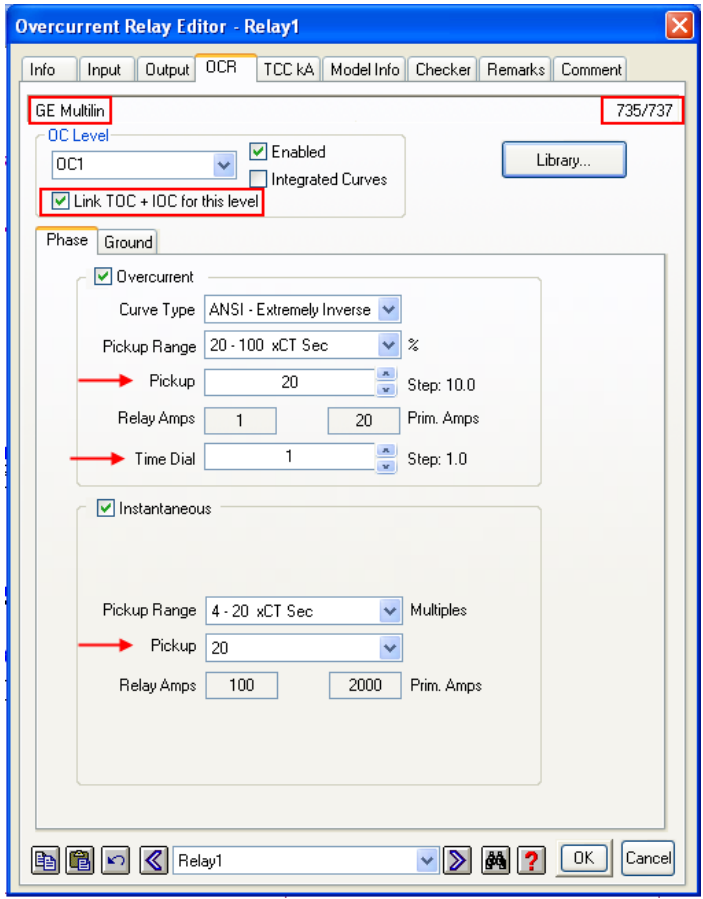
Creating a New Star View

🖰   Start ETAP Demo and select the option "New Project" for this tutorial.

🖰   Click the Edit button on the Mode toolbar.

🖰   Click the Overcurrent Relay button [ocp] from Edit toolbar and drop it into the OLV1 presentation.

🖰   Double-click the Overcurrent Relay element to open the Relay editor.

🖰   Go to the OCR page and then click the Library button. This will display the Library Quick pick - Relay dialog box. Select manufacturer GE Multilin and model 735/737 and click OK. GE Multilin 735/737 relay data is populated in the OCR page.

🖰   Set the relay as shown in the figure; ensure that 'Link TOC + IOC for this level is checked for OC1. To learn more about relay settings, refer to the Relay section in Instrumentation Elements chapter of the User Guide or click the Help button.

🖱 Click the Input page. Enter primary and secondary ratings for Phase CT (800:5) and Ground CT (50:5) as shown below. CT ratios can be entered directly in the Relay Editor where no CT is connected to the relay. You will need to drop a CT into the one-line-diagram under Edit Mode and connect the Relay to the CT before running calculations but viewing a TCC curve does not require the presence of a CT.
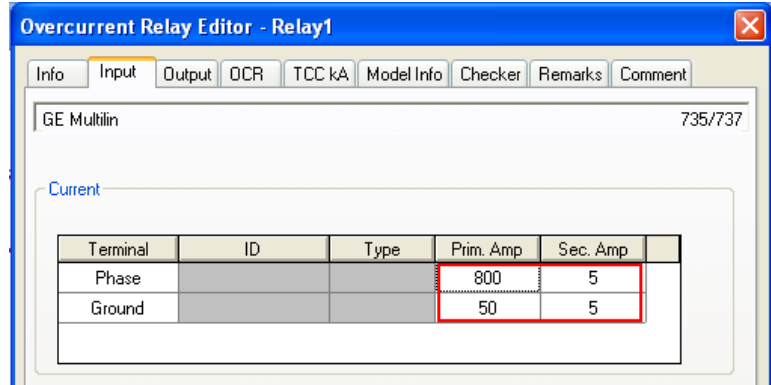

