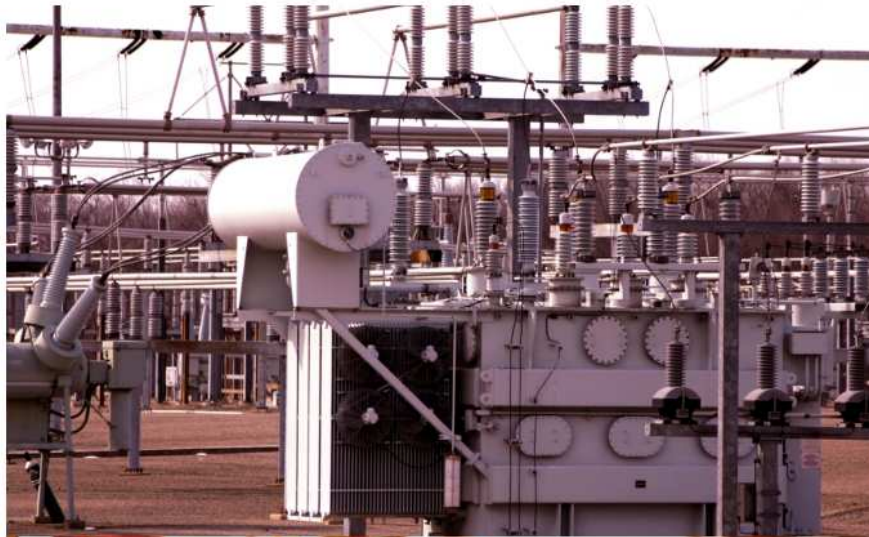




Newton-Evans Research Company's

Market Trends Digest

November 2010



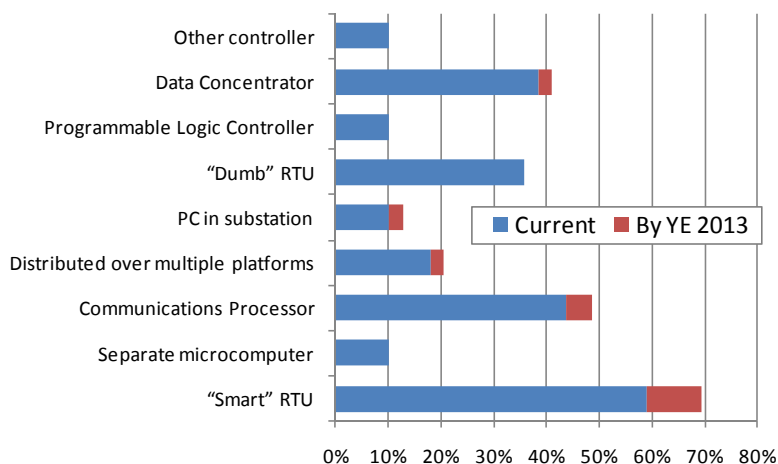
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North America Developments in Substation Automation & Integration Programs

The 2010 Newton-Evans Research Company survey of Substation Automation & Integration Programs in Electric Utilities is expected to be available for purchase in early December. In the meantime, here are some preliminary observations based upon the first 39 North American respondents to our survey:

How Are Primary Substation Information Processing Tasks Handled Inside the Fence?

Fifty-nine percent of North American respondents indicated that primary substation information processing tasks are handled via “Smart” RTU, followed by forty-four percent indicating they use a communications processor. While very few utilities suggested that they were planning to add any of these technologies by year end 2013, those that do have plans are likely to install a smart RTU.



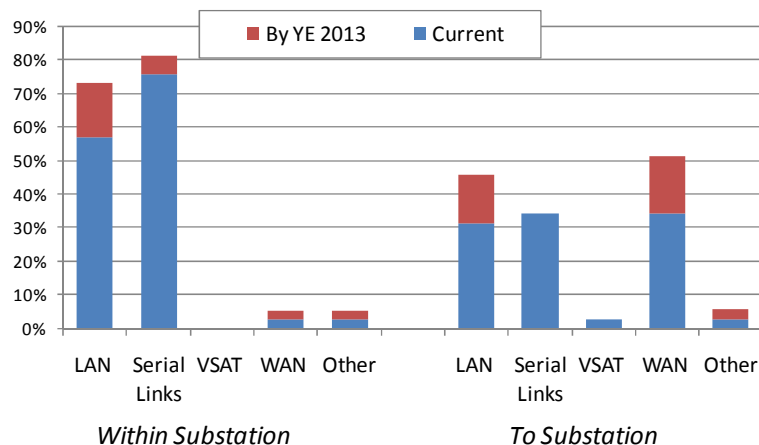
What are the potential obstacles to implementing substation automation and integration for both new and retrofit substations?

