

funken[®]

INGENIEROS

**Consulting Services
in Power Engineering**

Company Resume

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1.- Who we are ?

Funken Ingenieros was established in 2002 oriented to provide specialized consulting services in Power Systems Engineering.

Their offices are located in Mexico City and it has participated in several projects in Mexico, as well as in Middle America.

Their staff is formed by specialised engineers with a wide experience able to cope with customer requirements.

Funken Ingenieros has been responsible for developing projects to companies ranging from industrial users, consulting, utilities and electrical equipment manufacturers.

Besides the consulting services, Funken Ingenieros also offers trainings about power systems topics and sells the software DlgSILENT PowerFactory because, is the business partner of **DlgSILENT GmbH**.

To Funken Ingenieros, the customer is very important, because of that, we are always willing to develop long terms relationships based on values like:

- Honesty
- Respect
- Responsibility and Commitment

Our range of services comprises:

- Power System Consulting
- Training about Power Systems topics
- DlgSILENT PowerFactory software sales
- Field services (testing and monitoring)

We invite you to see the detailed description of our activities and experience in previous projects.

2.- Services

2.1 Power System Consulting

These activities are performed considering several aspects such as:

- Our attention is always oriented to solve customer situations.
- Wide experience obtained in the development of similar projects
- A vision oriented to obtain the best technical solution considering also non technical factors such as the economical ones , proposing solutions with high feasibility in all senses

These consulting services may be derivate in a wide range of themes which result interesting for engineers in charge of:

- Planning
- Designing
- Maintenance
- Operating electrical power and industrial systems

In all the cases, the support provided is helpful to sizing, selecting, verifying equipment; determine improvements to the network in order to take advantage of the equipment already installed.

2.2 Electrical Variables Monitoring

By using specialised equipment (Dranetz, Fluke) that allows to perform measurements of any electrical variable of importance in electrical facilities.

This monitoring is very useful to determine:

- Power Quality of the electrical system
- Electrical Power Consumption
- Energy Savings Opportunities
- Specific Equipment Performance
- Transients Affecting Equipment Performance

and more. . .

2.3 Power System Studies

Funken Ingenieros provides detailed and comprehensive analysis based on computer simulation tools and a specialised team of engineers that allow obtaining a very accurate response of the electrical system.

Among the studies that can be offered are:

- Load Flow
 - Overloading elements
 - Contingencies analysis
 - Load Growing
 - Power Factor
 - Voltage Improvement
 - Generation Needs
- Short-Circuit
 - Symmetrical – Asymmetrical
 - ANSI / IEC
- Protection Analysis
 - Schemes Design
 - Setting Calculation
- Harmonic Analysis
 - Filter Design
- Dynamic Studies
 - Transient Stability
 - Motor Starting
 - Electromagnetic Transients
- Power Quality Studies
 - Monitoring
 - Analysis
 - Solutions Proposal
- Grounding Grid Design
- Insulation Coordination
- Arc Flash Hazard

And many more. . .

2.4 Testing

The commissioning and routine testing of the electrical equipment is very important in order to assure the good conditions of the power system elements and be certain that there is not an excessive aging of them.

Among the testing performed:

- ❑ Relays Testing
 - Performance of relays
 - End to end
 - Incorrect wiring
- ❑ Grounding Resistance
- ❑ Soil Resistivity

2.5 Trainings in Power Systems Topics

Some experience has been gained in trainings about Power System Topics, from basic concepts to the ones about specialised software application, that may include practical solution of problems.

This is a very important aspect because, it has proven to be useful as a complementary activity after/before the execution of consulting activities, and it gives some criteria and tools to engineers to improve their day to day activities.

3.- Customer List

The following is a very brief list of some of the customers in the different services offered by Funken Ingenieros

3.1 Trainings

- Luz y Fuerza (México)
- Compañía General Electrica (Chile)
- Universidad de Veracruz (Mexico)
- National Polytechnical Institute (Mexico)
- ETESA (Panama)
- ABB Mexico
- Areva Mexico
- Grupo Industrial Peñoles
- Cementos Cruz Azul
- Cementos Mexicanos (CEMEX)
- Iberinco Mexico
- Petroleos Mexicanos
- AES Mexico
- Universidad Autonoma de San Luis Potosí
- Ingenio El Modelo

3.2 Testing

- Cementos Apasco (Mexico)
- Sidenor ABX (Mexico)
- Sinergia (Mexico)
- Telmex (Mexico)
- Hospital Shriners (Mexico)
- Cementos Cruz Azul
- Grupo Industrial Peñoles
- AES Merida III Mexico
- ICA Fluor Daniel
- Transalta Mexico
- Aceros DM

3.3 Power System Studies

- Cementos Apasco (Mexico)
- Sidenor ABX (Mexico)
- Sinergia (Mexico)
- Telmex (Mexico)
- Hospital Shriners (Mexico)
- ABB México
- PEMEX (Mexico)
- DlgSILENT (Germany)
- ETESA (Panama)
- Cementos Lafarge (Mexico)
- Mittal Steel (Mexico)
- Cemento Cruz Azul (Mexico)
- GECSA (El Salvador)
- Saint Gobain (Mexico)
- Energía Borealis (El Salvador)
- Iberostar (Mexico)
- Siemens (Mexico)
- Walmart (Mexico)
- Duke Energy (El Salvador and Guatemala)
- Minera La Parreña (Mexico)
- Siderúrgica de San Luis (Mexico)
- Polysius (Alemania)

3.4 Electrical Monitoring

- Cementos Apasco (Mexico)
- Sidenor ABX (Mexico)
- Bimbo (Mexico)
- Telmex (Mexico)
- ABB México
- Aceros DM