

# Status of IEC TC 105

US DOE Fuel Cells Summit VI

May 30, 2002

David R. Conover

IEC TC 105 US TAG DTA



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

**IEC TC 105**  
**[www.iec.ch](http://www.iec.ch)**

***Scope*** - To prepare international standards regarding fuel cell technologies for all commercial fuel cell applications such as stationary, transportation, and portable power generation systems

***Membership*** - CA, CN, FR, DE, IT, JP, NL, CH, GB, US, SP, DN, AU, and KR

### ***Liaison Committees***

- IEC TC 69 (electric vehicles)
- ISO TC 22 SC 21 (electric road vehicles)
- ISO TC 197 (hydrogen)
- IEC TC 31 (electrical apparatus in explosive atmospheres)

## **•U.S. Technical Advisory Group**

- Monitors IEC TC 105 activities**
- Determines U.S. position on IEC TC 105 efforts**
- Supports U.S. input to IEC TC 105 efforts**
- Provides for U.S. representation to meetings**
- Membership to be balanced and participation open**
- First meeting March 13, 2001**
- Kelvin Hecht, Chair**
- Steve Kazubski (CSA), Secretary**
- 15 voting members**
- 17 non-voting members on one or more TC WGs**

# IEC TC 105 Structure

**IEC TC 105**  
 Chair: John Bossert, CA  
 Secretary: Werner Tillmetz, DE  
 Ass. Secr.: Andreas Piepereit, DE

**Definitions (US)**  
 ad hoc WG #1

**FC Module (DE)**  
 ad hoc WG #2

**Stationary  
FC System**

**FC System  
in Transprt.**

**Portable  
FC System**

**Safety (US)**  
 WG #3

**FC System  
for  
Propulsion**

**Performance (JP)**  
 WG #4

**Auxiliary  
Power Unit**

**Installation (US)**  
 WG #5

**FC Syst.  
Integration  
into Road  
Vehicles**

*Together with  
ISO TC 22*

**Markings**

**Interfaces**



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- **First meeting February 2000**
- **Second meeting September 2001**
- **Third meeting scheduled June 13-14, 2002**
  - **Activity report of WGs 3, 5, 6 and 7**
  - **Discussion of WG 1 Technical Report**
  - **Discussion of WG 2 Committee Draft**
  - **Discussion of WG 4 Committee Draft**
  - **Activities with ISO TC 197 and SAE**
  - **Discussion of program of work and strategic policy statement**



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## **Working Group 1 - Terminology**

**Convenor - US with 2 U.S. experts on the WG**

**Summary - A technical report that all other working groups can use and which provides standard terms and definitions relating to fuel cells**

### **Status**

- Oxford and IEC Dictionaries, US FCC Glossary, JSA TCR 0001, and SAE J2574 used as a starting point**
- Technical Report (TR) available for committee review from 3/8/02 to 6/7/02**
- Revised draft of TR to be discussed by IEC TC 105 at June 2002 IEC TC 105 meeting**



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## **Working Group 1 - Terminology**

**–Introduction**

**–Diagrams**

**–Definitions**

**–Equations**

**1.1 Scope.** This report provides uniform terminology in the forms of diagrams, definitions and equations related to fuel cell technologies in all applications including but not limited to stationary power, transportation and portable power applications. Not found here are words and phrases which can be found in standard dictionaries, engineering references or IEC's Multilingual Dictionary on Electricity, Electronics and Telecommunications.

