Electrical Power System Analysis Agency

Elpsa-team.com

ELPSA TEAM

PORTFOLIO FILE

ABOUT US

ELPSA Agency:

After 10 years of professional experience in power system design, electrical installation consulting, and using electrical software, our expert team decided to establish ELPSA AGENCY to deliver services to other companies in the world, remotely.

ABOUT US

Our Goal

Reducing the cost of services, increasing the quality of services, and increasing customer satisfaction.

Our Vision

Designing a reliable and safe power system with maximum performance.

Our Mission

Electrical power system design services in a white-label format for consulting engineering companies & EPC contractors.

ABOUT US

Our Services

ELPSA Team is an expert consultant team who designs and models electrical power systems by software in a white-label format for other companies.

These services could be provided to industrial plants, power electrical substations, power generation, transmission lines, distribution electrical systems, regenerative power plants, subway stations, buildings, etc.

ABOUT US

Our Method

- Step 1: Discovery session and reviewing all the customer needs
- Step 2: negotiations for the scope of services and what the customer needs for outputs (reports, the original file of software, DWG files, etc.)
- Step 3: negotiations for agreement details (document lists, time, the payment condition, etc.)
- Step 4: input data acquisition for each study with the customer
- Step 5: output presentation for the customer in white label format
- Step 6: revising the output according to customer comments (if needed)
- Step 7: Finishing the service delivery!

ABOUT US

VERY IMPORTANT !!!

We have money-back policies at each step of the project.

OUR TEAM

Hosein Khorzani, M.Sc.
Manager

Hosein Khorzani has been a lead consultant in electric power system services. He has more than 10 years of experience in power systems & renewable energy systems. He has worked with many software like ETAP, DIGSILENT, Cyme, Ecodail, and Dialux, providing services in residential building projects, subway stations & distribution power systems. Additionally, he is trained by SMA, Exosun & Survey Digital company to provide maintenance services and troubleshooting of solar power plants. He holds B.Sc. & M.Sc. degree in power system electrical engineering.

ELPSA TEAM

OUR TEAM

Armin Iromloozadeh, Ph.D.
Technical Director

Armin Iromloozadeh, brings more than 15 years of experience in power systems engineering, focusing on consulting and designing electrical installation. He has an in-depth understanding of electrical systems and is skilled in providing efficient and reliable systems for hospitals and medical centers. Mr. Iromloozadeh has extensive experience in evaluating feasibility and power systems that analyze the prospect of interconnecting electrical installation systems in subway stations. Additionally, he has worked with electrical software such as Dialux, ETAP, Eplan, Revit, etc. He holds a Ph.D. degree in the control system of electrical engineering.

ELPSA TEAM

OUR TEAM

S.Ahmad Kian

CAD Technician

S. Ahmad Kian is a CAD Technician at ELPSA Agency. He is an expert in CAD Software to create technical drawings and plans - also known as draughting - for products and parts used in engineering, construction, etc.

ELPSA TEAM

CASE STUDIES

CASE STUDY (NO.01)

Medium voltage and low voltage power system design and modeling of large-scale chiller for an EPC contractor in a steel factory.

