

## **AMAD – Saudi Arabia: Workshop on “International Experiences for Developing Electrical Safety System” Riyadh, 16-17 February 2016**

**Topic:**

“Reviewing International Experiences in Developing the Electrical Safety System”

**About:**

This Workshop organized in the context of the continual pursuit of the Ministry of Water and Electricity (MOWE) in the Kingdom of Saudi Arabia (KSA) to achieve electrical safety together with the MOWE’s initiative to find out the appropriate means to reduce electrical hazards. As the MOWE is the supervisor of the Electricity Sector, and in execution of its civil defense tasks, the MOWE activates its role in drafting the appropriate legislations and regulations for the purpose of assisting the concerned organizations in protecting electricity utilities, of the sectors of electric power generation, transmission and distribution, and their personnel from potential hazards, work injuries and occupational diseases.

In this Workshop, a number experiences applied by experienced organizations, internationally and regionally, will be reviewed. Such experiences will be well-discussed along with clarifying the procedures followed by such organizations in addition to the obstacles faced thereby and the scientific methods to overcome such obstacles. This is for the purpose of setting a robust technical rule as a basis of preparing mechanisms and work procedures to be applied in order to ensure safety in the Electrical System.

**Organizers:**

Ministry of Water and Electricity (MOWE).

**Supervisor:**

AMAD for Technical Consultations and Laboratories (AMAD).

**Objectives:**

- Benefiting from International and Regional experiences in building national mechanisms for developing the systems of inspecting the existing building and the procedures of auditing engineering planning of the new buildings.
- Being familiar with the international and regional experiences in terms of preparing national mechanisms for protecting consumers through verifying the conformity of market electric equipment and devices with the approved standards.
- Guaranteeing more protection by ensuring the procedures followed for market survey and controlling the nonconformities of electrical goods and products after reviewing the procedures internationally applicable to this field and the benefits of such procedures.
- Mechanisms and systems of the personnel involved in designing and executing electrical Wiring.
- Practices of verifying the conformity of electrical equipment and devices in the market.
- Systems of inspecting the existing building and the procedures of auditing engineering Drawings of new building
- Procedures followed for surveying the market and controlling the nonconformities of electrical goods and products.

## The final Program was the following

| First day: Tuesday 7 Jumada First 1437H, Corresponding to February 16, 2016G |   |  |
|--|---|--|
| 08:00 - 08:45  | Registration  |  |
| 08:45 - 09:00  | Opening Speech  | Dr.Saleh Bin Hussein Al Awaji<br>Deputy Minister for Water and Electricity |
| 09:00 - 10:00  | Introduction and explanation of the Project Tasks, Phases and progress of the Project work plan                                   | Prof. Dr. Mohamed Zahran   |
| 10:00 - 10:30  | Review the experience of France; Promotelec Observatory; barometer compulsory electric diagnosis, data of the ONSE                | Mr. Dominique DESMOULINS   |
| 10:30 - 10:45  | Discussion  |  |
| 10:45 - 11:15  | Review the experience of USA; Electrical Safety System Infrastructure for the United States of America                            | Mr. Gene Eckhart   |
| 11:15 - 11:30  | Discussion  |  |
| 11:30 - 12:30  | Coffee Break and A break for prayer   |  |
| 12:30 - 12:50  | Review the experience of Group of Countries on Africa; Electrical counterfeiting in Group of Countries Africa                     | Mr. Dominique DESMOULINS   |
| 12:50 - 13:00  | Discussion  |  |
| 13:00 - 13:30  | Review of Cameroon experience; Domestic Electrical Installation In Cameroon   | Mr. Honore Demenou Tapamo  |
| 13:30 - 13:40  | Discussion  |  |
| 13:40 - 14:10  | Review the experience of Korea; Introduction of Periodic Safety Inspection system on Electrical Installation in Republic of Korea | Mr. Kwang Su, Kim  |
| 14:10 - 14:20  | Discussion  |  |
| 14:20 - 14:50  | Review of Canadian experience; A Case Study   | Mrs. Maria Iafano  |
| 14:50 - 15:00  | Discussion  |  |
| 15:00  | Lunch Break   |  |