Respondents were asked to rank twelve “potential obstacles” on a scale of 1 to 5 where 1 = “doesn’t stand in our way” and 5 = “formidable obstacle.” Overall, most responding utilities do not consider any of the obstacles listed on the survey as formidable. Eighteen percent of respondents so far consider lack of funding to be a formidable obstacle in implementing substation automation and integration programs. Other obstacles include security concerns, lack of economic justification, and an unconducive cost/benefit analysis. However, 34%

of respondents ranked “lack of standard products” as a three, indicating it is somewhat of a challenge. Likewise, 24% ranked “not enough skilled internal staff” as a three.

Choice of communication architecture within the substation and to the substation

LAN and serial links are most often used within the substation, but there is significantly more WAN usage to the substation where ethernet LAN is impractical. For the most part, this pattern is unchanged from the last Newton-Evans survey to ask this question. The final survey results will likely show the same pattern.



External or Third Party assistance required for various substation automation activities

Third party assistance is needed the most for training and engineering drawing support, and while only 23% indicated a current need for third party assistance with security, 38% said they will need it by 2013. Items for which utilities feel more self-sufficient are “Long term maintenance agreements,” “IED configuration support,” and “Specifications development to help define needs before RFQ.”

Data is still being gathered by Newton-Evans staff through November. To purchase the completed study in December, call us at +1 410 465 7316 or send us an email to info@newton-evans.com. We accept major credit cards and purchase orders.



Forty-third CIGRÉ Biennial Session (22nd - 27th August 2010)

Excerpted from "The International Council on Large Electric Systems attracts international delegates to France's beautiful Capital City of Paris"

by Gerry George

CIGRE's 43rd General Session since its formation in France in 1921 was held in Paris in the final week of August 2010. This International Conference and Exhibition on Large High Voltage Electric Systems continues to attract an increasing number of international delegates with some 3005 travelling from over 82 countries. The five-day Technical Programme of the Conference was this year supported by a record number of 130 Exhibitors representing the industry's manufacturers, utilities, consultants and service providers from around the world. The magnificent Palais des Congrès de Paris was once again the venue for all events, a very attractive and convenient location from which to walk to the Arc de Triomphe and visit many of Paris's famous landmarks.

The content of this year's Technical Programme addressed all the challenges presented from the need to interconnect large renewable energy projects to transmission systems, to the large scale transmission system interconnectors that employ the latest HVAC and HVDC technologies. The Programme benefits from CIGRÉ's organisational structure by presenting the latest developments linked to the key components of the transmission system namely, rotating machines, substations, transformers, overhead lines and cables moving forward to consider system design, operation, control, management and performance. The benefits available from the advanced information and telecommunication systems technologies now in wide-scale use in the industry were also included in the Programme as they play an increasing role in the industry and in particular in the development of 'Smart Grids' now being considered by transmission and distribution utilities.

Opening Ceremony and Keynote Address

The Opening Ceremony held on Sunday afternoon 22nd August 2010 was followed by Keynote Address entitled "Initiatives by the Power Industry towards Low Carbon Emission Society" given by Mr. Shosuke Mori, Former Chairman of the Federation of Electric Power Companies of Japan (FEPC) and current Chairman of the Board of Directors for the Kansai Electric Power Company Inc.

André Merlin (CIGRÉ President) then expressed his thanks to Mr. Mori before giving the CIGRÉ members in attendance an update of the activities since 2008.

Membership had continued to grow and totaled 11,200 equivalent members by the end of 2009, Asia and South America being the areas responsible for this significant increase. The number of National Committees is now 57 and CIGRÉ membership now extends to 89 countries.

Technical Meetings Programme

The Technical Programme started on Monday 23rd August with two Major Sessions that always attract the majority of the Conference delegates. This year the first-day Opening Panel addressed 'The Need for Technology & Intelligence in the Future Power System' in the morning, with the Workshop on 'Large System Disturbances' taking place after lunch.

The Need for Technology & Intelligence in the Future Power System'

This Meeting comprised of presentations by speakers from EPRI –USA, Switzerland, ABB and Australia that covered the spectrum encompassed by the term 'Smart Grid' under the following titles:

- Future Energy Networks – A Vision
- Towards a Smarter Grid: ABB's Technology Perspective
- CIGRÉ's Role – Shaping the Future
- Industry Smart Grid Interoperability – From Roadmap to Action

Workshop (Monday pm) – 'Large System Disturbances'

The events discussed in the Workshop serve to illustrate the variety of unpredictable natural events that can occur. Therefore all transmission system operators should have system restoration and emergency plans in place in order to cope with these events that are not likely to diminish in the foreseeable future.

