

Emergency Power Supplies Conference 2007

30th & 31st May 2007
The Concorde Hotel
Kuala Lumpur
Malaysia



International Keynote Speakers:

Ian F Bitterlin

International Sales Director, Chloride Power

Terry Cousins

Motswedi TLC Software, South Africa

Pre-Conference Workshops:

- 1 From Grid to Chip: A Review of UPS Technology and Power Systems for Critical Loads - **Ian Bitterlin**
- 2 Power Quality and Earthing: Problems & Solutions - **Terry Cousins**

Who Should Attend:

The Emergency Power Supplies Conference will provide information of interest to:

- electrical and instrumentation engineers
- chief engineers
- plant engineers
- automation engineers
- engineering managers
- control engineers
- mechanical engineers
- operators and technicians
- anyone actively involved with implementing or optimising a emergency power supply or stand by plant and looking for reliable power supplies

This conference will be essential for anyone with a responsibility for ensuring continuity of power during a failure in electricity supply.

Conference Topics Include:

1. Monitoring Emergency Power Supply Health and Performance to Ensure Peak Reliability
2. Uninterruptible Power Supplies (UPS) Selection & Design Guide Industrial Plant
3. Automatic Transfer Switching Equipment: An Analysis of Emergency Power Systems
4. Effects of Voltage Sags on Domestic Appliances and Office Equipment

Benefits of Attending:

- Increase your knowledge of the latest EPS technology developments
- Hear real world EPS case studies from around the globe
- Excellent networking opportunities - learn from experts in the field
- Unashamedly non-commercial presentations - No sales pitches
- Practical and state of the art advice to maximise the value of your EPS & UPS systems

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An Emergency Power Supply system (according to the IEEE) is "an independent reserve source of electric energy that, upon failure or outage of the normal source, automatically provides reliable electric power within a specified time to critical devices and equipment whose failure to operate satisfactorily would jeopardise the health and safety of personnel or result in damage to property"

Increasingly worldwide and in Malaysia we are facing a future with a degree of uncertainty regarding its power supplies. Power failures are becoming more prevalent and problematic yet there is an ever burgeoning demand for dependable power distribution and supplies.

IDC have held several EPS conferences in South Africa and Australia and the response to these events has been extremely positive. The Malaysian EPS Conference includes a line up of quality presenters and delegates will

leave the conference with a wealth of knowledge on the topic of Emergency Power Supplies

This two day forum in Kuala Lumpur will include local and international experts in the field. The presentations will include case studies and examples from a variety of industries. The topics covered will deal with the adequacy of emergency power supplies and the quality of the power supplied.

This conference will provide delegates with the opportunity to network and talk to other experts in the industry about real practical problems, solutions and state of the art applications of the technologies.

This conference is essential for anyone with a responsibility for standby power during a failure in electricity supply.