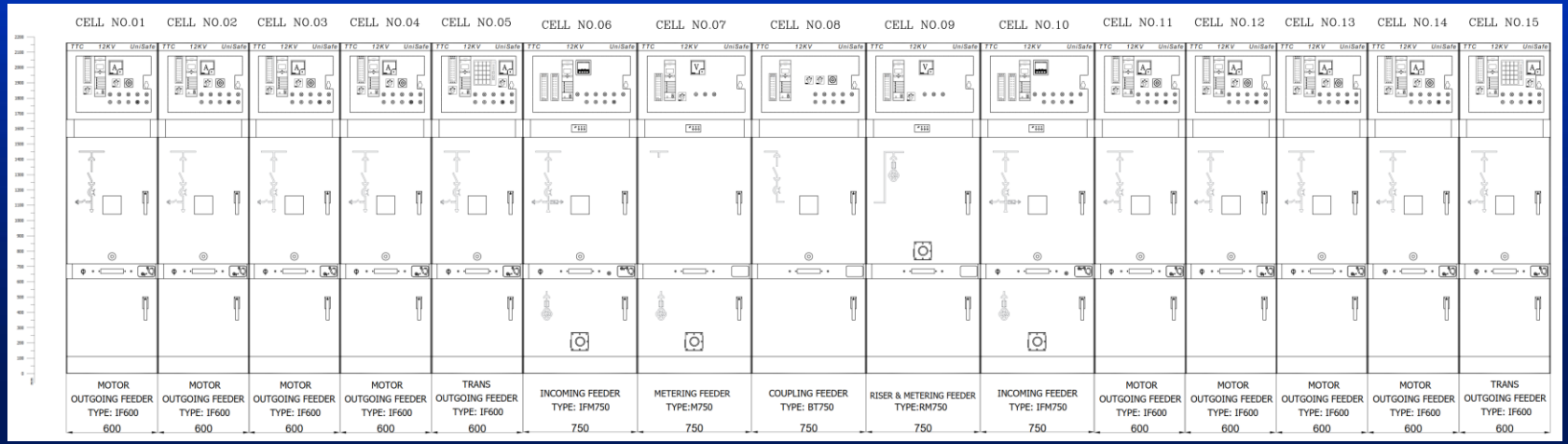
This project has been done (for 6 months) for the water cooling of a steel factory that consists of an MV chiller compressor, cooling towers, and many LV pump stations. This project helps the steel factory to extend the hot rolling section in new lines.

This project was in a white label format for an EPC Contractor that wants to reduce design costs and save time. EPC contractor just focused on purchasing materials, construction and commissioning.

ELPSA TEAM

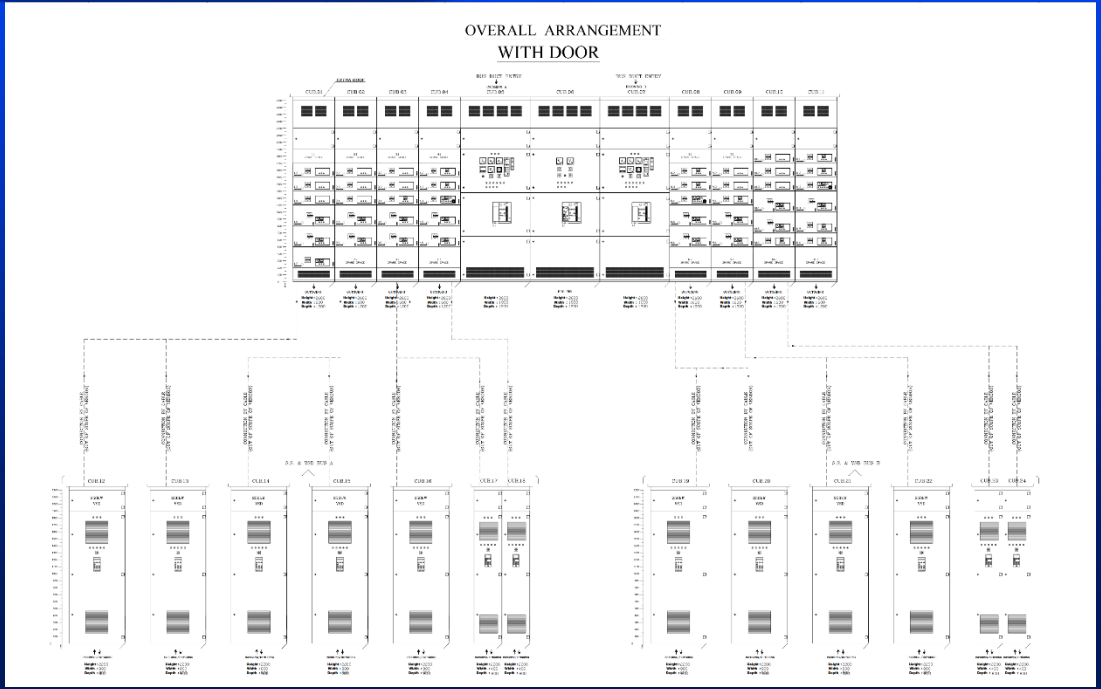
CASE STUDY (NO.01)

In the first step of the design procedure, the electrical load list of equipment was finalized for LV & MV network. Then, transformer size, MV cables, MV switchgear, LV cables, LV switchgear, Power Center, and MCCs were designed by ETAP and Ecodial. According to this, each electrical panel (SLD, Panel Layout, and wiring diagram) were designed by EPLAN and AutoCAD.