Technical Exhibition

The number of applicants for the CIGRÉ 2010 Technical Exhibition at the Palais des Congrès exceeded the space available at the Exhibition but with 110 Stands representing 22 countries it was the largest Exhibition ever staged at a CIGRÉ General Session.

The exhibitors presented the full range of equipment developed for smart grid applications, sustainable energy solutions and details of the plant and equipment installed on the most recently commissioned UHV and EHV transmission system interconnectors in the world. So the Exhibition continues to be recognised as the showcase that maintains and strengthens the vitally important links between research institutions, manufacturers, end-users and the industry's key decision and policy makers. Hence, every CIGRÉ General Session attracts members and

visitors from around the world. This ensures that the interests of all sectors of the industry is represented at this Conference.

CIGRÉ's Perspective for the Future

Currently on an international basis, the industry is faced with ever-increasing investment programmes to supplement existing energy supplies and cater for the continual growth in demand.

CIGRÉ's Technical Committee is now establishing the strategic directions for the next decade. As a result of considering the factors that will shape the future of the electricity industry four major strategic directions have been identified:

1. The electrical power system of the future
2. Making the best use of the existing system
3. Focus on the environment and sustainability, and
4. Interactive communication and information.

To read Gerry's full article including more detail on workshops and sessions, visit our website and download the .pdf: www.newton-evans.com/Cigre43.pdf



CICED 2010 Conference & Exhibition in Nanjing, China

Gerry George

CICED 2010 was the fourth International Conference and Exhibition to be organized by the Chinese National CIRED Committee and the State Grid Corporation of China with support from CIRED, the IEEE/PES and the IET. This four-day regional CIRED Conference Programme was arranged and based on the very successful format that has been developed by the UK and Belgian CIRED Organising Committees who are responsible for the CIRED Conferences held in Europe every two years.

The Conference Technical Programme and Exhibition was held in the Nanjing Jinling Convention Center, an excellent facility in which to stage the Keynote Speeches, Round Table, Technical, Tutorial and Poster Sessions. The Exhibition Hall was held in a separate Hall on the same site. This year CICED 2010 attracted some 500 delegates, the majority representing all sectors of the electricity industry, research institutions and Universities in China. International delegates numbered some 10% of the total and additionally, a number of Keynote Speakers and contributing authors were from a number of utilities, manufacturers and Universities from around the world.

The Keynote Addresses delivered on the first two days of the Conference were given by speakers from China, Japan, USA, UK and Germany. These presentations provided the delegates with an overview of the 'Smart Grid' programmes, targets and achievements in each of their respective countries. Although there is a wide diversity in the programmes being adopted nationally, there is sufficient evidence to indicate that there is global acceptance of the need to establish a sustainable and reliable supply of environmentally acceptable electrical energy.

The Organising Committee received a record number of Papers for this Conference from which almost 400 Papers were selected. International Papers accounted for 10% of the total selected and representatives from manufacturers and utilities overseas contributed to the six Round Table Sessions.

The daily Technical Programme addressed the following key topics
P1- Distribution – policy planning and its future trends (108 Papers)
P2 - Network components (37 Papers)

P3 - Power quality and reliability (68 Papers)

P4 - Operation, control, protection and communication (94 Papers)

P5 - Distributed energy resources and its interconnection to networks (37 Papers)

P6 - Service for customers – DSM, energy, contracting, management etc (29 Papers)

A large number of the Papers were presented by authors from the Research Institutes linked to each Chinese utility and by post-graduate authors from Universities in China. These Papers tended to be theoretical and academic but they appear to be the background for the computer software that will be subsequently developed to aid the practising utility engineer. There seems little doubt that China is currently investing more in research and development in this field than any other country in the world. Reports suggest that the time interval between the development stages to implementation is in the region of three to four years which is considerably shorter than the norm.

The rapid growth in the number of generating plants coupled with world construction, operation and control of the UHV AC and DC transmission systems has led to China being a world leader in the field of system automation, protection and control. Currently there are a number renewable energy and smart grid distribution projects already in commission. It was evident that the Chinese engineering society are now very keen to share their knowledge, experience and advanced technologies with the rest of the world in return for the expertise that is available from fellow professionals in the electricity industry.