Conference Day 1 - 30th May 2007

8.30am	Registration
9.00am	Opening Address - Steve Mackay
9.15am	The Increasingly Important Relationship Between Power and Cooling in the High-Density Data-Centre Environment
Session 1	<p>Ian Bitterlin International Sales Director, Chloride Power</p> <p>Critical computer loads have traditionally required continuous voltage supply with a maximum break of 20ms to function without fault. At the same time the temperature and humidity of the ambient cooling air has been controlled to within fine limits and close-control air-conditioning plant has been the norm.</p> <p>However, whilst the same tolerances of power and cooling are enforced today, the ever-increasing load miniaturisation and compaction has led the floor power density to rise from 300W/m² to well over 10,000W/m². Indeed, individual 600mm wide by 900mm deep IT cabinets can achieve 30kW if fully equipped with the latest Blade-Server technology. This power density has resulted in the need to provide the cooling system with the same amount of reliability, redundancy and resilience as the power system has traditionally been designed to deliver.</p> <p>This opening presentation will review the market drivers, optional solutions and the impact of high-density computing on the built environment, reliability and power consumption.</p>
10.15am	Morning Tea
10.45am	Monitoring Emergency Power Supply Health and Performance to Ensure Peak Reliability
Session 2	<p>Terry Cousins Director Motswedi TLC Software</p> <p>Emergency power supplies (EPS) are installed to provide power to critical loads either as a backup or an on-line supply. The reliability of the EPS is a key factor when selecting equipment. Once the supply is installed, routine maintenance and testing does not always ensure that the supply maintains its design reliability. This presentation will discuss how monitoring of emergency and utility supplies can ensure the reliability of an EPS. Considerations in the design, selection and installation of monitoring systems will be presented as well as the methodologies used in the analysis of such data. Case study data from field measurement systems will be provided. Monitoring systems can assist engineers, consultants and facilities management personnel to maintain emergency supplies at peak reliability.</p>
11.30am	Uninterruptible Power Supplies (UPS) Selection & Design Guide Industrial Plant
Session 3	<p>Rawnee Ho Boon Chye Senior Electrical Engineer, Intel Corporation</p> <p>A guide to the selection and design of Uninterruptible Power Supplies (UPS) in Industrial Plants will begin this presentation followed by an exploration into the operation and common topologies of UPS, namely offline and online UPS systems. Some of the "higher-performance or hybrid" UPS's are found in special or hosting facilities, this will be touched on to highlight the important differences when deciding on the best application for a particular situation.</p> <p>Then a discussion of the design of UPS for non mission/mission critical versus the cost implication followed by a review of UPS critical components including manual/maintenance bypass, static transfer switch/bypass, earthing, harmonic issues and no-break systems or so called "make before break systems". To conclude, an evaluation of design estimation and calculation of the UPS power consumption using case studies and real world examples.</p>
12.15pm	Lunch

1.15pm	Aspects of Power System Reliability Assessment
Session 4	<p>Lalit Goel Professor & Head, Division of Power Engineering, School of EEE, Nanyang Technological University, Singapore</p> <p>Reliability is an important requirement in a modern power system, and therefore utility planners, designers and operators have used a wide variety of techniques to achieve acceptable levels of reliability in their electric power systems. The early techniques which were all deterministic are slowly but surely being replaced with probabilistic methods which respond to system parameters and uncertain conditions. Quantitative reliability evaluation also provides the ability and opportunity to incorporate cost/benefit assessment into the decision-making process in system design and planning.</p> <p>This talk will introduce the basic concepts of quantitative power system reliability evaluation at all three levels, i.e., generating capacity alone, generation and transmission systems collectively, and distribution system alone. Issues such as reliability cost vis-à-vis reliability worth would also be discussed.</p>
2.00pm	Automatic Transfer Switching Equipment: An Analysis of Emergency Power Systems
Session 5	<p>Mardian Junus Regional Manager (South Asia), Emerson Network Power, ASCO Power Technologies</p> <p>Emergency power systems are required to restore designated critical loads to an alternate power source when the utility derived service becomes inadequate. The proliferation of technology has made the global conduction of business increasingly dependent upon the availability of reliable power. As a result, alternate power systems are being installed and expanded to protect the broadening scope of critical electric loads. This discussion will review power systems and loads with a view towards automatic transfer switching equipment and the factors which influence its design and qualification.</p>
2.45pm	Afternoon Tea
3.15pm	Effects of Voltage Sags on Domestic Appliances and Office Equipment
Session 6	<p>M V Chilukuri, Lee Ming Yong, Phang Yoke Yin Centre for Electric Energy and Automation, Multimedia University, Cyberjaya</p> <p>Voltage dips and their impact on customer loads constitute the most prevalent power quality problem in distribution systems. Voltage dips can result in tripping of customer equipment and shutting down of production lines leading to production loss and expensive restart procedures. Sensitive equipment to volt-age dips include: computer-controlled processes, variable speed drives (VSD), induction motors, office equipment and domestic appliances. System modifications can be implemented to minimize the magnitude and duration of voltage dips.</p> <p>This project investigates the effect of voltage sags on domestic appliances and office equipment and reports their sensitivity to voltage disturbances occurring in power systems due to inherent protection practices. It will also, highlight the possible solutions available for customer such as UPS, DVR and other Power Conditioners as and where it applicable for critical loads at home and offices. Finally the research aims to address the manufacturing industry to incorporate new measure to counter the problem at design stage while taking into consideration of existing protection practices at transmission and distribution level, as power quality awareness is growing with hike in electricity prices and deregulation of electrical industry..</p>
4.00pm	Emergency Power Supplies - Discussion Panel
Session 7	<p>Hosted by Ian Bitterlin, Terry Cousins, Lalit Goel</p> <p>In line with the conference's mission of exchanging ideas and practical experiences, this panel will draw on participants to discuss emergency power supplies in their workplace particularly concerning diesel power supplies and paralleling, UPS's, and batteries.</p>