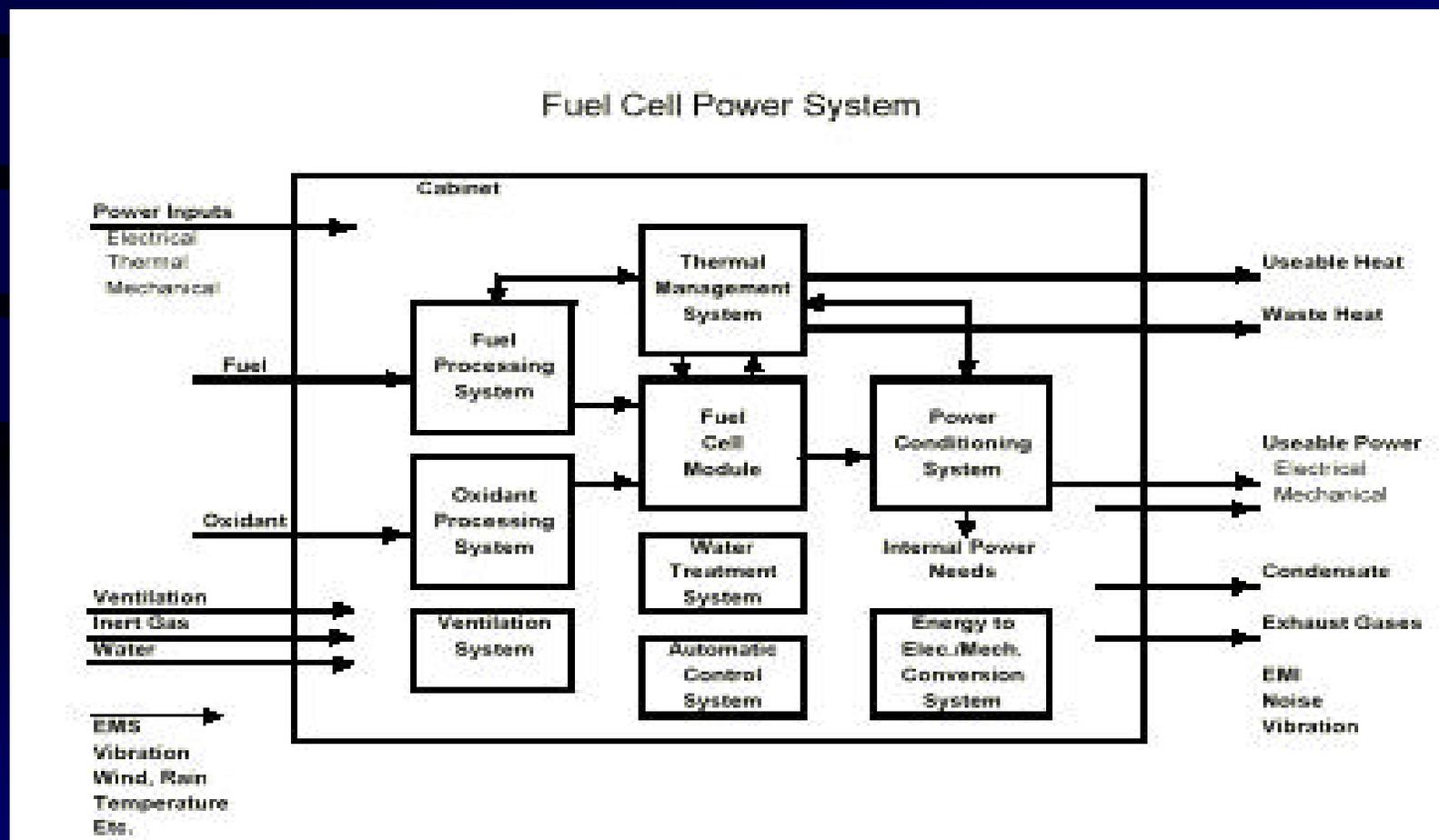
**1.2 Purpose.** This report is intended as a resource for the Working Groups and users of the TC105 series of fuel cell standards.



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## Working Group 1 - Terminology - Diagrams





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## **Working Group 2 - Fuel Cell Modules**

**Convenor - DE with 3 U.S.experts on the WG**

**Summary - A standard that will address the safety and performance of a fuel cell module (e.g. fuel cell stack)**

### **Status**

- Committee draft dated January 2002 available for committee review from 2/8/02 to 5/10/02**
- WG to meet June 17 - 18, 2002**
- Nine experts on the WG from ISO TC 197**



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## **Working Group 3 - Safety of Stationary Fuel Cell Power Plants**

**Convenor - US with 10 U.S. experts on the WG**

**Summary - Safety requirements (design and performance) for packaged stationary fuel cell power plants paralleling ANSI Z 21.83 and similar standards in CA, JP and DE**

### **Status**

- Two meetings held with a draft standard under development**
- Anticipate committee draft by 10/02**
- Ten experts on the WG from ISO TC 197**



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## **Working Group 4 - Performance of Stationary Fuel Cell Power Plants**

**Convenor - JP with 4 U.S. experts on the WG**

**Summary - A standard to describe how to measure the performance of stationary fuel cell power systems from an operational and and environmental standpoint**

### **Status**

- Committee draft dated January 30, 2002 available for committee review from 2/8/02 to 5/10/02**
- WG to meet June 19 and 20, 2002**



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## **Working Group 5 - Installation of Stationary Fuel Cell Power Plants**

**Convenor - US with 13 U.S. experts on the WG**

**Summary - A standard covering the installation of a stationary fuel cell power plant and its integration with the surrounding built environment paralleling NFPA 853**

### **Status**

- Working group project recently approved**
- Working group to start development of first draft**
- Three experts on the WG from ISO TC 197**
- Anticipate committee draft in 2003**



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## **Working Group 6 - Fuel Cell Systems for Propulsion and Auxiliary Power Units**

**Convenor - DE**

**Summary - Safety and performance of fuel cells used in automotive propulsion applications, as auxiliary power units for automobiles and for other non-automotive propulsion applications**

### **Status**

- WG formation recently approved and will meet June 10 - 11, 2002**
- Nine US experts on the WG**
- Three experts from ISO TC 197 and one expert from ISO TC 22 SC 21**
- Anticipate committee draft by 1/03**



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## **Working Group 7 - Portable Fuel Cell Appliances - Safety and Performance Requirements**

**Convenor - CA with 10 U.S. experts on the WG**

**Summary - A standard covering the safety and performance of portable fuel cells**

### **Status**

- WG to meet June 19, 2002**
- Five experts from ISI TC 197**
- Anticipate Committee Draft by 10/03**



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## **Working Group 7 - Portable Fuel Cell Appliances - Safety and Performance Requirements**

**Scope - Applies to ac and dc appliances, including handheld units, with rated voltage not over 600 V in non-hazardous locations**

### **Outline of Draft**

- Design requirements**
- Type tests (strength, leakage, emissions, verification of specifications, etc.)**
- Routine tests**
- Marking and instructions**