| Second day: Wednesday 8 Jumada First 1437H, Corresponding to February 17, 2016G  |  |                     |
|--|--|---------------------|
| 08:00 - 08:30  | Registration   |                     |
| 08:30 - 09:30  | Electrical Safety introduction                       | Prof. Dr. M. Zahran |
| International Experience in Qualification and License of Electrical Engineers and Technicians                                  |  |                     |
| 09:30 - 09:50  | Experience of: Schneider France and Purdue USA       | Eng. M. Mostafa     |
| 09:50 - 10:10  | Experience of: Los Alamos USA and Finland            | Eng. R. Elkhadrawy  |
| 10:10 - 10:30  | Experience of: Santa Anna Canada and Michigan USA    | Eng. A. Aboelkhair  |
| 10:30 - 10:45  | Discussion   |                     |
| International Experience in Market surveillance for tracking violations and detection of nonconformable electrical equipments. |  |                     |
| 10:45 - 11:05  | Experience of: Auckland New Zealand, Japan and Korea | Eng. A. Aboelkhair  |
| 11:05 - 11:25  | Experience of: CCC China and South Australia         | Eng. M. Mostafa     |
| 11:25 - 11:45  | Experience of: UK and European Community             | Eng. R. Elkhadrawy  |
| 11:45 - 12:00  | Discussion   |                     |
| 12:00 - 13:00  | Coffee Break and A break for prayer                  |                     |
| International Experience in periodic safety inspection on electrical installation of existing Building to insure its safety.   |  |                     |
| 13:00 - 13:25  | Experience of: Belgium, India and Hong Kong          | Eng. M. Mostafa     |
| 13:25 - 13:50  | Experience of: Wales UK and Iceland                  | Eng. R. Elkhadrawy  |
| 13:50 - 14:15  | Experience of: Scotland                              | Eng. A. Aboelkhair  |
| 14:00 - 14:45  | Discussion   |                     |
| 14:45  | Lunch Time   |                     |

## Attendees



There were 80 persons, people from governmental, Simi governmental organization, his Excellency Governor of the Saudi Standardization Organization (SASO), His Excellency Governor of Saudi Electricity & Cogeneration Regulatory Authority (ECRA) Cooperation, The Deputy Minister of Water and Electricity (MoWE) for the Electricity affairs and the assistance General Manager of Civil Defence for Safety.

Many experts from the KSA, neighbor countries and all over the world.

FISUEL was represented by M. Dominique Desmoulins (Promotelec - France), M Honoré Demenou Tapamo (ARSEL – Cameroon) and M. Kim, James Kwangsu (Kesco – Republic of Korea).

## Recommendations of the Workshop on the Electrical Safety System Development

- 1- To ensure that the project aims at meeting the requirements of related bodies and seeks to implement an electrical safety system in which efforts of such bodies integrate and focus on checking electrical extensions within buildings to ensure their safety by the inspection bodies accredited according to the regulation of inspection bodies accreditation issued by the Saudi Standards, Metrology and Quality Organization (SASO), and the Saudi Accreditation Committee (SAC), as well as qualifying the personnel of electrical extensions execution, preparing a licensing system to such activity and verifying the conformity of appliances and equipment to the applicable standards;
- 2- To benefit from efforts previously exerted by SASO, the General Directorate of Civil Defense, the Ministry of Commerce and Industry, the Saudi Customs, the Electricity and the Cogeneration Regulatory Authority, the Ministry of Municipal and Rural Affairs, etc., along with facilitating the accessibility to such efforts to prepare improved mechanisms and agreed reliable information programs and systems applicable with respect to the latest developments including, for example, the Saudi Building Code. This is in addition to approving SASO's proposals on benefiting from the results of the Electrical Saudi Building Code (401) study, prepared by SASO, considering it as a starting point for accomplishing the project related tasks, ensuring the investment of previous efforts and avoiding repetition;
- 3- To emphasize the importance of developing a website including the electrical safety databases, to serve as a reliable source for correct information and electronic platform for information exchange between the electrical safety-related bodies;
- 4- To consider references to the source of the official information published on the aforesaid website by including links to the related bodies, ordered by specialty. Such website shall be accessible to these bodies to provide it with the data

and information they deem appropriate for publishing, or to officially obtain professional information via the aforesaid links by a mechanism to be agreed upon;

- 5- The website shall be only accessible to the project team members of experts from related bodies to review the project outputs. The website shall be publicly accessible after approving and launching it at the end of the project;
- 6- To emphasize that the task of testing electrical products samples is only intended for studying purposes, and that it aims at identifying the most important nonconformities that may cause electrical hazards. Also to emphasize that such task is not reliable for classifying products or identifying the products nonconforming to the said standards. Then, it will not be published on the project website;
- 7- To emphasize the importance of benefiting from the international experiences reviewed in the workshop, and of studying them carefully to identify their advantages and disadvantages, then picking the experiences appropriate for the KSA's status, considering the importance of constant communication with the participated foreign bodies to provide the project team with any information or proposals that would help achieve the study purposes; and
- 8- To emphasize the purposes of the project, including the development of an official entity gathering all related bodies, for efforts integration, and the coordination between such bodies to ensure the best execution of the guides, especially, those related to qualifying the personnel involved in designing and executing electrical extensions, inspecting the existing buildings and plans, surveying the markets, controlling nonconformities and licensing inspection bodies.



