Underground Raceway

Design
Operation
Expansion

Underground Raceway Systems helps engineers to design cable systems to operate to their maximum potential while providing secure and reliable operation. The advanced graphical interface allows for design of cable raceway systems to meet existing and future needs by using precise calculations to determine required cable sizes, their physical capabilities, and maximum derated ampacity. In addition, transient temperature analysis computes temperature profiles for cable currents, reducing the risk of damage to cable systems under emergency conditions.

etap
Thinking Power
for Power Engineers

Detailed Modeling Gives Accurate Results

Key Features

Neher-McGrath Method
IEC 287 Method
Steady-State Temperature
Ampacity Optimization
Automatic Cable Sizing
**Transient Temperature**
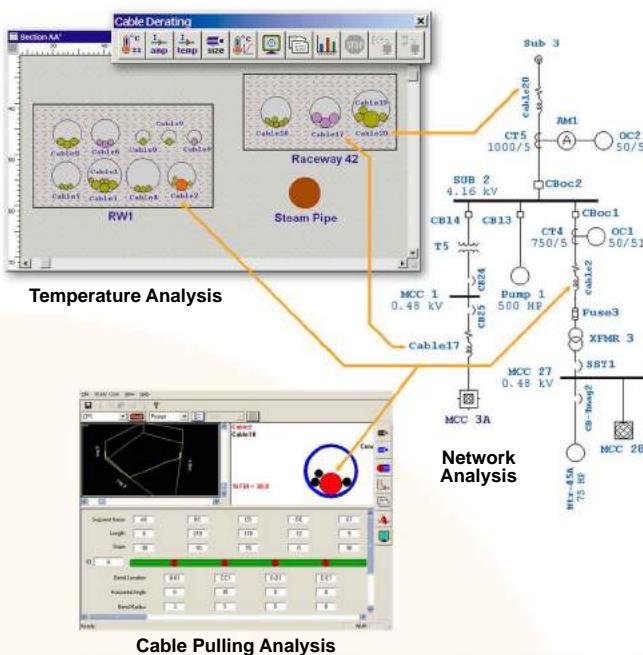
Flexible Operation

- Multiple raceways
- Multiple external heat sources
- Optimization of new cables in existing raceways
- Cross-sectional analysis
- Duct banks & direct buried raceways
- Integrated with cables in one-line diagrams
- Integrated with load flow results
- Integrated with cable pulling analysis

Temperature Analysis

Network Analysis

Cable Pulling Analysis

Temperature Analysis
Network Analysis
Tension Analysis

Unlimited Cross-Sections
Unlimited Elements
No Voltage Limitations
Customizable Libraries
Customizable Font Types, Sizes, Styles, & Colors
Customizable Display of Ratings & Results
Automatic Error Checking
Dynamically Adjust Display of Results
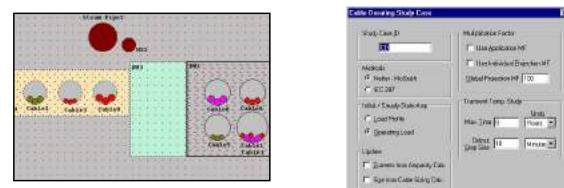
Capabilities

- Graphical user interface
- Graphical manipulation of raceways, cables, conduits, etc.
- Drag & drop cables from one-line diagrams
- Cable of different sizes in the same raceway
- Separate phases into different conduits or locations
- Unsymmetical positioning of raceways
- Transient calculations use a dynamic thermal circuit model
- Option to fix cable size and/or loading
- Grounded/ungrounded shielding
- Calculate thermal R, dielectric losses, Y_c, Y_s, etc.
- User-defined armor cables
- Unbalanced load factors
- Multiple duct banks & direct-buried conduits
- Place raceways in multiple cross-sections

Plotting

- Transient temperature calculations based on load profile
- Option to display multiple cables simultaneously
- Zoom to any detail level
- Export data to Microsoft Excel
- Line, bar, 3-D, & scatter plots
- Customize text & axes

Reporting

- Flag critical & marginal cable temperatures
- Reports all physical & calculated data
- Use Crystal Reports® for full color, customizable reports
- Export output reports to your favorite word processor
- Graphical display of raceway results