

# **AFSEC WORKSHOP**

**Nairobi, 5 to 9 Sept, 2011**

## **Overview of Technical Committee n. 8 of the International Electrotechnical Commission (IEC-TC 8)**

# IEC TC8

## System aspects of electrical energy supply

# Scope

**To prepare and coordinate, in co-operation with other TC/SCs, the development of international standards and other deliverables with emphasis on overall system aspects of electricity supply systems and acceptable balance between cost and quality for the users of electrical energy.**

**Electricity supply system encompasses transmission and distribution networks and connected user installations (generators and loads) with their network interfaces.**

# Main system aspects

- **Terminology**
- **Electrical system reliability**
- **Connection practices**
- **Operation**
- **Network responsibility**

# Main system aspects (cont'd)

- **Metering**
- **Communication**
- **Data exchange and balancing**
- **Charging mechanisms for use of public supply systems**
- **Outsourcing of network related services**
- **Characteristics of energy supply**

# Working Groups



## **WG 1: “terminology”**

**Task: to provide the definition of a list of terms permitting a common understanding of essential notions within the TC8 scope.**

# Working Groups

## **WG01 - Documents:**

**8/1189/DC “TC 8/WG 1: Terminology - New structure of IEC 60050-6xx - Parts: Electric power system”, Circulation: 19 March 2004, Closing: 21 May 2004**

**8/1192/INF “Report on the activity of WG1 to TC8 - Terminology” Circulated 17/9/04**

**8WG1(IEV617)7: ORGANISATION/MARKET OF ELECTRICITY”: registered as a TC1 project**



# Working Groups

## Meetings:

**Paris, 23/11/04**

**Cape Town 17/10/05**

# Ad Hoc Groups

- **AHG 1: “Working method of TC8”**
- **AHG 2: “Connection to electricity supply systems”**
- **AHG 3: “Characteristics of energy supplied “**

# AHG 1:

## “Working method of TC8”

**Task: to Prepare a framework document as proposed by the SMB Ad hoc WG and define the working method of TC8.**

# AHG 1: “Working method of TC8”

## Documents:

**8/1188/INF “Standards Framework and Methodology for the development of International Standards needed to facilitate the functioning of electricity supply systems in liberalised market environment”. Circulated 19/12/03**

# AHG 1: “Working method of TC8”

**Work in progress:**

**AHG1 will prepare within march 2005 a white paper to be circulated to NC in order to clarify in which fields TC8 intend to focus its activity in the next two years**

# AHG 1: “Working method of TC8”

**meetings:**

**Paris, 23/11/04**

**Cape Town, 19/10/05**

# AHG 2: “Connection to electricity supply systems”

**Task: to make a survey concerning the connection practices in different countries and regions in the world. In the future a NWIP will be circulated based on this work. After the approval of NC's this will lead in the transformation of the AHG into a PT.**

# AHG 2: “Connection to electricity supply systems”

**Meetings:**

**Paris, 23/11/04**

**Cape Town, 19/10/05**



# AHG 2: “Connection to electricity supply systems”

**“Ad-Hoc Group 2 of TC8 was established to explore the scope for developing standards governing the planning and design of connections to Transmission and Distribution Networks”**

# AHG 2: “Connection to electricity supply systems”

**“An initial questionnaire was produced and circulated to National Committees to identify the approaches to regulating connections to the electricity network ...”**

# AHG 2:

## “Connection to electricity supply systems”

**“The responses to the questionnaire were ... presented to a meeting of the ad-hoc group held in Brussels on 31 May 2004 ... It was agreed ... that ... connection of load ... already addressed ... However, ... feeling of the group ... urgent need to address the connection of generation ...”**

# AHG 2:

## “Connection to electricity supply systems”

**“A second questionnaire was formulated ... to determine ... issues affecting ... initial connection ... and ... management of the network when the generation is connected ...”**

# AHG 2:

## “Connection to electricity supply systems”

**“At a second meeting of Ad-Hoc Group 2 the results of the second questionnaire were reviewed. It was agreed that ... there is scope to develop a common approach to the connection and management of ‘non-dispatched’ generation up to 10MW ... and ... up to and including ... 35kV”**

# AHG 2:

## “Connection to electricity supply systems”

**“... Units ... subjected to dispatch ... and ... complex ‘active’ connection requirements could be contemplated when the output of this proposal has ... shown to have delivered a benefit to the marketplace”**

# AHG 2:

## “Connection to electricity supply systems”

**“... there are a number of ... documents already available in countries which have participated in the Ad-Hoc Group ... This indicates that the subject ... has reached a level of maturity making it possible to explore the various different approaches ...”**

# AHG 2:

## “Connection to electricity supply systems”

**“...the first task of an international working ... collect more information on the various connection practices ... to look for areas of consistency ... to understand the reasons for any areas of difference ... when such a technical report has been produced ... should a review and update into a technical standard be considered”**



# AHG 2:

## “Connection to electricity supply systems”

**“...technical report ... connection requirements for Distributed Generation, outlining ... consistency ... highlighting ... difference ... delivers a number of benefits...**

**highlight the areas where consistency of approach exists ... would be of benefit to manufacturers and installers wishing to operate across different markets...**

**Distribution Network Operators would benefit from the opportunity to explore different approaches ... ”**

# AHG 2: “Connection to electricity supply systems”

**“It is proposed to produce a Technical Report ...  
alternative approaches ... connection of  
distributed generation in distribution networks ...  
addressing areas of commonality as well as  
differences”**

# AHG 2:

## “Connection to electricity supply systems”

**“The Technical Report will address ... ‘non-dispatched’ distributed generation with an aggregate output in the range 10kW – 10 MW and ... up to and including 35 kV at the point of common coupling ... work is being carried out in Cenelec ... standard ... distributed generation ... Low Voltage ... up to 16A ...**

# AHG 2: “Connection to electricity supply systems”

**“... the Technical Report will describe the connection issues common to all forms of distributed generation in the main body of the report. Additional issues ... particular prime mover or ... particular connection technology ... separate Annexes.”**

# AHG 3

## “ Characteristics of energy supplied”

**Task:to make a report in order to have a common understanding on characteristics of voltage clarifying the differences between quality of supply and EMC. Take care of future maintenance of publication IEC 60038.**

# AHG 3

## “ Characteristics of energy supplied”

### **Documents:**

**8/1195/INF “Report on the activity of AHG3 to TC8 - Characteristics of energy supplied” , circulated 17/9/04**

# AHG 3

## “ Characteristics of energy supplied”

**Meetings:**

**Paris 24/11/03**

**Cape Town 17/10/05**

# AHG 3

## “ Characteristics of energy supplied”

### **Work in progress:**

**AHG3 will prepare the request of items relevant to low frequency EMC of generating units to be dealt with by SC 77A.**

**Maintenance of the standards IEC 60059 Ed.2.0, IEC 60196 Ed.1.0 and IEC 60038 Ed.6.2 to be carried out by a MT**



# Present organization of TC8

**WG1: Terminology**

**WG2: HV systems and transmission aspects**

**WG3: MV-LV systems and transmission aspects**

# **Present organization of TC8 (cont'd)**

**AHG5: HVDC system aspects**

**MT1: maintenance of Standards IEC  
60038, IEC 60059, IEC 60196**

**PT1: connection of distributed  
generation to the transmission network**