

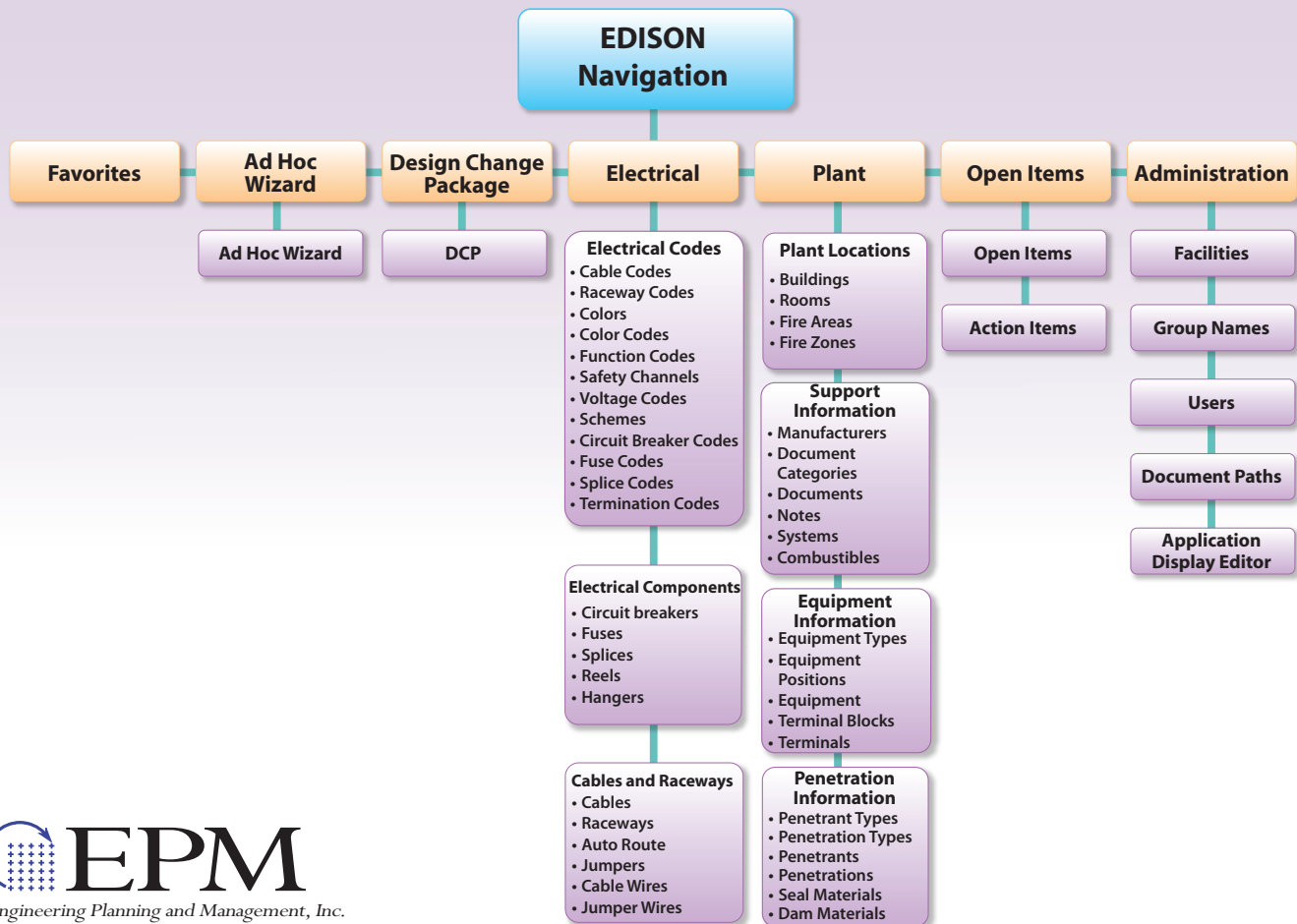


The Engineering Design Intelligent System Operations Network (EDISON) application is a verified 10 CFR 50 Appendix B-compliant module of the Genesis Solution Suite®. It is the newest version of the EDISON cable, raceway, and wire configuration and management system, and it was developed using Microsoft® .NET technologies.

EDISON supports the engineering, design, and construction of new nuclear reactor power plants, and the long-term operations and maintenance of nuclear power plants. It streamlines business processes and allows users to share information with all project participants throughout the design process.