# **FISUEL Africa WG – 2015 Synthesis**

**Synthesis of AWG leader, M Mamadou SYLLA, Manager of SECUREL LBTP in COTE D'IVOIRE**

## **INTRODUCTION**

The Africa Working Group (AWG), composed of 7 members (LBTP-SECUREL, ARSEL, CONSUELEC, CONTRELEC, PROQUELEC, SIEIN, ZENTRUM TECHNOLOGY) organize annual meetings within the framework of the activities of the FISUEL. These meetings constitute a frame of exchanges of experiences and mutualization of knowledge for the resolution of the problems connected to the electrical safety.

During year 2015, the AWG organized three meetings in Cote d'Ivoire (in February, 2015), in Senegal (in April, 2015) and in Cameroon (in October, 2015).

## **PURPOSE**

The main objective of these meetings is to create, to favor, to maintain and to improve the relations between the experts and especially to share the best experiences and best practice regarding electrical safety. These days should allow the authorities of countries not inclining system of inspection to become aware of the necessity of appropriating and especially of making compulsory the control of the electric installations before their switched on first one.

## **ROUND TABLE IN ABIDJAN - COTE D'IVOIRE**

These days of exchanges articulated around two major events, a round table and the various presentations of the experts followed by exchanges with the cooperation of three countries: Cote d'Ivoire, Cameroon and Senegal. The participation of several experts stemming from ministries was noted (Energy and Oil, Trades, Head office of the Energy) and structures (Cote d'Ivoire Energy, ANARE Cote d'Ivoire (National Authority of Cote d'Ivoire of regulation of the sector of electricity), CODINORM (Association of Standardization of Cote d'Ivoire), The Cable-manufacturing plants of Senegal and Legrand of Senegal. Ten communications were presented around four themes.

### **Several recommendations were formulated :**

- Develop a strategy of collection of data concerning the accidents of electrical origin ;
- Lead or drive a plea with the governments and the sub-regional organizations to generalize the compulsory control of the installations and the electrical equipment ;
- Set up infrastructures of quality control of the electrical equipment in all the countries;
- Encourage the governments to strengthen the distribution networks and to facilitate the social connections;
- Promote the initiatives of support to the extension of networks and connections in outlying suburbs.

## **ROUND TABLE IN DAKAR-SENEGAL**

The round table in Dakar registered the participation of four countries : Senegal, Côte d'Ivoire, Cameroon and Benin. Two modules of training were distributed and nine communications were presented.

### **Several recommendations were formulated :**

- Propose to competent authorities the taking of a decree making compulsory the installation of lightning conductors and surge protective device in the ERP (public opened building) and of surge protective device in housing;
- Strengthen the capacities of the members on the external protection (lightning conductor) and on the internal protection (surge protective device);
- Strengthen the capacities of the existing structures of control.
- Mutualize the national standards.
- Harmonize the strategies of fighting against the counterfeits within the space UEMOA ( The West-African economic and monetary Union)
- Set up infrastructures of quality control
- Apply the new customs code of 2014 (Senegal)
- Lead awareness campaigns with the consumers and the installers for the choice of quality products

The last day was dedicated to the meeting of the AWG. The outcome of these works was considered satisfactory, when considering the quality of the performances of the various experts and the number of participants of the professionals of the sector. LBTP / SECUREL pointed out that the frequency of the meetings does not allow all the countries to be present, because of the high cost of the costs of travel and accommodation which are chargeable to every member. For that purpose, two annual meetings of the AWG were proposed instead of three at present. It was also proposed that the first one is held at the end of the second quarter, since the budgets of the governments are not all voted before this period. With the aim to increase the resources and to have many members, the representative of the president of the AWG

exhorted all the member countries to set up a politics of prospecting of membership. He exhorted the members to make diligence to answer e-mails, because index cards which were passed on them for opinion stayed without continuation.

#### **MEETING OF THE AWG-FISUEL/DOUALA-CAMEROON**

The AWG of Douala concerned essentially the training delivered by PROMOTELEC. On June 16th, 2015, an agreement between PROMOTELEC and 5 members of the AWG was signed. This agreement has for object to strengthen the capacities of the technical staffs of PROQUELEC, LBTP, TECHNOZ, CONTRELEC and SIEIN and it by the experts of PROMOTELEC. The first training took place from 20 till 24 July 2015 at PROMOTELEC in France and that of Douala had to allow the absentees in PARIS to catch up the delay on the others.