CASE STUDY (NO.01)

- Total consumption power: 6 MW
- MV System : 6.6 kv, 31.5 kA – 3 sec. , 1250A, (2 of 3 logic)
- MV Compressor : #6 , 750 kw
- LV System : 0.4 kv , 100 kA – 1 sec. , 5000A, (2 of 3 logic)
- Transformer : #2 , 3000 kVA
- VFD elctromotor : #9 , 250 kw
- Soft Starter electromotor: #3, 250 kW



CASE STUDY (NO.01)

MDL (Main Document List) in the electrical system of this project :

Electrical Load List	Data Sheet For MV Switchgear
Electrical and Control Cable Schedule	Data Sheet For LV Switchgear & MCC
Single Line Diagram For MV Switchgear- Mimic Panel	Data Sheet For Transformer
Single Line Diagram For LV Switchgear and MCC	Data Sheet For UPS – DC Charger
Transformer Sizing	Data Sheet For LCS
Single line diagram for Lighting Panel and Socket	Electrical cable calculation
Typical Wiring diagram For MV Switchgear	Lighting Calculation
Typical Wiring diagram For LV Switchgear and MCC	AC UPS Sizing – DC Charger
Electrical Equipment Layout	Short Circuit Studies
Electrical Cable Routing Layout	Load Flow Analysis Calculation
Bus-Duct Design	MTO For Cable Tray
Earthing Layout and Typical	MTO For Earthing
Lighting and Socket Layout	MTO For Electrical Power and Control Cable
Local Control Switch Drawing	MTO For Local Control Switch

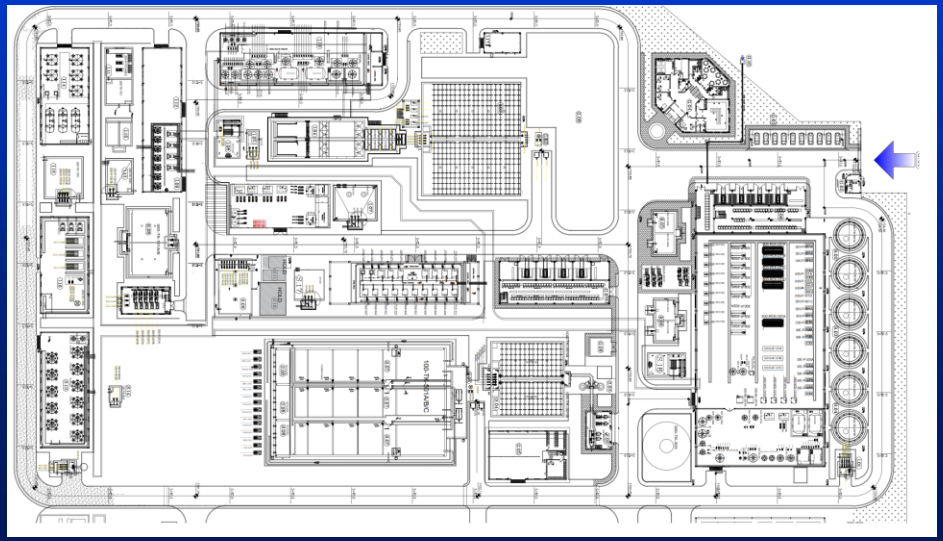
ELPSA TEAM

CASE STUDY (NO.02)

LV Power system design for a wastewater treatment plant with 850 m^3/h inlet capacity for an EPC contractor

