

Happy
New
Year

Newsletter

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1. Advanced Metering Infrastructure (AMI)



Advanced Metering Infrastructure (AMI) is one of the main parts of the Smart Grid of the future.

AMI system provides valuable information for electricity utilities which are not achievable by Automatic Meter Reading (AMR) or distribution automation systems.

AMI consists of three main features including Smart Meters, Communication Infrastructure and Central Access Server to integrate and manage the information. Smart meters are complicated devices that can perform any data for electronic utilities and also provide two way communication for connecting electric customers to utilities not only for improved billing but also to shape the behavior of customer in a proper manner for grid and environment. This information is used to optimize the engineering of the system, maintenance, customers' services and etc. By creating efficient and reliable two way communication infrastructure, AMI System enables the continuous control and supervision of all components of the power grid from the distribution substations to the consumers in

order to make this section more visible to the administrators. The AMI market life cycle widely varies region wise, while North American region is expected to see a slowdown in smart meter shipments through 2014 to 2019, Europe is expected to hold the largest AMI market share in 2019. According to the reports, the Global AMI market is expected to grow from \$9,319.0 million in 2014 to \$20,029.0 million in 2019 at a compound annual growth rate of 16.5% between 2014 and 2019.

Following Iran's government mandate in 2009 for implementation of Iranian national advanced metering infrastructure (FAHAM Project), Monenco Iran was selected as the supreme consultant company for FAHAM project which consists of approximately 30 Million metering points will be deployed during eight years until 2017.

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New Field



2. Railways

Railways have always played a significant role in the infrastructure development as a fast, reliable and

cost effective means of transport that presents better energy efficiency and less impact on the environment.

The global rail market has been growing significantly and expected to have a dynamic growth in a long-term period. All above, urged Monenco to enter into the railway engineering market as a new target market in 2014. Railway engineering is a multi-faceted engineering discipline dealing with the design, construction and operation of all types of railway systems. Monenco aimed to develop a talented technical team to carry out the related projects in Iran and around the world.

"Design and Supervision of Construction of the second phase of line 1" in Shiraz (Iran) is one of the major projects that led Monenco to enter into the Railways field.

Since Monenco is a leading multidisciplinary engineering company in different fields of activities, offered a comprehensive range of consultancy services for this project including civil engineering, railway electrification and power engineering, mechanical and HVAC, systems engineering, project and construction management, signaling and telecommunications in rail transportation.



Sample Projects



3. Consultancy Services for Saih Al-Khairat in Dhofar Governorate

Start date: 2013

Client: Rural Areas Electricity Co. S.A.O.C (RAECO)

Location: Oman

Description:

Saih Al-Khairat is located in southern Omani province, 180 km north-west of Salalah and 970 km south of Muscat. RAECO has entered into contract with EPC contractor, Global Chemical & Maintenance Systems L.L.C for construction of this power plant under design and supervision of Monenco. This power plant will be connected via the 33kV GIS substation into the local Sub-Transmission system that are owned and operated by Oman Electricity Transmission Company. Monenco is responsible for performing study, design, tender evaluation, and site supervision for construction of power station. The scope of works comprises the provision of all labor equipment, manufacture, works tests insurance, transport to the site, erection and commissioning of 48 MW (6x8MW New D.G. Sets) power station with a 1 MW (2x500 kW) Black Start unit completed with all their auxiliaries under Monenco supervision.



4. Engineering Services for Establishment of 50MW Kahak Wind Farm

Start date: 2013

Client: Mapna Construction & Development Co.

Location: Iran - Qazvin

Description:

This project was the first phase of a wind farm with final capacity of 50 MW. Monenco conducted site selection of this project two years ago. After gathering the data of wind meteorological mast, Monenco performed micrositing including determination of wind turbines position. Each wind turbine has 2.5 MW capacity, 85 m hub height and 104 m rotor diameter. The output energy is transmitted to national grid by a 20/63 kV step-up substation. Internal network of Kahak wind farm, a 20/63 kV step up substation and 63 kV double-circuit over headline with the length of 4 km has been implemented and 8 wind turbines (equal to 40% of total capacity of wind farm) already have been installed and it is predicted to connect wind farm with total capacity to national grid at the end of 2015.



5. Electrical System Studies of Jam Petrochemical Company

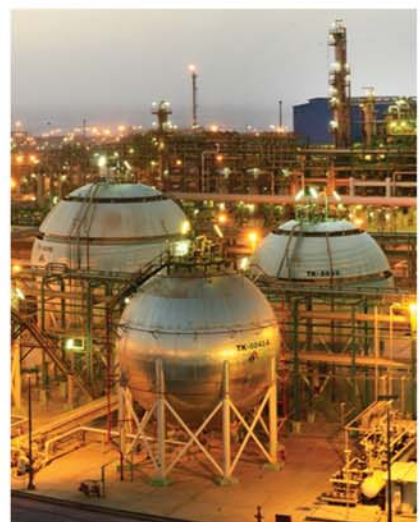
Start date: 2014

Client: Jam Petrochemical Company

Location: Iran - Boushehr

Description:

The main goal of this project is to investigate on the electrical system of Jam Petrochemical Company to identify the weaknesses based on standards indicators and in terms of providing reactive power as well as practical solutions. These studies are based on power systems simulator software which are the perfect tools to organize the existing information and system evaluation. It also offers solutions for protective relays in the areas of risk in the complex. Monenco is responsible for data gathering, Preparing the appropriate database, data entry in appropriate simulator software, system analysis and identification of system weaknesses, identify weaknesses of the system in terms of supplying reactive power and providing effective strategies to improve the system, providing relays protective setting and list of required documents.





