Cerro Prieto. PV Technology Evaluation Plant

LOCATION:
Cerro Prieto C.G, Mexicali, Baja California

SUBMITTING FIRM:
Iberdrola Ingeniería Y Construcción, S.A.U.

FIDIC MEMBER:
Tecniberia
A. Innovation

Cerro Prieto is the most ambitious experimental plant in PV technologies in the world, completely aligned with CFE strategy aimed at the search of the most sustainable and efficient mix of energy generation (in this sense, CFE has a great tradition as evidence the developments in geothermal generation, a world reference in the technology since nineties).

A photovoltaic power station is a power station using photovoltaic modules and inverters for utility scale electricity generation. At this moment, there are great power plants, but it is a general assumption that would be necessary a further technological development in order to determine a standard for a real and complete solar integration in the generation mix. R&D developments (mainly through demonstration plant) are necessary if PV technology would run as a relevant one in the global generation mix.

Cerro Prieto PV plant comprises four subplants, one for a different technology evaluation, exploring critical technological alternatives that determine PV Plant performance: PV modules technologies and sun trackers.

First subplant uses one axis tracking and polycrystalline silicon modules; other, two axis tracking and polycrystalline silicon modules. Next subplant uses thin film modules, with one axis tracking; and the last one uses Concentrated PV modules with two axis tracking.

This plant is a world reference in R&D developments in PV sector.
B. Quality

CFE is a company that emphasizes the use of high quality standards in all its facilities. Maintenance of an infrastructure made up of 218 generating plants, having an installed capacity of 53114 megawatts, more than 859,142 Km. of power lines that transmit and distribute electric power and almost 36.26 million customers, requires these quality requirements.

IBERDROLA Ingeniería y Construcción, as the engineering company of IBERDROLA Group, shares these concerns and exigencies and self-imposes a Quality Policy, approved by the Boards of Director, that are committed to strict compliance with current legislation and with other commitments and requirements undertaken voluntarily.

The Quality Policy is based on the following basic action principles:

1. Know the expectations of customers of the Group, both internal and external, and those of other stakeholders, in order to deliver products and services to their full satisfaction.
2. Promote activities to satisfy or even exceed the expectations of the customers of the Group, its employees, and other stakeholders.
3. Enhance the culture of continuous improvement and excellence in management in order to increase competitiveness and the creation of value for shareholders, employees, and other stakeholders.
4. Encourage the use of quality management systems within the various organizations of the Group.
5. Foster the involvement of the Group’s employees by means of teamwork, an appropriate flow of information, internal communication, training, and recognition of achievements.

This Quality Policy was initially approved by the Board of Directors on 18 December 2007 and was last amended on 18 February 2014.

Certificates according to Quality:
- Certificate of Approval ISO 9001:2008 (Spain)
- Certificate of Approval ISO 9001:2008 (Spain - Iberdrola Ingeniería Explotación)
- Certificate of Approval ISO 9001:2008 (Mexico)

C. Professional Excellence

The team at Iberdrola Engineering & Construction numbered more than 2,300 employees at the close of 2013. This team comprised a high percentage of M.Sc. graduates (over 80%) and a representative percentage of PhD (over 1%). Over 10% of the team works every year in R&D projects, and 4% average time dedicated to training tasks.

The commitment shown to our human team is consistent with that of the IBERDROLA Group and is aimed at creating a working environment of the highest quality, governed by the following principles:
PRINCIPLES

LOYALTY
Seeking a confluence of interests between the company and its employees, thus generating mutual trust

TEAM SPIRIT
Building teams on the basis of trust, credibility and example, encouraging communication and mutual support

WORK
Creating maximum value for our customers, shareholders, workers and society in general

SKILLS
Know-how combined with commitment and the achievement of results provides us with a competitive advantage. It is everyone’s responsibility to increase and nurture the best in all of us and our co-workers

HONESTY
The creation of value for all in a sustainable way requires ethical, honorable and socially responsible behavior

D. Transparency and integrity

CFE also has special concerns with the transparency of their contracts and inversion activities. One of the main points in its webpage is transparency aspects:
http://www.cfe.gob.mx/transparencia/Transparencia/Paginas/Transparencia.aspx

Behind each aspect (norms, management scheme-Committee, Policy, management index and KPI, etc.) there is a structure for allowing the public consultation of projects data and information.