#### **Conclusion**

In the term of the three AWG meetings organized in Africa in 2015, it appears that :

- These meetings of exchanges of experiences are enriching for the members of the AWG of FISUEL and especially for all the actors of the sector of the electricity, The LBTP, in its president's quality of the AWG, was congratulated for its capacity with mobilizing the means for the organization and the success of these meetings.
- The LBTP / SECUREL remains one of the reference structures in the sub-region having a system of effective inspection and constitute the focal point for the implementation of system of inspection of the electric installations before their switched on and the audit of the old installations.
- PROQUELEC has to pursue its actions with the aim of the taking of the Decree making compulsory the control of the installation.
- The AWG shall favour the exchanges between the structures of control of member countries in playing a major role.



## **IEC Regional Centre for Africa opening in Nairobi in 2015**

### **Real energy access and improved product safety**

Geneva, Switzerland, Nairobi Kenya, 2015-11-02 – Today, a major step has been taken towards greater access to electric power, safer electric and electronic products and overall better conditions for economic development, with the official opening of the IEC (International Electrotechnical Commission) Africa Regional Centre (IEC-AFRC).

The official opening ceremony took place in Nairobi, Kenya on Monday 2 November 2015, in the presence of highest level government officials of Kenya, the IEC Vice President, IEC General Secretary, industry experts, IEC Members and Affiliate Countries.

#### **Access to energy**

The link between energy and poverty reduction is well established. Electricity permits study after sunset, foods and medicines to be refrigerated and drives millions of devices, electric motors and pumps in hospitals, manufacturing and agriculture. A reliable electricity supply improves basic services such as healthcare and increases access to clean drinking water, safer food, computing or mobile charging. With it companies are able to produce better products and individuals have greater income potential.

In September, the United Nations adopted an expansive set of Sustainable Development Goals (SDGs) that aim to “end poverty in all its forms” by 2030. The United Nations has recognized Energy as the cornerstone: “no other SDG is more important for Africa” said Akinwumi Adesina, President of the African Development Bank.

“IEC work directly underpins SDG 7, which aims to close the energy gap and to ensure access to affordable, sustainable, reliable and modern energy services for all. Energy is the key to the economic development of all countries in Africa,” said Frans Vreeswijk, IEC General Secretary & CEO. “Today only 24% of the population of sub-Saharan countries have reliable access to electric energy. The IEC together with its Regional Centre for Africa is there to provide the technical foundation and support all African countries in building universal access to sustainable electric power faster.”

#### **Innovation and a level playing field**

As the regional focal point for Africa, the IEC Africa Regional Centre (IEC-AFRC) will provide training and mentoring to assist countries in the region in the adoption and use of IEC International Standards and Conformity Assessment Systems. It will cooperate closely with the African Electrotechnical Standardization Commission (AFSEC) to promote participation in and contribution to IEC work. The Centre will be run under the joint-leadership of Evah Oduor, a well-known Kenyan

with extensive know-how and expertise in standardization work, who has been IEC Coordinator for Africa since 2008, and Francois Yapoh Ahoti who is joining the IEC from United Nations Industrial Development Organization (UNIDO) where he worked as a Chief Technical Adviser in Standardization and Quality.

### **Africa part of the global platform**

Through the IEC global platform thousands of experts from around the world contribute to the broad roll-out of new electric, electronic and Renewable Energy technologies, including mini- and Microgrids\* in developing countries. Examples of IEC work include Renewable Energy generation from wind, ocean and solar power both for off-grid and on-grid use. This work enables the large-scale adoption and use of related technologies.

The IEC<sup>1</sup> is a partner of the United Nations Sustainable Energy for All Program. It provides, for example, a series of Technical Specifications with a focus on off-grid energy access and, in particular, off-grid pico-solar products such as solar lanterns or small solar modules. In this context the IEC provides the standardized.



## **General Assembly in Morocco invited by Fenelec**



The 2016 Annual General Meeting of FISUEL will take place in Morocco hosted by Fenelec (National Federation of Electricity, Electronics and Renewable energies) from May 9 to 13<sup>th</sup>, 2016. The event will include the meetings of the 3 working groups (Europe, Africa and Asia/Pacific), the Board meeting, the General Assembly, the symposium and a visit.

Save the dates !



### **Fisuel present agenda in 2016**

Board meeting : May 9 pm 2016 in Morocco

Africa, Asia/Pacific and Europe working groups : May 10 am 2016 in Morocco

General Assembly : May 10 pm 2016 in Morocco

Fisuel symposium : May 11 and 12 2016 in Morocco

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<sup>1</sup> IEC (International Electrotechnical Commission) = 166 countries, 98% of the world population & 96% of world energy generation. [www.iec.ch](http://www.iec.ch)