This was a large-scale wastewater treatment plant that consists of 3 main units:

1. Sanitary wastewater treatment unit with an inlet capacity of 550.0 m^3/h.
2. Industrial wastewater treatment unit with an inlet capacity of 300.0 m^3/h.
3. RO unit



ELPSA TEAM

CASE STUDY (NO.02)

Sanitary wastewater includes three separate streams for three towns. The source of industrial wastewater is steel plant industrial wastewater producers including sand filter backwash drain, regeneration drain of ion exchange columns, boiler blow-down, and cooling tower blow-down. Industrial wastewater contains suspended solids, oil, and dissolved solids.

After pretreatment, industrial and sanitary streams will be mixed in a storage tank to feed the RO unit. Half of the RO permeate water will be delivered to the steel factory as industrial water and half of the RO permeate will be transferred to the polishing system to produce soft water.

This project was done in white label format (for 6 months) for the main EPC contractor of the wastewater treatment plants and brought saving money, and time. Besides them, The purchase and construction process was completed earlier.

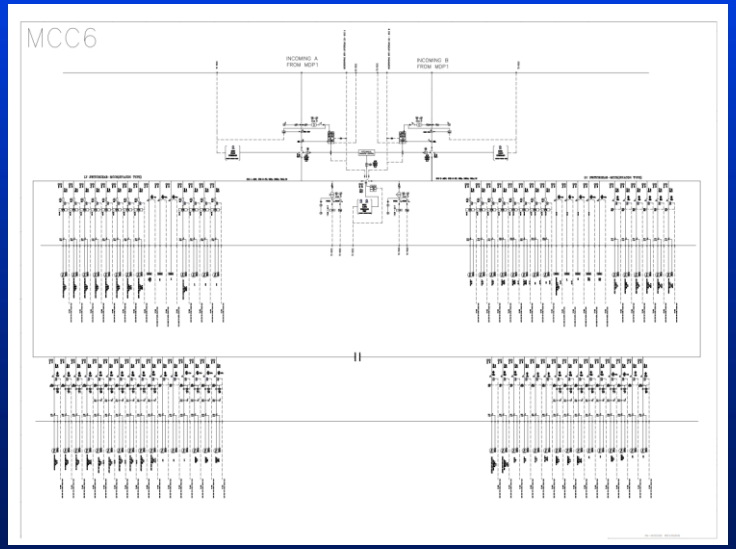
ELPSA TEAM

CASE STUDY (NO.02)

In the first step, the first revision of the electrical load list of the project was reviewed the number of a power center, MCCs, and their locations were finalized with the civil and piping department of the EPC contractor.

In continuing, the load list was revised according to the technical offer of the manufacturer of electro pumps, blowers, electro fans, etc. then a detailed design of power centers, MCCs, LV cables, and conduit banks, … was designed.

In this project, power electrical software was used like ETAP, EPLAN, AutoCAD



ELPSA TEAM

CASE STUDY (NO.02)

MDL in the electrical system of this project :

Common Cable Route and Section To Process Units and General Systems
Data Sheet For LV Motors
Data Sheet For Electrical Cable
Data Sheet For Bus Duct
BOM For Cable Tray and Conduit and Other Accessories
BOM For Local Control Station
Data sheet For VFD panels
Data Sheet For Local Control Station (LCS)
BOM For Electrical Cables
Typical Installation Details For Cable Ladder and Trench
Common Cable Route and Sections For Process Area
Electrical Load List For SWWTS and IWWTS substation
LV Single Line Diagram For SWWTS and IWWTS substation+RO
Power Flow, Short Circuit Study
Equipment Arrangement Layout For SWWTS and IWWTS substation+RO
Cable Route, Cable Tray, Conduit Section, and Arrangement For SWWTS and IWWTS substation+RO
LV Switchgears Data Sheet For SWWTS and IWWTS substation+RO
Cable Calculation and Cable List List For SWWTS and IWWTS substation+RO
Secondary Earthing Layout