CICED 2010 was supported by an Exhibition of Electricity Distribution Equipment and Services. Manufacturers and research institutions occupied the majority of the Booths which presented examples of China's manufacturing capability for supplying the distribution power companies with cables, overhead line equipment, transformers, switchgear and protection and control equipment. A number of Booths had links with the major European and US manufacturers. An exhibit that attracted considerable attention was the five-seat electric car manufactured by Nanjing Jiayaung that is now being exported to Norway, Austria, Spain, Iceland and the UK. The electronic CT /VT developed by the Nanjing Automation Research Centre (NARI) that can be used with GIS and AIS switchgear over a voltage range of 10 kV to 500 kV that is in commission on China's EHV transmission system was a further major attraction for delegates.

The Chinese CIREC Committee also proved to be excellent hosts arranging three evening events that provided a relaxing networking opportunity for all the Conference delegates. It was a privilege to attend CIREC 2010 providing the opportunity to spend time with the Chinese engineering university and research professionals whose current work will make a major contribution to the global challenges faced by the electricity industry.



Winning the Hearts and Minds of Consumers, Regulators and Policy Makers and Achieving Early Benefits; A Word of Caution Regarding Our Selection of Telecom Partners and Suppliers

Charles Newton

C&I Markets – the Key to Smart grid Opportunity in the Near Term . . .

I hesitate to use the marketing term “low hanging fruit” in my call to utilities to consider pursuit of commercial and industrial (C&I) demand response (DR) and energy efficiency programs as ideal initial targets in our quest to build a smarter grid. Most fruit orchard field bosses would likely inform us that the low hanging fruit actually should stay on the tree longer than the more sun-ripened fruit up higher on the tree. Nonetheless, the term as it has been used in Marketing discussions, means to pursue easily obtainable goals, with minimal effort expended to attain these goals.

. . . While Concurrently Developing a Master Multi-Tier Communications Strategy that Retains Private Ownership of Telecom Networks with Ancillary Use of Commercial Grade Telecom Services

When it comes to smart grid and its myriad components, cornerstones and building blocks, it can make your head spin trying to prioritize, plan and fund these projects. A recent Utilities Telecom Council article (UTC Journal 2010 Special Edition) pointed out the need for utility planners to first develop utility-wide strategic communications architectures, and I fully concur. Electric power delivery is certainly among the most communications-centric industries in existence. For the country's largest utilities, the telecom planning and operations effort is intense, complicated, and currently consists of multiple, applications-specific sub-networks. A strategic overhaul will often mean a multi-tier approach to such a comms design, at least for our largest power utilities. For the bulk of mid-size and smaller utilities of all stripes, the architecture is likely to be of a less complex, less sophisticated, less costly design.

The smart way for electric power industry to gain influence with all stakeholders may be to move C&I efforts to the front burner, ahead of Residential AMI.

So What Comes First?

While the communications architecture plans are being discussed and planned, there are activities that can be undertaken in the near term that will yield early benefits and win over the naysayers. After participating in scores of electric power industry briefings and panel sessions over the past few decades both here and abroad, I have come to the conclusion that we continue to overlook the early gains to smart grid development that can be realized with a comprehensive approach to addressing the needs of the country's commercial and industrial customer base.

Why We Should Proceed Rapidly with C&I Smart Grid Efforts

While representing less than ten percent of the total end use customer base in numbers, the C&I portion of electric power industry revenue is very high (\$70 Billion for industrial; \$139 Billion for commercial – combined value nearly \$210 Billion compared with only \$155 billion in revenue for all residential customers).

Winning Hearts and Minds for Future Smart Grid Developments

Well, first, regulators will tend to be more receptive to (or less concerned with) advanced programs involving the C&I customers. Regulators are primarily charged with the responsibility to be concerned for the welfare and benefit of residential users of utility services. Secondly, C&I customers, especially the largest customers within the multi-tiered C&I segment, are eager to save on energy costs, are more knowledgeable about energy-related technology, and more willing to interact with utilities and their partners than are residential customers. Membership-based organizations such as CABA, IFMA and BOMA together with government energy research organizations such as Berkeley Labs are great at educating their members, industrial organizations, building owners and property managers about energy topics.