## EDISON Features

- Intuitive User Interface
- Ad Hoc Query Functionality
- User Customization
- Configuration Management
- Cable Auto-Routing
- Electrical Separation Between Cables and Raceways
- Automated Raceway Fill and Weight Monitoring
- Ampacity and Voltage Drop Calculations
- Wire and Jumper Terminations
- Cable Reel Management



## User Interface Navigation

EDISON includes a new, intuitive user interface which consists of forms, tabs and windows.

Simple Form Navigation: All forms are accessible from a sidebar navigation pane, which includes a Favorites tab for accessing frequently-used forms.

- Tab and Window Views: Each form can be viewed as a window or a tab within a window, and each window is expandable.

Cable	Cable Code	From Equipment	To Equipment	Status
AC1Q0641A	A041	10A40105	1AP206	AS BUILT
AC1Q0893A	A041	10A40106	1AP202	AS BUILT
AC1V0627A	A041	10A40112	1AK403	AS BUILT
AC1V0627B	A041	10A40112	1AK403	IN DESIGN
AC1V0627B#	A041	10A40112	1AK403	IN DESIGN
AC1V0627C	A041	10A40112	1AK403	IN DESIGN
AC1V0627D	A041	10A40112	1AK403	IN DESIGN

## Ad Hoc Query Functionality

- Advanced Query Options: The Query form can be used to search for any data on a form. Multiple operators are available for building complex queries.
- Quick Query Functionality: A query can also be used to perform a search directly from a form.
- Detailed List Contents Tables: Query results provide additional information about each record for quick reference.

## User Customization

- Field View Options: Fields can be hidden, and the name and order can be modified for each field.
- Permissions Personalization: Read-write permissions can be granted to individual users, or to groups of users.
- Document Path Specification: The location where documents are saved to and retrieved from can be specified in the EDISON application.

## Configuration Management

EDISON includes an integrated Design Change Process (DCP) to support engineered electrical designs from inception to installation and closeout.

The DCP provides automated status updates

based on electronic signatures for the preparer, reviewer, issuer, and approver. Electronic history files are automatically created and are viewable in the application.

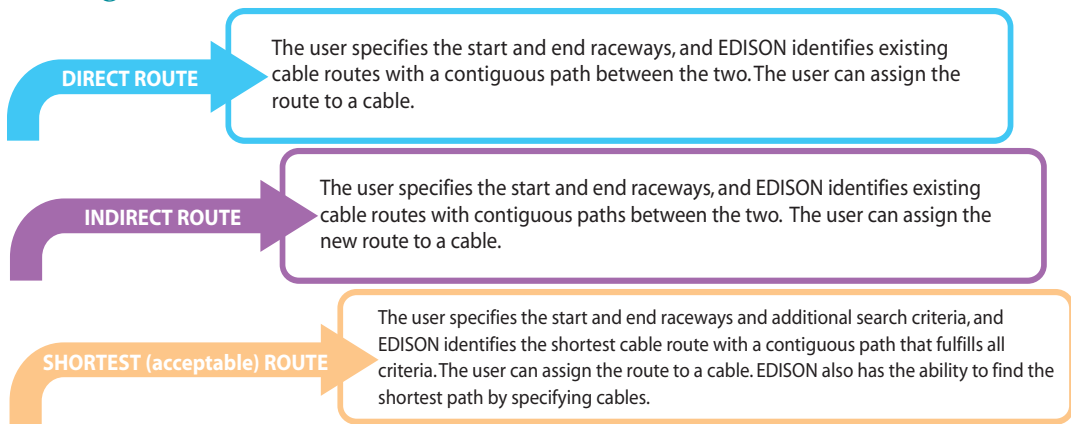
EDISON provides a convenient mechanism for tracking and scheduling the design, construction/startup, turnover and operations activities around the electrical installation of the plant.