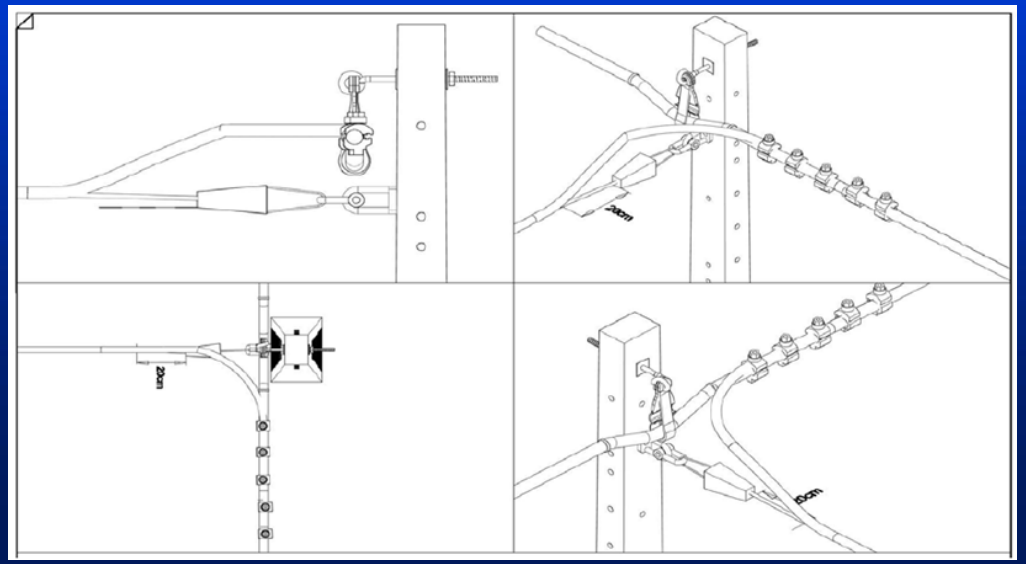
- Total consumption power: 10 MW
- LV System : 0.4 kv , 65 kA – 1 sec. , 32000A,
- NO. of Power Center: #4
- NO. of MCCs: #10
- NO. of Electrical equipment (pump, fan, blower, mixer, etc.): #410

ELPSA TEAM

CASE STUDY (NO.03)

Restructuring of the power electrical distribution system

This is a project that belongs to the Electricity Distribution Company (EDC) which needs to restructure the power distribution network. During this project, all of the distribution network problems were solved which considered the future urban plan and needs.

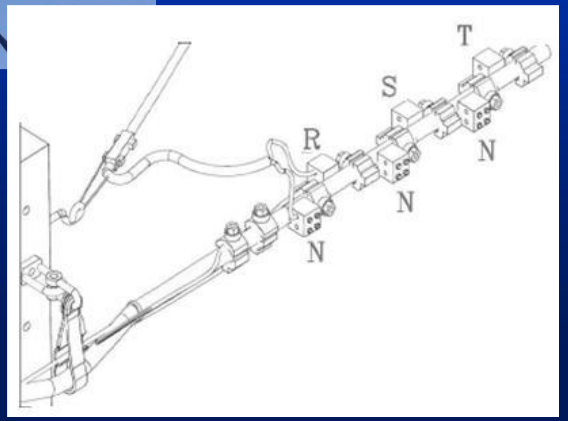


ELPSA TEAM

CASE STUDY (NO.03)

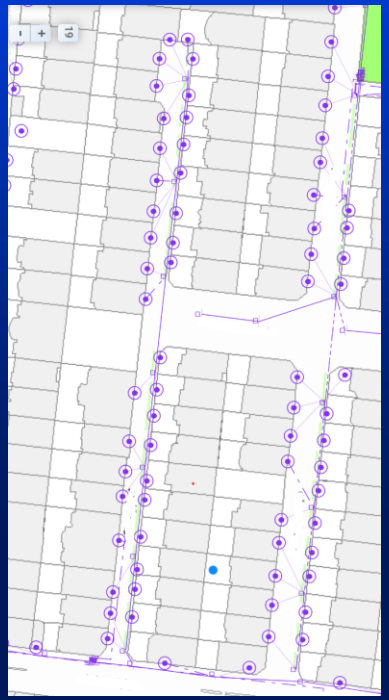
In normal conditions, it takes 1 a month for designing a 4 km length.