6. Definition and Assessment of Key Performance Indicators for Telecommunication Services

Start Date: 2014

Client: Communications Regulatory Authority of the I.R. of Iran

Location: Iran - Tehran

Description:

The purpose of this project is developing the requirements of quality of services for fixed communication network, mobile and postal by analyzing the information contained in the licenses, international standards as well as regulatory experiences of other countries including measurement methods and monitoring which runs in three phases. Communications Regulatory Authority of the I.R. proposed a project to Monenco in order to develop national standards for ICT and supervision on the quality of communications and postal networks.



7. Furnishing Import & Export Stations of Iran Ministry of Petroleum with Custody Metering System

Start date: 2014

Client: Iran Ministry of Petroleum/ NEYRPERSE

Location: Iran - Ardkan

Description:

Custody transfer requires an entire metering system that is designed for applications, not just flow meters. Components of a custody transfer system are typically as multiple meters/Runs, Flow Computers, Analyzer(s) and sampling system(s), calibration devices and supporting automation system.

In this project, Custody Metering System will be designed to be installed at onshore and offshore facilities of Crude Oil and refined petroleum products, NGL and Gas Condensate fields and main oil transmission lines in Iran. Each metering skid has its own metering panel based on turbine/ultrasonic or coriolis type meters which are connected to flow computer installed in the technical building and from this to the main and back up control centers in Tehran through a secure and reliable data exchanging media. The scope of our services in this project is site visit, data gathering, basic and front end engineering endorsement and detailed design of off-skid systems for mentioned sites.



8. Design and Supervision of Construction of Shiraz Railway - second phase of line 1

Start Date: 2014

Client: Shiraz Urban Railway Organization

Location: Iran - Shiraz

Description:

The purpose of this project is to continue the construction of tunnels and stations as well as supplying equipments and facilities of Shiraz railway phase 2 line 1. therefore, It is necessary that the consultant supervise the design, construction and commissioning of the project to monitor the quality and quantity of the work. However, Monenco is responsible to carry out all design and supervision of constructions in this project as well as preparation of tender documents. The main goal of Monenco is to carry out the project in compliance with the modern technologies in terms of functionality and quality while keeping the optimum budget and on schedule timing.



9. Events

■ 29th International Power System Conference and Exhibition

Monenco Iran attended in exhibition of 29th International Power system Conference which was held at Niroo Research Institute in 3 days from Oct 27th till 29th while having its own stand.

International Power System Conference with over 29 years old has a special place in the national and international prestigious conferences including seminars that present and discuss new technologies.

Along with the conference, an exhibition was held as well to highlight the latest technologies offered by approximately 200 plus companies from throughout the world.

Tavanir company is responsible for holding this conference and exhibition.



■ Power and Water Cogeneration Seminar

Nowadays, water crisis and finding a solution to overcome it, is one of the most important issues in Iran. Power and Water Cogeneration Seminar was proposed by Monenco to be held in the International Power System Conference consisted of Keynote speech (Mapna) and six main topics: Water crisis in Iran and producing desalted water from non-conventional water resources (Monenco), The experience of Qeshm power and water cogeneration plant (Mapna), Technical and economical modeling of hybrid desalination plants (Monenco), Solutions for desalting sea water using Mapna power cycles (Mapna), Using reverse osmosis technology in desalination plants (Monenco), Hybrid desalination systems for recovering the energy of gas turbines exhaust (Monenco).



10. Clients Perspective Modern Steel Mills LLC, Oman



The awareness for compliance to the Power Quality standards is growing manifold. Increasing use of electronics

Equipments in industries for precise process control to achieve better quality at reduced cost is demanding supply of clean power to ensure reliability of such devices. Local Utility authorities are imposing stringent stipulations on kind of industries which are susceptible to create power quality disturbances.

The consultants who are in the business of Network and System Studies must shoulder the responsibility of guiding and assisting their clients seeking solutions to resolve power quality issues through precise analysis using appropriate latest techniques. Such consultants should always update their facilities and competency to facilitate providing feasible realistic solutions.

Modern Steel, Oman have engaged Monenco as its consultant seeking solution to resolve the Power Quality Issues. The arc furnace operation of Modern Steel is injecting disturbances in the grid. Flicker is the major parameter which needs to be limited. Monenco has done extensive study considering various scenarios and expected PQ parameters are derived. DigSilent, PSCAD and MATLAB were the applications / techniques used for simulating the results. Accurate modelling of Arc Furnace was a challenging task.

With the study results available, Modern Steel is now looking forward to implement the most promising scheme. Modern Steel is confident that the results of implemented scheme will be better than simulated.

Modern Steel Mills L.L.C. (Oman)
Hawal R.P.
DGM – Electrical

Reader Support

If more information is required about the topics, easily indicate the number of the title in the following table and send it to the address below or info@monenco.com.

1	2	3	4	5	6	7	8	9	10
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