Conference Day 2 - 31st May 2007

<p>9.00am Generating Capacity Reliability Evaluation</p> <p>Session 8 Lalit Goel Professor & Head, Division of Power Engineering, School of EEE, Nanyang Technological University, Singapore</p> <p>This talk will compliment the presentation on Conference Day 1 by discussing applications of probabilistic reliability techniques on generating capacity systems. The talk is designed to provide practicing engineers and technical managers with the basic concepts of probabilistic reliability assessment of power generating systems. Basic reliability indices such as loss of load expectation (LOLE) and loss of energy expectation (LOEE) will be discussed and illustrated using simple examples.</p>	<p>12.30pm Lunch</p>
<p>9.45am Considerations for Achieving High Reliability Standby Lead-Acid Battery Installations for IT & Telecom Applications: Design and Operation</p> <p>Session 9 Ian Bitterlin International Sales Director, Chloride Power</p> <p>Continuous power systems require a standby energy source, traditionally provided by Lead-Acid accumulator cells in series, either 24-48V for telecom or 400-600V for UPS.</p> <p>The introduction and widespread adoption of Valve-Regulated technology in the late 80's resulted in a highly dense and relatively low cost energy storage solution that was, so called, 'maintenance free'. However, these cells had an unfortunate early history and proved to have a temperature dependent life requiring routine maintenance, apart from other early failure mechanisms. Today the operation and maintenance requirements are generally well known and with careful design a highly reliable and predictable battery installation can be engineered.</p> <p>This presentation addresses the selection, configuration (for reliability and maintenance), physical accommodation, safety and maintenance requirements of VRLA batteries for 3-phase UPS systems that require terminal voltages in the 400-600V range..</p>	<p>1.30pm Measuring Emergency Electrical Loads in Commercial Buildings</p> <p>Session 12 Terry Cousins Director Mtswedi TLC Software</p> <p>Many commercial buildings were built decades ago. The electrical facilities in these buildings often do not meet the requirements of modern loads. Provision of emergency power was often used for little more than emergency lighting. This paper will discuss the remote measurement of electrical loads at various points in low and high rise commercial buildings. The loads that are measured include chillers, heating, air handling, lighting and various office equipment such as computers and servers. The measurements are taken on the main and emergency distribution systems. The data is remotely collected from various sites to a data centre where it can be analysed. These measurements will assist utilities, consultants and facilities management personnel to design, plan and modify emergency and normal building supplies.</p>
<p>10.30am Morning Tea</p>	<p>2.15pm Harmonic Mitigation Using Transformers Case Study: Sydney Olympics</p> <p>Session 13 Dominic Loh Product Manager (South East Asia) Eaton Power Quality Pte Ltd</p> <p>In 2000 the Sydney Olympics brought together athletes from all over the world. It also brought together the electronic media and their equipment from all over the world, concentrated in the IBC. The challenge was to provide reliable power and to limit the effects of mains borne harmonic voltage distortion between broadcasters, all within a very short timeframe. As the actual load could not be modelled or even assembled until the weeks before the games, testing and simulation became a critical part of the project.</p>
<p>11.00am Using UPS Power Supplies to Manage the Effects of External Voltage Dips in the Manufacturing Industry</p> <p>Session 10 Arumugam Langkadaran CSM Electrical Engineer, Intel Corporation</p> <p>Millions of dollars are wasted due to incidents of voltage dips in Intel's manufacturing plants. Interrupting critical equipment and tools can cause severe financial and time loss for the manufacturing industry in Malaysia on a regular basis. Methods to optimise the usage of UPS power sources will be explored including ways to harden the control circuits of these facilities tools to withstand these external voltage dips. Real world case studies will be used to illustrate this point with equipment such as air compressors and chillers.</p>	<p>3.00pm Afternoon Tea</p>
<p>11.45am Modular Power Protection Concept for Mission and Business Critical Applications</p> <p>Session 11 Mr. Yuen Tat Yan Director, ADC Power Concept Sdn Bhd</p> <p>This presentation will describe a new Modular Power Protection Concept (MPPC) for mission and business critical applications that enhance the overall availability of the power supply. High availability of uninterruptible power supplies is of paramount importance for continuous operation of data-centers, telecom equipment, health care equipment, traffic control and banking transactions. The new MPPC is based on the latest modular (rack-mount) three phase transformer-less Uninterruptible Power Supplies (UPS) technology.</p>	<p>3.30pm Real-time Monitoring of Power Quality Using Remote PC</p> <p>Session 14 M V Chilukuri, Phang Yoke Yin Centre for Electric Energy and Automation, Multimedia University, Cyberjaya</p> <p>Deregulation of electrical industry has increased the importance of power supply availability, reliability and quality. Electric utilities and customers alike are concerned about reliable power, whether the focus is on power disturbances or extended outages. Thus monitoring of power supply quality is an important issue and this project proposes the development of a PC-based data acquisition system that provides real time monitoring of voltage and current at the customer's point of common coupling (PCC) and records power quality disturbances for post analysis. The main aim of the project is to conduct preliminary power quality study at a user's premises and to identify the power quality issues faced by the consumer, particularly voltage disturbances, harmonics and voltage unbalance. The system, implemented using National Instruments LabView™ software, can monitor, detect, record and classify steady state disturbances such as voltage interruption, sag and swell on a remote PC. Post acquisition analysis is performed on the power quality data collected to characterize the disturbance and to study the cause and impact and to compute power quality indices.</p>
	<p>4.15pm Closing</p>