This restructuring consists of many items like replacing the power bare copper wire with Aluminum Self-retaining cables, power flow calculations, replacing or renewing the electrical tower (if needed) according to urbanism problems, generating a bill of materials for network collection, etc.



ELPSA TEAM

CASE STUDY (NO.03)



First of all, the BOM of the existing network should be reported according to GIS data and visual check, consisting of the distribution tower, insulator, supports, arms and lighting.

The next step is to model the network to software like ETAP or CYM dist. And verifying the size of the self-retaining cable (AL-XLPE) and the number of the circuit for each feeder.

ELPSA TEAM

CASE STUDY (NO.03)

Then, the upstream substation should be considered and revised, if needed.

Finally, the new distribution network design should be presented in the GIS system of the Distribution company and a technical report for construction and the tender document will be prepared.

This project is currently ongoing and will be implemented in other sections as well.

ELPSA TEAM

CASE STUDY (NO.04)

Design of an electrical system for BAHARESTAN subway station

BAHARESTAN Subway Station is the last station of the BAHARESTAN Metro Line, Isfahan, Iran. This line begins from the last station of line 1 of the Isfahan Metro and continues to BAHARESTAN town.

The customer of this white-label project was the HEXA consulting engineering company, the main consultant of the BAHARESTAN subway station.

The main challenge of this project was providing a safe, reliable, and economic design that was compatible with architecture, structure, and mechanical installation according to IEC & IEEE standards.

ELPSA TEAM

CASE STUDY (NO.04)

Project procedure:

Step 1: architecture plan reviewing and negotiations for the needs of the customer and input data for basic design and detailed design.

Step 2: Generate a basic design report and basic DWG file of electrical systems.

Step 3: Revise the basic design according to the customer's comments.

Step 4: Generate a detailed design file based on the basic design.

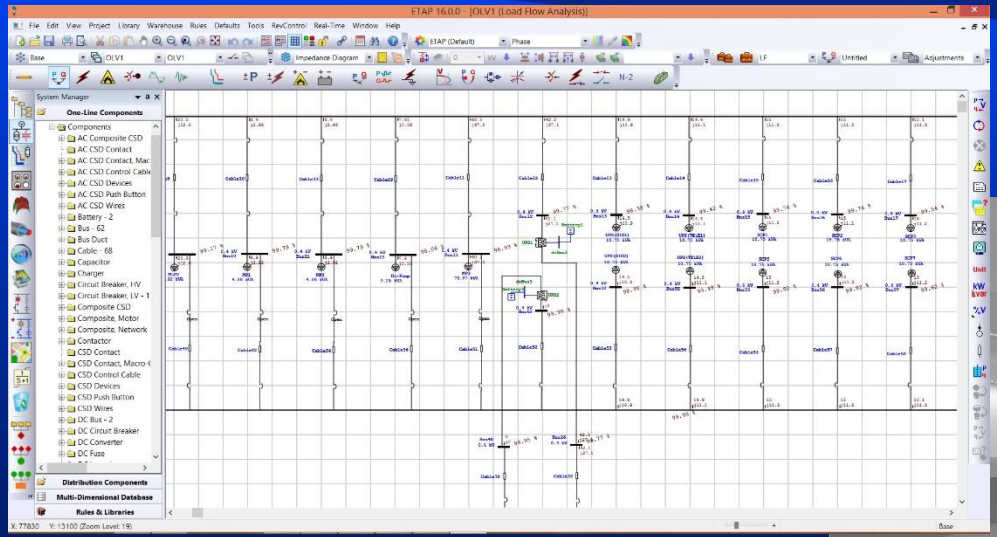
First of all, the lighting system was designed with the DIALUX program. In continuation, other subsystems and load calculation was created respectively. Afterward, a power flow study and short circuit study were run by ETAP for low voltage systems for checking the cable size and circuit breaker characteristics with the acceptable limits of international standards and handbooks. Furthermore, the earthing system was designed according to IEEE80-2013 by ETAP.