Display Sequence	Visible	Category	Column Alias	Column Name
11	<input checked="" type="checkbox"/>	Ampacity / Voltage Drop	WC51 Ampacity Last Updat	WC51_AMPACITY_LAST_UPD
1	<input checked="" type="checkbox"/>	Cable Pull Info	From Tail Length	FROM_TAIL_LENGTH
2	<input checked="" type="checkbox"/>	Cable Pull Info	To Tail Length	TO_TAIL_LENGTH
3	<input checked="" type="checkbox"/>	Cable Pull Info	From Termination Card Da	FROM_TERMINATION_CARD
4	<input checked="" type="checkbox"/>	Cable Pull Info	To Termination Card Date	TO_TERMINATION_CARD_D
5	<input checked="" type="checkbox"/>	Cable Pull Info	Pull Card Generation Date	PULL_CARD_GENERATION_C
6	<input checked="" type="checkbox"/>	Cable Pull Info	Preliminary Length	PRELIMINARY_LENGTH
7	<input checked="" type="checkbox"/>	Cable Pull Info	Reel	REEL
8	<input checked="" type="checkbox"/>	Cable Pull Info	Work Order No	WORK_ORDER_NO
9	<input checked="" type="checkbox"/>	Cable Pull Info	Pull Link	PULL_LINK
1	<input checked="" type="checkbox"/>	Data	Cable	CABLE

## Cable Auto-Routing

EDISON supports cable-routing for nodalized and non-nodalized plants. When auto-routing a cable with one of the three methods available, the system automatically performs separation checks, fill and weight calculations, and verifies the physical connection of segments in the cable route.

## Cable Routing



## Electrical Separation

EDISON safeguards electrical separation by evaluating user definable acceptance criteria: the matrix for cables and their respective routes, voltage levels, and safety channels. The system also ensures electrical separation of a cable's function (e.g., control) and its raceway's function (e.g., power, control, instrumentation, etc.).

## Electrical Calculations

EDISON performs the following calculations for cables and raceways:

### Cables

- Ampacity (ANSI/NEMA WC51 ICEA P-54-440): EDISON calculates the allowable and actual ampacity of cables in cable trays and compares them. The user can manually enter a value to override the calculated value.
- Voltage Drop: EDISON calculates the voltage drop for circuits
- Cable Code Cross-sectional Area
- Cable Scheduled Length

Ampacity / Voltage Drop		
Operating Amperage: 20	Max Current: 50	Operating Voltage: 20
Phase: 1	Voltage Drop: 0.794	Voltage Drop Percent: 3.969
Design Ampacity: 354	Ampacity Rating:	Manual Ampacity: 400
Voltage Drop Last Updated: 7/16/2014	WC51 Ampacity Last Updated: 7/24/2014	

### Raceways

- Design and Actual Percent Fill
- Design and Actual Weight
- Combustible BTU/ft - EDISON performs a comparison between allowable values and actual calculated values
- Raceway Code Cross-sectional Area

Calculated Data		
Actual Percent Fill: 27.45	Design Percent Fill: 109.78	Actual Total Weight: 3
Design Weight: 12	Raceway Fill: 3.501	Equivalent Percent:
Apparent Fill Depth: 5.6	Available Space: 1.6	BTU FT: 1200

### Fire Areas/Fire Zones

- Combustible Load Calculations

## Cable Reel Management

- To better manage cable reel resources for new plant design and construction, EDISON provides a reel management function to ensure cable reel compatibility and to update the associated Reel lengths (Remaining Length and Total Cut Length).

## Installation Support

- EDISON also allows the user to print Pull Cards (for cables), Termination Cards (for cable wires) and Installation Tickets (for raceways) from associated records to aid with installation.

## Reports

- EDISON allows the user to generate Schedule Reports, DCP Status Reports, and Violation Reports.

## Genesis® Ad Hoc Wizard

- The Ad Hoc Wizard form provides the user with a graphical query tool for accessing the entire EDISON data table set and generating custom reports.

Seq	Table Name	Column Name	Operator	Value Expression	And/Or
1	CABLES	CABLE			
2	CABLES	CABLE CODE			
3	CABLES	ACTUAL LENGTH			

For more information, contact Vincent Renzi at [vrr@epm-inc.com](mailto:vrr@epm-inc.com) or 508-532-7167.

### EDISON Version 5.3.0

#### EDISON.NET DEPLOYMENT:

##### Server:

Database Management System  
Oracle® 10g (or greater)  
Microsoft® SQL server 2012  
Operating System - Microsoft® Windows server 2012 or Unix/Solaris  
Disk Space - 5 GB (minimum)  
Memory - 6 GB (minimum)

##### Client:

Operating System - Microsoft® Windows 7 (or greater)  
Disk Space - 3 GB  
Memory - 6 GB (minimum)  
Microsoft® .NET Framework 4.5.1



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