In order to carry out these high standard requirements, IBERDROLA Ingeniería y Construcción has a governance policy integrated on IBERDROLA Group structure. Our human team has been
created in response to the Company’s commitment to its principal value: people and their integrity.

The actions of all of the Company’s employees, particularly with regard to the defense of human rights, are regulated in the Code of Ethics for Iberdrola, S.A. and its Group of Companies.

The practices of the IBERDROLA Group are also in line with:

- The Global Pact
- The OECD’s Guidelines for Multinational Enterprises and the Tripartite Declaration of Principles concerning Multinational Enterprises
- The social policies of the International Labour Organisation

These universal principles and the Company’s General Policy on Corporate Social responsibility are what guide the IBERDROLA Group in ensuring that its actions and those of its employees exclude any discrimination on grounds of race, colour, gender, language, religion, political opinion, national or social origin, social condition, background, disability, health, marital status, pregnancy, sexual orientation or any other condition.

The internal codes for transparency and integrity are frequently updated, as described in:


Code of Ethics
This restated text was adopted by the Board of Directors of Iberdrola Ingeniería at its meeting of 13/02/14.

Regulations of the Compliance Unit
This restated text was adopted by the Board of Directors of Iberdrola Ingeniería at its meeting of 13/02/14.

Procedure for Conflicts of interest and Related-Party Transactions with Directors, Significant Shareholders, and Senior Officers
This restated text was adopted by the Board of Directors of Iberdrola Ingeniería at its meeting of 13/02/14.

Internal Regulations for Conduct in the Securities Markets
This restated text was adopted by the Board of Directors of Iberdrola Ingeniería at its meeting of 28/04/2014.

Internal Regulations for the Processing of inside Information
This restated text was adopted by the Board of Directors of Iberdrola Ingeniería at its meeting of 11/02/13.

Summary of the Action Protocol for Investigating Possible Unlawful Uses of inside Information
This Protocol and its Summary were adopted by Board of Directors of Iberdrola Ingeniería at its meeting of 11/02/13.

Action Protocol for the Management of News and Rumours
This restated text was adopted by the Board of Directors of Iberdrola Ingeniería at its meeting of 11/02/13.
E. Sustainability and respect for the environment

Another confluence point between CFE and IBERDROLA Group is the sustainability and respect for the environment, that have been one of the identity differential characteristics of the company.

On 18 December 2007, the Company's Board of Directors approved the "Grupo IBERDROLA Policy Structure". This structure includes the Environmental, Biodiversity and against Climate Change Policies, which establish the principals that enable the Company to continue to make progress along the line of improvement in its Environmental management. In the case of the Environmental Policy, the Policy that has been in effect since 2004 was updated, the Biodiversity Policy was published for the first time in 2008 and the Policy against Climate Change has been published on December 2009 following approval by the Board of Directors.

Renewable energy is today one of the most accepted technologies that contributes to sustainability and the efforts in order to foster photovoltaic energy to the level of other renewables, such as wind energy, must be considered as a worthy initiative chasing sustainability and companies, such as CFE and IBERDROLA working together for this purpose is a big value for environmental care.

In Cerro Prieto project, one of the critical aspects was the assurance of the environment compliance, more than legal requirements (10% of the technical specification was related to environmental aspects). Specifically, and according to the LGEEPA (Law for Ecological Equilibrium and Environment Protection, articles 38, 150-153, 155 y 156) the project pay special attention to environmental impact, waste treatment, air emissions and all other related aspects.