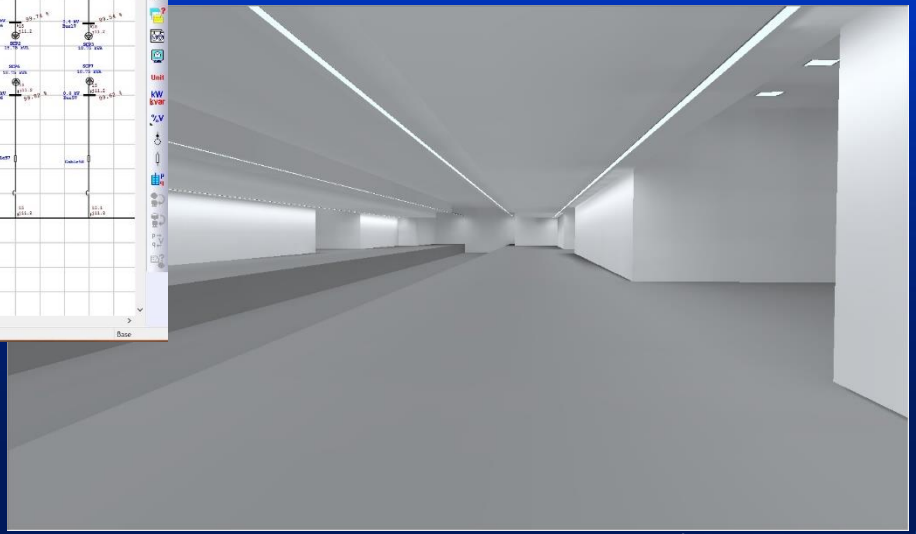
Step 5: Final DWG file and calculation reports were provided after revising them according to the customer comments.

Step 6: Financial estimation of the project is presented in the last step of the project.

ELPSA TEAM

CASE STUDY (NO.04)





ELPSA TEAM

CASE STUDY (NO.05)

Power flow and short circuit studies for R2 Subway Station based on ECODIAL software

R2 Station is one of the Isfahan Metro line 2 stations, in Isfahan, Iran. This project was done for a consulting engineering company in a white-label format that needed to calculate the voltage drop percentage and short circuit level on the low voltage side of the project.

Project procedure:

Step 1: negotiations for the need of customers and input data for power system studies.

Step 2: Modeling the electrical system according to the main distribution panel and sub-main distribution panel in ECODIAL software.

Step 3: power flow and short circuit studies of the project.

Step 4: Generate a calculation report and highlight the abnormal conditions.