🖱 From the Mode toolbar, click the Star – Protective Device Coordination button to switch to the Star mode.
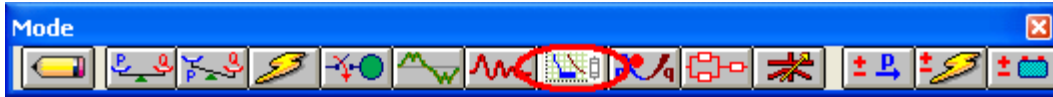
🖱 To generate the Star View, select the relay, and then click the Create Star View button from the right-hand side Star Mode toolbar.
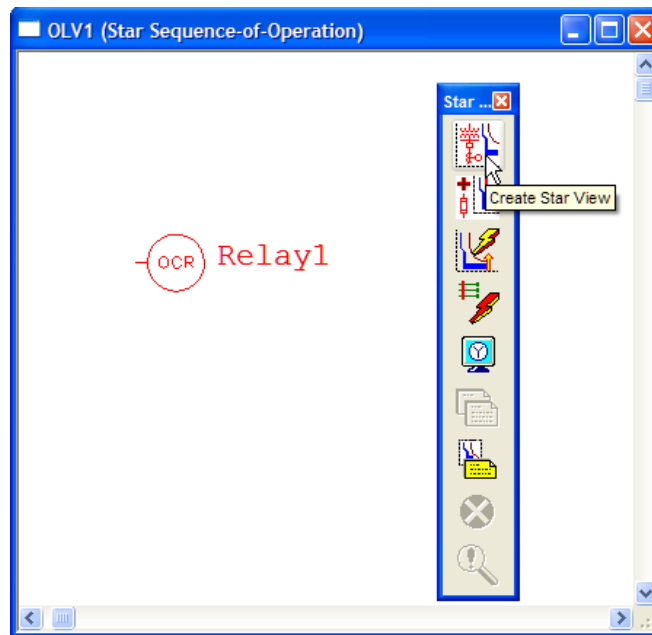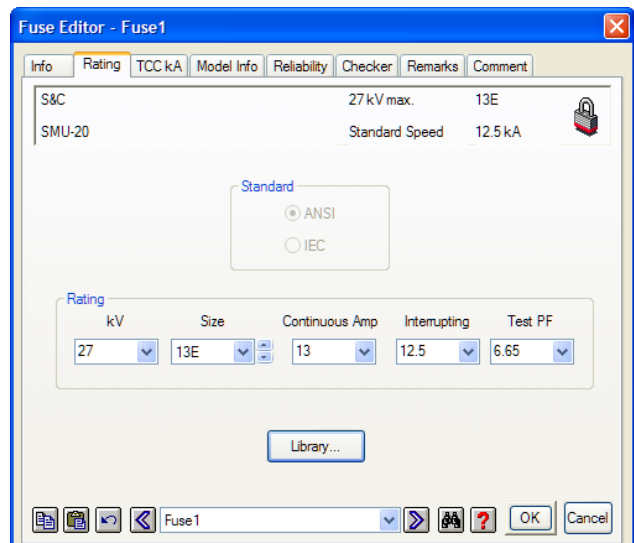

🖱 This opens a new Star TCC View with the selected Relay1 curve. Star Views for other protective devices can be generated in a similar manner. Keep Star1 open for the next section of the tutorial. Right click on the label tag associated with the curve and check the Settings options. This will show more infromation related to the relay settings in the label tag.
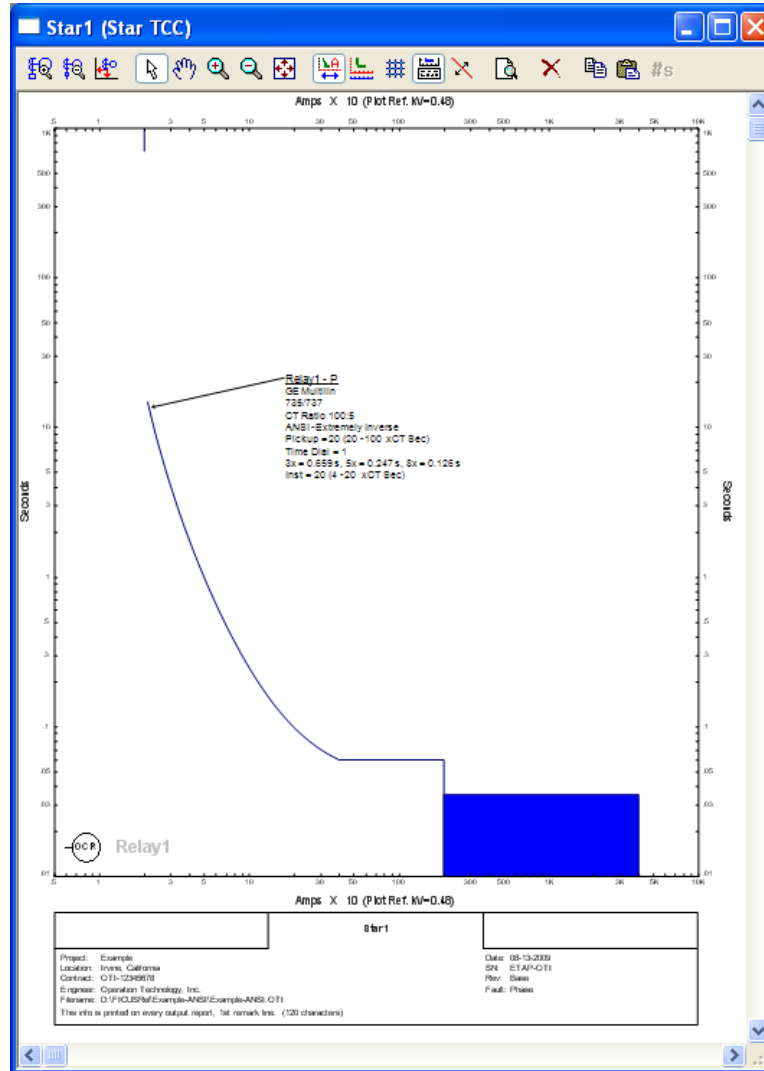
Adding a Device Curve to a Star View