Sponsorship Opportunities

Representing your business at the **2007 Emergency Power Supplies Conference** will provide you the opportunity to reach key decision makers from a multitude of industries. For more information on sponsorship and exhibition opportunities please contact Sarah Montgomery on +61 8 9321 1702 or email sarah.montgomery@idc-online.com

Workshop 1 8.30am - 12.30pm

From Grid to Chip: A Review of UPS Technology and Power Systems for Critical Loads.

Most microprocessor based loads in IT and Industrial applications require power quality that often exceeds that available from the grid. The cost of lost data, production, or even customers has to be offset against the cost of installing protected and secure power systems. This workshop will introduce the audience to the UPS topologies of line-interactive and double-conversion as well as the available technologies: Static with battery or flywheel support; Rotary with battery or flywheel support; and Diesel-Rotary.

The electrical performance, accommodation requirements and reliability of the various systems will be covered in depth - as will the options of high-availability power system designs including static transfer switches. Both battery system design and diesel-generator to UPS interfaces will be examined. In conclusion the relationship between availability of critical power and Maintenance (including 'concurrent maintenance') will be covered.

Ian Bitterlin - Int'l Sales Director, Chloride Power MIEE, BSc, PG Dip(DI)

Ian commenced his engineering career with a focus on electrical drives (Schindler & Mannesmann) in a design capacity. Since then he has worked in various leading organisations in the areas of static, rotary and diesel UPS's, static transfer switches, TVSS's and automatic transfer switches. Currently a Vice President for Active Power, who are leaders in battery free UPS technology utilising flywheel or compressed air as energy storage media. Recently he co-authored two sections of the CIBSE Electrical Guide on UPS and HV Switchgear. He has presented numerous papers and courses throughout the world on drives, UPS's and critical power applications. Ian is an entertaining and knowledgeable presenter.