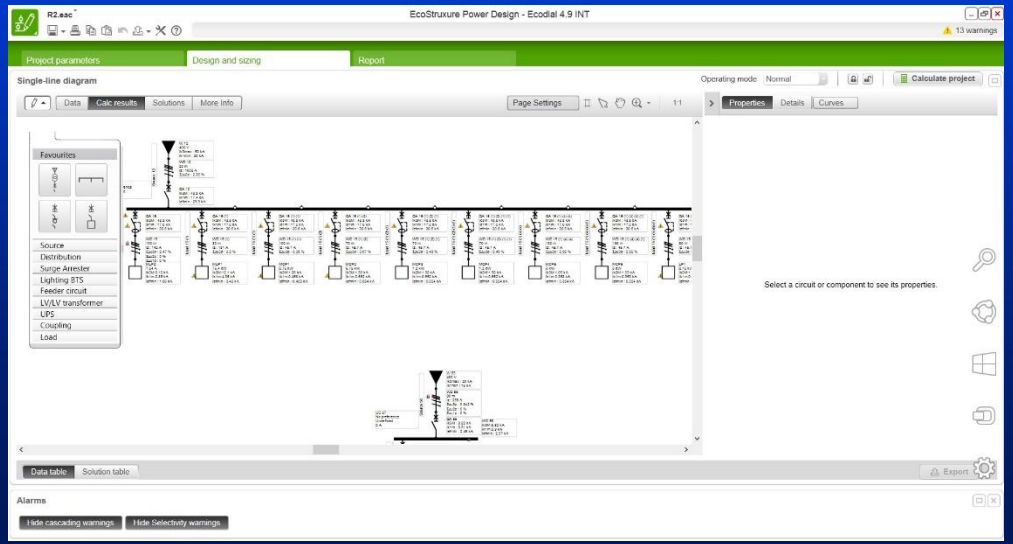
ELPSA TEAM

CASE STUDY (NO.05)

Installation calculation report

R2
Full

Schneider Electric



ELPSA TEAM

CASE STUDY (NO.06)

Design of Medium voltage and Low voltage power system of Health Science & Technology Park based on CYME software results.

Health Science & Technology Park serves as a center for knowledge exchange to support the development of research projects and enhance new business opportunities for members and their companies. Providing and preparing the infrastructure for power system delivery is the responsibility of the Electricity Distribution Company (EDC), the main customer of this project.

According to the conceptual design of urbanism and architectural outline, locating the power substation was very difficult while considering the power electrical system constraints. Therefore by modeling the entire power system in CYME software, the electrical system was finalized.

ELPSA TEAM

CASE STUDY (NO.06)

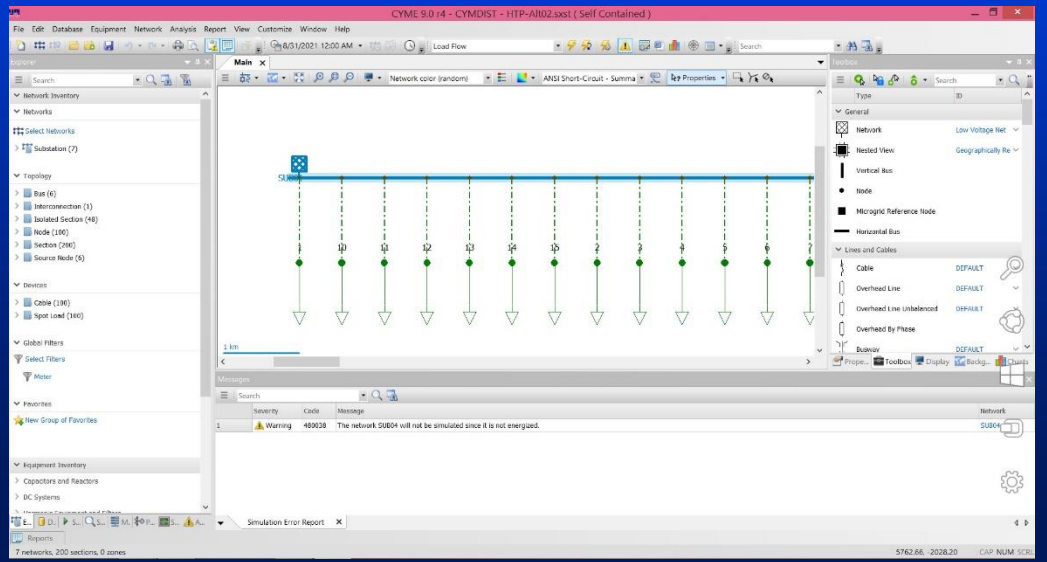
Project procedure:

Step 1: electrical load estimation by load density (w/m2) and providing load list.

Step 2: locating electrical power substations based on load distribution and maximum permissible power in a substation.

Step 3: sizing the transformer, circuit breaker, and cable with CYME software.

Step 4: Prepare the calculation report with CYME output report attachments.



CASE STUDY (NO.06)

ELPSA TEAM

CONTACT US

Contact us for the discovery session:

Elpsa-team.com

info(at)elpsa-team.com

Khorzani.Hosein(at)gmail.com

Skype : Hosein Khorzani

LinkedIn : click here

Facebook : click here

Telegram : click here

Whatsapp : click here

ELPSA TEAM