🖰   Switch to Edit mode [icon] and then drop a fuse into the one-line-diagram view OLV1.

🖰   Double-click the fuse symbol to open the Fuse editor. Go to the Rating page and click the Library button to display the Library Quick Pick – Fuse dialog box. Select manufacturer S&C, and model SMU-20, at 27 Max. kV, with standard speed and size 13E.

Switch to Star Mode ⬛ using the Mode toolbar. Select Fuse1 and click on

Append to Star view button ⬛ to open the Star View Selection editor. Select Star1 to append Fuse1 to Star1 view and click OK.

Star View Selection

☐ Filter Star view list by selected component(s)

Star Views   Components

Star1   Relay1

[Select All] [Deselect All]   [Help] [OK] [Cancel]
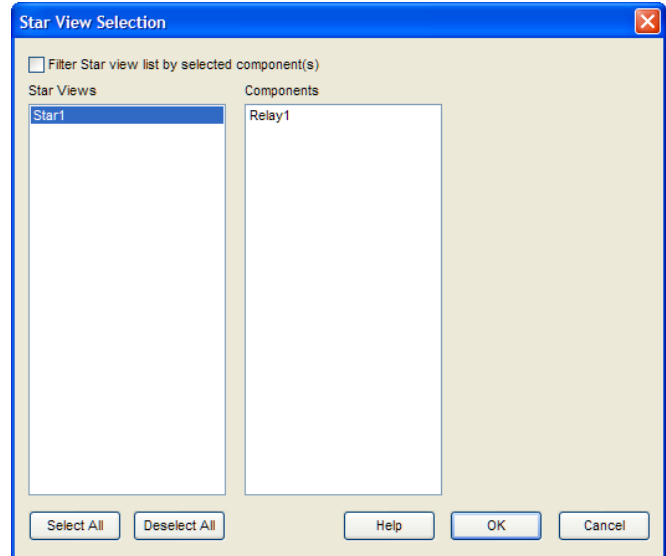
Star1 view opens with the Fuse1 curve added. Element or group of elements on the one-line-diagram can be appended to one or more Star views in a similar manner.

☺ Helpful Tips…
A faster method to add a new device to a star view is to select the device on the one-line-diagram, hold the Shift key down, and drag it to the active Star View. The color of each TCC curve can be assigned by pressing the Plot Options button on the right hand toolbar.

Star1 (Star TCC)

Amps X 10 (Plot Ref. kV=0.48)

Fuse4
S&C
SMU-20
Standard 27 kV
5E

Relay1 - P
GE Multilin
735/737
CT Ratio 100:5
ANSI - Extremely Inverse
Pickup = 20 (20 - 100 xCT Sec)
Time Dial = 1
3x = 0.659 s, 5x = 0.247 s, 8x = 0.126 s
Inst = 20 (4 - 20 xCT Sec)

Fuse4

Relay1

Amps X 10 (Plot Ref. kV=0.48)

Star1

Project: Example
Location: Irvine, California
Contract: OTI-12345678
Engineer: Operation Technology, Inc.
Filename: D:\FICLISRef\Example-ANSI\Example-ANSI.OTI
This info is printed on every output report, 1st remark line. (120 characters)

Date: 08-13-2009
SN: ETAP-OTI
Rev: Base
Fault: Phase