

Latest Developments Concerning Standby at the IEC

by Lloyd Harrington

Energy Efficient Strategies, Australia

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About the Presenter

- **Director of Energy Efficient Strategies in Australia: EES are technical consultants to Australian federal and state governments on appliance efficiency issues (incl. standby)**
- **Has been involved in standby within Australia policy and programs since 1999**
- **Has been chair of IEC TC59 WG9 (standby) since its formation in 2001**



What is the IEC?

- **The International Electrotechnical Commission is the world standards body for electrical equipment and electrical issues (including safety and performance)**
- **Based in Geneva**
- **Related to ISO (mechanical) and ITU (telecommunications)**
- **No duplication of standards coverage between these international standards bodies**



Background to IEC62301

- IEC TC59 (household appliances) identified standby as an issue as early as 1999
- TC59 formed an ad-hoc working group to investigate whether a test method was warranted - the group found there was much policy activity and a test method on standby measurement was required
- Formed Working Group 9 in October 2001
- IEC62301 published in mid 2005



Overview of IEC62301

- **Applicable to a wide range of products**
- **Specifies ambient temperature and conditions, electricity supply quality and power instrumentation, mode stability**
- **Provides measurement methodology including various product configurations**
- **Reporting requirements**
- **Gives guidance on a range of measurement issues including instrumentation**



Overview of IEC62301

- **Stable clean power supply (<2% harmonics)**
- **Stable ambient test room conditions**
- **Digital power meter with fundamental active power accuracy of 0.5% or better – capable of measurements of 0.01W or better, capable of including components up 49th harmonic (2.5kHz) strongly recommended**
- **Data logging capability recommended (as part of the proposed amendment)**



IEC62301 - application

- Intent is to measure average power where the product is in a stable state
- Most “stable” states include considerable variation in reading so accurately interpreting the meter readout can be risky/hard
- Stable state can include cyclic events – need to include whole number of cycles
- Care is required where the product changes state automatically (eg DVDs, VCRs, computers, products with automatic power management) - short duration modes



IEC62301 - proposed changes

In 2006 WG9 proposed and TC59 agreed to an amendment that will include:

- Using integration as the preferred method
- Longer initialisation before reading (30 min)
- Longer reading period (10 min)
- Mandating integration for short duration modes or modes that have cyclic aspects
- More rigorous stability requirements (1%)
- Advice on the use of metering equipment
- May be designated as a “horizontal standard”



IEC62301 - proposed changes

At the TC59 meeting in Korea in Oct 2006 there was a long debate about modes as many felt that the current “standby mode” (lowest power) is inadequate

- As a result, TC59 directed WG9 to differentiate between off mode and standby mode in IEC62301
- WG9 was also instructed to work with the sub-committees under TC59 to assist them in the development of relevant modes for their products and to implement these into their standards in a timely manner - now starting



IEC62301 - proposed changes

- **WG9 is preparing some guidance on modes in IEC62301 as instructed by TC59**
- **However, mode definitions in many cases will continue to be defined externally to IEC62301**
- **The likely approach will be: “off mode” = no user oriented function; “standby” = some user oriented function - broadly in alignment with Fraunhofer approach**
- **Some products have modes that do not fit well into a definition - eg “left on mode” for dryers, dishwashers and washing machines**



IEC62301 - proposed changes

- **WG9 is preparing a detailed amendment (or revision) for release as a committee draft**
- **Initial work is well progressed but the proposal is yet to be reviewed by those WG9 members who did not attend Frankfurt meeting in late May 2007**
- **May be several months before document is formally released for review by national committees**
- **The draft proposal as it stands addresses the concerns of TC59 and other parties**



What about standby in a wider context?

- IEA 1 Watt plan has been adopted by Korea, Taiwan and Australia - considered by others
- As a benchmark for initial international action a 1 Watt requirement across the board is a good first step
- However, a flat 1 Watt requirement is a blunt instrument - for some products 1 Watt is very hard to meet while for others 1 Watt is easy
- Unclear to which modes 1 Watt applies - lowest? All standby? Others?



What is missing from a 1 Watt target?

- Need to recognise that different products may have one or more functions active in one or several relevant low power modes
- We need to cover all relevant low power modes, not just the lowest
- Need to make sure that power consumed in all relevant modes is as low as practicable
- Must ensure that products power manage themselves to go to the lowest power state possible whenever possible



How could we achieve this?

- As an expedient first step, adopt a 1 Watt limit across the board for “standby” modes
- Set more stringent limits for off mode
- Require more products to have power management
- Develop a more sophisticated “functional adder” approach to set targets for all products based on active functions that are present
- Functional allowances need to be strict, functions need to be legitimate, need to ensure low power modes are not eliminated (eg off switch removed, standby removed leaving only on)



In the medium term:

- **Require that any “exemptions” from a horizontal 1 Watt approach use a functional adder allowance to calculate a power limit**
- **Review best available technology - passive standby can now be as low as 30mW - high standby is now just poor design**
- **Set maximum power targets for minimum acceptability for each required function**
- **Set targets for “best practice” low standby design**
- **Eventually migrate all products to a functionality adder approach**



The End

More information see:

www.energyrating.gov.au

www.iec.ch

- - thank you