The Need for a Continuing Role of Private Telecom Networks within our Strategic and Core Infrastructure Segments

Having participated at GridWeek recently, I realize the debate on private versus public ownership of utility telecommunications networks is not going to end any time soon. However, it is clear that a large proportion of utility networks should remain essentially private, supplemented for less critical activities by the judicious application of commercial telecommunications services. There have been a spate of comments recently made by a number of executives, including Smart Synch's CEO, regarding inefficiencies within utility operated private networks. I agree that there are likely to be more cost-effective approaches to utility communications by using commercial services, but there is not nearly the

same level of availability, reliability and security inherent in commercial-grade public networks as there are in utility telecommunications networks.

What we need is not a Smart Grid, but a “Brilliant” Grid

Earlier this year, while attending a luncheon sponsored by Electric Light & Power magazine, Lieutenant General Russel Honore (USA Ret) questioned why the electric power community would only attempt to construct a “smart” grid, when what we really need is a “brilliant” grid if we are to be prepared for any emergency. He suggested that cell towers and certain other public telecommunications infrastructure were among the first to fail during Hurricane Katrina.

Should the Western Nations Become Self-Reliant for Telecommunications Infrastructure? We need to know a lot more about our key partners/suppliers of Telecom Equipment!

From my perspective, having made an initial assessment of what we believe to be the active (some might say pervasive) role of high-level Chinese military involvement in Chinese telecommunications businesses a few years ago, the last thing our country's telecommunications infrastructure needs right now is to have major Western telecommunications carriers sign up to partner with Chinese companies such as Huawei and ZTE, and others, that apparently remain subject to a great deal of influence by the Chinese military.

I trust that readers of this article in a position to influence our country's and other Western nations' telecommunications infrastructure and those telecommunications-centric industries typified by the electric power sector will keep this in mind, political correctness aside. Western companies have an inherent duty to be vigilant in their business dealings with less democratic nations.

Western computer and communications equipment manufacturers are also influenced by their governments and military establishments, but it is a very different level of involvement. Western democracies will specify technology requirements, and eligible suppliers will respond (be influenced by) these requests in order to sell equipment to their governments and military services. However, there is not any manufacturer I can think of that is actually a quasi-military business entity such as found in China today. Yes, there are defense-centric think tanks and an array of large and smaller defense contractors focused on ICT activities, but these businesses do not manufacture high technology equipment for sale to the private sector across the world.

Chinese Excellence in Technology Adoption

Please don't get me wrong. The Chinese nation has achieved outstanding technology advances throughout their society in recent decades, typified by the explosive growth of the electric power industry in their country, and the outstanding contributions of Chinese power engineers and Chinese university researchers that have accelerated this development.

In our own Market Trends Digest fourth quarter 2006 edition we wrote on the development of the Three Gorges project. Then, in 2007, our Liz Forrest noted the strong advances in Chinese electric power development (third quarter 2007 edition). Our UK correspondent, Gerry George, will again be providing his summaries of CIGRE and the recent CIGED events in the upcoming 4th quarter 2010 edition, which highlight recent Chinese smart grid accomplishments.



In the spirit of the upcoming holiday season, Newton-Evans is offering 25% off on all of our currently advertised reports priced \$500 or more. To take advantage of our discount, enter the code "Holiday" on the billing page after ordering from our website.

This is a great opportunity to save money on our extensive Smart Grid topic offerings, such as these timely reports:

The World Market Study of SCADA, Energy Management Systems and Distribution Management Systems in Electric Utilities: 2010-2012

Complete Four Volume Set – ~~\$7,500~~ \$5625
Volume 1 – North Am. Mkt. – ~~\$2,500~~ \$1875
Volume 2 – International Mkt. – ~~\$2,500~~ \$1875
Volume 3 – World Market Analysis/Forecast – ~~\$2,500~~ \$1875
Volume 4 – Supplier Profiles – ~~\$750~~ \$562.50

The Worldwide Study of the Protective Relay Marketplace in Electric Utilities: 2009-2011

Complete Four Volume Set ~~\$5750~~ \$4312.50
Volume 1 – North American Market ~~\$1850~~ \$1387.50
Volume 2 – International Market ~~\$1850~~ \$1387.50
Volume 3 – Market Analysis/Forecast ~~\$1850~~ \$1387.50
Volume 4 – Supplier Profiles ~~\$500~~ \$375

The World Market for Substation Automation and Integration Programs in Electric Utilities: 2008-2010

Complete Four Volume Set – ~~\$7500~~ \$5625
Volume 1 - North American Market – ~~\$2500~~ \$1875
Volume 2, International Market – ~~\$2500~~ \$1875
Volume 3, Substation Equipment Supplier Profiles – ~~\$750~~ \$562.50
Volume 4, World Outlook: Market Forecast and Assessment – ~~\$3000~~ \$2250