Workshop 2 1.30pm - 5.30pm

Power Quality and Earthing: Problems & Solutions

This workshop commences with a review of the fundamentals of power quality and EMC and then examines the procedures for design and installation for earthing and neutral systems. Power quality, harmonics, earthing, surges & noise for electrical & electronic systems are detailed in the half day session, which is then rounded off with realistic case studies covering a wide variety of industries ranging from manufacturing and process control to telecommunications. At the end of this workshop participants should be able to: Gain a working knowledge of the basics of earthing and harmonics; Understand transient protection and harmonics; Understand essentials of electrical and electronic systems; and Isolate and rectify simple power quality problems.

Terry Cousins - Mottswedi TLC Software, South Africa

Terry has a BSc in Electrical Engineering, a bachelor of commerce and master of business leadership degree. In 1988 Terry co-founded TLC Software with two colleagues. The company's objective was to develop and sell engineering software solutions for the industrial market. Terry was involved in the design and development of TLC Software's power quality instrument, the QSR2000, used by ESKOM (electrical utility), MTN (cellular telephone operator), ISCOR (iron and steel), Columbus Stainless Steel (steel manufacturer), Rand Water Board (water utility) and many industrial companies and municipalities. The QSR2000 is also being exported to Brazil.

Terry is on the South African Bureau of Standards committee for power quality instruments (SABS 1816:2000), which is revising the current South African national power quality standard. As a senior member of the South African Institute of Electrical Engineers Terry has authored several papers on power distribution and power quality for local and international magazines.

Registration Form: Emergency Power Supplies Conference

Simply complete this registration form and return by fax or mail.

1. DELEGATE DETAILS

CONTACT: _____

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2. REGISTRATION & PAYMENT DETAILS

- Pre-Conference Workshop 1 - 29th May 2007 (Morning workshop)**
 From Grid to Chip: A Review of UPS Technology and Power Systems for Critical Loads
 RM750.00 x _____ delegates = RM _____
 - Lunch (Included if attending both workshops) RM90.00 x _____ delegates = RM _____
 - Pre-Conference Workshop 2 - 29th May 2007 (Afternoon workshop)**
 Power Quality and Earthing: Problems & Solutions RM750.00 x _____ delegates = RM _____
 - EMERGENCY POWER SUPPLIES Conference - 30th & 31st May 2007**
 1st delegate RM2750.00 x 1 delegates = RM _____
 Additional delegates RM2475.00 x _____ delegates = RM _____
- TOTAL DUE = RM _____

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PLEASE NOTE: Full payment is required prior to the commencement of the conference.

BOOKING CODE: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

GENERAL INFORMATION

Confirmation Details

A confirmation & information pack will be sent to all delegates approximately 10 days prior to the conference. Please ensure that you provide both your mailing address and email address on the booking form.

Cancellation Policy

Full reimbursement will be accepted if written notification of cancellation is received by IDC Technologies on or before 4 May 2007. A fee of 20% will apply to any cancellations received between 7 and 11 May 2007. No cancellation requests can be accepted after 14 May 2007, however from this date substitute delegates are welcome.

Venue

The Concorde Hotel
 Kuala Lumpur
 2 Jalan Sultan Ismail 50250
 Kuala Lumpur, Malaysia
 +60 3 2144 2200

Accommodation

There are many hotels near the conference centre. Please contact IDC for further details on +60 3 5192 3800

Food and Beverages

Lunch, morning and afternoon tea is provided (See note for workshop lunch).

Unable to Attend

If you are unable to attend the full conference program, contact us for details to attend individual sessions or to purchase the Emergency Power Supplies Conference Resource Kit.

REGISTRATIONS

We encourage you to register early, as spaces are limited. Your payment must accompany the registration form in order for it to be processed and confirmed.

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